|CURIEUX|

ACADEMIC REVIEW

Humanities & Social Sciences

2026 Issue Part 1

Editing Staff

Chief-In-Editor

George Hasnah

Lead Editor

Amanuel Geremew

Ashley Du

Assisting Editors

Jing Yan Huang

Nidhi Potineni

Sophia Kong

Tony Yuan

Ridit Aggarwal

Manu Sharma

Rishi Gadikota

Eric Wang

Table Of Contents

Page 6: Shaping the School Environment for Introvert Success By Brandon Qu

Page 29: An Analysis of the Religious Symbolism Behind the Pantheon's Dome By Sloane Atterbury

Page 36: Epistemic Authority: Teachers vs. AI By Jiwoo Leah

Page 47: Criminal Justice: How U.S. Court Systems Process Cases and Make Decisions in Criminal Trials By Grace Zhao

Page 57: Integration of Psychological Profiling and Rehabilitation Programs to Combat Criminal Recidivism By Rithvik Shabari

Page 71: Rights for Whom? A Comparison Between Early America and First-Wave Feminism By Ha Yul (Ellie) Kim

Page 87: The Systemic Limitations of Addressing Youth Drug Use in South Korea By Jayoo Kim

Page 98: Rethinking the Dread - Student Attitudes toward Sociological Research Methods By Shaan Kahlon

Page 101: When Should AI-Generated Content Be Labeled, and Who Is Responsible? By Hongxuan Steven Liu

Page 106: The Effects of Pressure During Competition and Whether Cognitive Reframing Techniques Influence Their Emotional Regulation and Confidence By Nitya Agrawal

Page 119: Bridging the Urban Divide By Dhiaan Sheth

Page 126: Surface-Level Friendships in Adolescence: Psychological, Digital, and Sociocultural Drivers and Scaffolding Intimacy through Mixed-Methods Investigation By Tae Kim

Page 144: Attached to AI: A Theoretical Framework Linking Attachment Theory to Children's Reliance on Conversational AI By Katie Lee

Page 166: The Influence of Suggestive Questioning On Reconstructive Memory By Mahathi Karthikeyan

Page 172: Doomscrolling and Self-Perceived Attention Span Among High School Students By Rhythm Ramkumar

Page 187: Navigating Dual Cultures: Parental Racial-Ethnic Socialization, Acculturative Family Distancing, and Biculturalism on Asian American Adolescent Mental Health By Maddie Park

Page 209: Patterns of Pedagogical Repetition in Children's Educational Television By Sarah Du

Page 221: Attention Matters: The Effects of a Digital Literacy Intervention on Middle School Students' Understanding of Social Media's Business Model and Mental Health Effects By Griffin Feinbloom

Page 230: Mindfulness in Female Students and Female Student-Athletes: A Comparative Review By Nia I. Orbé-Austin and Romi Mukherjee, Ph.D.

Page 245: How Teacher–Student Relationships Influence High School Grading By Amariah Covington

Page 256: Bottlenecks and Committee Filtering: A Markov Chain Analysis of Bill Progression in the Colorado General Assembly By Michael Zhang

Page 276: Against Erasure: Death, Dignity, and Humanity's Refusal to Disappear By Kunyu Wei

Page 282: How Does the Constant Marketing of Makeup Affect the Self-Confidence of an Adolescent Girl? By Meghana T. Tadala

Page 286: The Delegitimizing Effect of Espionage on the Professions and Civil Society in Russia (1800-Present) By Sara Gupta

Page 295: Evaluating the Conditions for Mexico's 2024 Judicial Reforms By Sam Yuyang Zhai

Page 315: The Barrier from Within: Understanding the Manufactured Stigma Surrounding SNAP Participation By Jiya Summer Shah

Page 330: The Body Beyond Death: A Psychological Account of Posthumous Bodily Concern By Vicky Wang

Page 336: "The Hand That Hates The Cradle": Blackpill's Influence On The Political Ideologies of Young Men By Saahil Khanna

Page 341: High Schoolers' Confidence and Ability in Medical Misinformation Detection By Charles Skidmore

Page 351: Annihilation and Delegation: Comparing Fear Frames in Cold War Nuclear and Contemporary AI Discourse By Eleanor Chen

Page 374: Does Movement Enhance Memory? An Investigation Across Physical, Virtual, and Imagined Navigation By Huda Al-Abbadi

Page 393: One Is Not Born a Philosopher: The Life and Thought of Simone de Beauvoir By Adriana Wu

Page 401: Recognizing Both the State and Federal Governments as Enablers in the United States' Wilderness Therapy Programs By Brynn Dickerson

Page 406: Can Understanding Trauma-Informed Psychology Lead to Better Juvenile Justice Policies? By Shivika Singh

Page 422: Why the Alarm Needs a Delay for High School Students By Leela Bhat-Roach

Page 424: The Library of Alexandria: Burned Books, Broken Culture By Cyrus Mohebi

Page 428: Watched, Controlled, Contained: Surveillance and Discipline of Female Migrant Domestic Workers in Singapore By Lac Nghi Nguyen

Page 437: Exploring the Impact of Social Media on Adolescent Depression and Interpersonal Relationships By Giselle Megan Li

Page 451: From Story Immersion to Perspective-Taking: A Conceptual Review of Reflective Fiction Reading in Young Adults By Utkarsh Puri

Page 461: Administrative Formality: How Britain Turned Partition into Catastrophe By Oscar Ooi

Page 467: The Impact of Divorce on Children's Emotional and Neurological Development: Mediating Factors and Developmental Outcomes By Rowan Mandia

Page 480: Understanding Social Media Beauty Standards' Influence on Adolescent Girls: A Theoretical Review By Nishika Mehta

Page 487: Misrepresentation of the "Other": How Western Media Shapes Perceptions of Islam By Yuki Nakagome

Page 493: Will Gene Editing Destroy What It Means to Be Human? By Serena Missailidis

Page 505: Beyond the Baton: How Blind Musicians Experience Conductor Cues in Ensemble Performance By Daniel Choi

Page 514: Che Guevara: Legacy or Logo? By Ryan Sihan Wu

Page 519: "R-R-R-Riot? But they have tanks!": A Theory on Rebellion and Repression By Anni Dai

Page 525: Comparing Urban Expansion Models in Hanoi: Satellite Cities and Private Urban Developments By Vu Ha Anh Nguyen

Page 538: Opinions Matter: The Importance of Perceptions Towards Vitiligo By Kayla Sapienza

Page 553: When Fear Replaced the Truth: Self-Deceit in Nazi Germany By Grace Cai

Shaping the School Environment for Introvert Success By Brandon Qu

Abstract

This study investigated how teachers at a public high school ranked in the top 5% in California identify and support introverted students in their classrooms, both academically and socially. Thirteen semi-structured interviews were conducted with high school teachers to identify the most important research-based supportive practices in their experience. The study also explores how teachers approached instructional strategies. Findings suggest that teachers believe creating psychologically safe classroom environments, building genuine personal connections with students, and scaffolding participation incrementally can improve introverted students' academic engagement, social confidence, and willingness to participate over the course of a school year. Ultimately, the study proposes that effective support for introverted students is not the product of any single strategy but rather the cumulative effect of a relational, adaptive, and structurally intentional classroom environment in which safety, trust, and graduated challenge work in concert, and that large class sizes represent a systemic barrier that disproportionately undermines teachers' ability to implement these practices equitably.

Keywords: Classroom participation, High school, Introversion, Psychological safety, Scaffolded instruction, Secondary education, Socio-emotional learning, Teacher-student relationship

Introduction

The question of how to effectively support introverted students in high school classrooms sits at the intersection of educational practice, socio-emotional development, and personality psychology. Although introversion and extroversion have been studied as fundamental personality dimensions since Jung's (1921) foundational work on psychological types, the application of this research to classroom pedagogy remains underdeveloped relative to its practical significance. Susan Cain's (2012) book, *Quiet: The Power of Introverts in a World That Can't Stop Talking,* drew mainstream attention to what she described as a pervasive "extrovert ideal" (Cain, 2012, p. 14) in Western educational systems – the structural and cultural preference for students who are vocal, collaborative, and outwardly expressive – while quieter, more reflective learners are systematically overlooked or misread as disengaged. Approximately 90% of people fall somewhere in the middle of the introversion-extroversion spectrum rather than at its poles (Gander, 2024), meaning that personality-informed pedagogy is not a niche accommodation, but a broadly relevant design question.

Despite the scale of this challenge, high school teachers rarely receive formal training in how to identify or support introverted students (Korem, 2024). Research on classroom climate, cooperative learning, teacher-student relationships, and social-emotional learning provides a robust theoretical foundation for addressing this gap. Yet, few studies have examined how teachers translate this research into practice at the high school level. This study addresses that

gap directly by asking: *How do teachers in a high-performing California high school identify and then academically and socially support introverted students in their classrooms?*

To answer this question, semi-structured interviews were conducted with thirteen high school teachers at a California high school ranked in the top 5% statewide. The teachers represented a range of subjects (STEM and humanities), experience levels, and professional backgrounds. Their responses were analyzed using inductive thematic coding, producing nine codes aligned with the existing research literature. This paper presents the methodology, findings, literature review, and discussion arising from that analysis, and concludes with a framework for supporting introverted students that is both research-grounded and practically actionable.

Methodology

Research Design

This study employed a qualitative research design using semi-structured interviews. The semi-structured format was chosen deliberately to give teachers the agency to introduce ideas, experiences, and strategies drawn from their own classroom practice, rather than constraining them to a fixed set of responses. Each interview was conducted in person and audio-recorded with participant consent. Brandon Qu conducted all interviews in his capacity as a student researcher.

Sample

Convenience sampling was used to find thirteen high school teachers who participated in this study, all employed at the same California public high school attended by the researcher, ranked in the top 5% statewide. Participants included teachers from a range of subject areas, including English, mathematics, chemistry, psychology, engineering, business, music, and history. Years of teaching experience ranged from approximately 5 to 30 years. All participants are identified by pseudonymous labels (Teacher 1 through Teacher 13) throughout this study, and their data were aggregated to help preserve the confidentiality of their responses. One teacher's interview was conducted in written form.

Biases

Nine of the thirteen participating teachers were teachers whom the researcher had previously been enrolled under as a student. This prior relationship introduces considerations that should be taken into account when interpreting findings. First, teachers with an existing relationship with the researcher may have presented their practices in a more favorable light than they might have with an unknown interviewer. Second, the researcher’s own experiences as a student in these teachers’ classrooms may have influenced the framing of interview questions, the probing of certain responses, and the interpretation of data during thematic coding. Third, the

researcher's identity as a high school student and someone who has identified with introversion may have introduced a degree of personal investment in the findings. To mitigate these effects, the interview instrument was standardized across all thirteen participants, and thematic codes were generated inductively from the data rather than imposed in advance. Nevertheless, readers should interpret the findings with awareness that this study was conducted by a student researcher with prior personal ties to the majority of participants.

Interview Instrument

The interview instrument included questions about teachers' professional background and Socio-Emotional Learning training, their definitions and perceptions of introverted students, their academic and social support strategies, the challenges they face in supporting introverted students, and advice they would give to new teachers. Each interview lasted between 15 and 30 minutes.

Thematic Coding

Interview transcripts were analyzed using inductive thematic coding. Nine major thematic codes emerged from the data, each aligned with existing research on introversion, classroom practice, and socio-emotional learning. The codes were: Creating a Safe, Welcoming Space [A], Small Group and Structured Pair Work [B], Scaffolded and Graduated Participation [C], Relationship Building and Personal Connection [D], Meeting Students Where They Are [E], Class Size as a Barrier [F], Alternative and Flexible Assessment [G], Gentle Pushing Beyond the Comfort Zone [H], Social-Emotional Awareness and Growth Mindset [I]. A total of 193 distinct coded instances were identified across the 13 interviews. Codes were counted by discrete evidence instances: observable claims, strategies, or observations, etc. The distribution of codes across teachers is presented in Table 1 in the Findings section.

Literature Review

The nine thematic codes that emerged most prominently from the interview data each correspond to a well-developed body of scholarly literature. This review examines the existing research aligned to each theme, assesses the extent to which teachers' reported practices align with or diverge from research evidence, and identifies distinctions that future research in this area should consider.

Theme A: Creating a Safe, Welcoming Classroom Space

The most prevalent theme in the interview data, mentioned in 12 of 13 teacher interviews with 34 distinct mentions, was teachers' effort to create psychologically safe classroom environments. This finding is robustly supported by educational research literature.

Psychological Safety and Introversion

The concept of psychological safety, originally theorized in organizational psychology by Edmondson (1999) and later adapted to educational settings, refers to a shared belief among members of an environment that interpersonal risk-taking will not result in punishment or humiliation. For introverted students, the absence of psychological safety can be particularly debilitating. Cain (2012) describes how introverts experience heightened arousal in stimulating social environments, making the fear of public judgment significantly more physiologically costly for them than for their extroverted peers. Research on shy and introverted students in classroom settings confirms that perceived threat, whether from cold-calling, unsolicited public attention, or embarrassment, reduces verbal participation and, over time, academic engagement (Kalutskaya et al., 2015; Crozier & Hostettler, 2021).

The Role of Classroom Climate

Analyses in educational psychology have increasingly emphasized that classroom participation is less about innate personality and more about whether students feel psychologically safe and intellectually respected (Avant et al., 2011). Research on classroom climate consistently shows that positive, supportive classroom environments improve school functioning for shy students (Avant et al., 2011). Stewart (2019) notes that introverted students experience increased performance when they can work in calm, low-stimulation settings, and that they often internalize negative social messages about their quiet nature, which causes significant psychological distress. Teachers who actively counter this, whether through predictable routines, non-threatening first interactions, and explicit messaging that students need not change who they are, directly address this internalized stigma.

Theme B: Small Group and Structured Pair Work

Small group and pair work was mentioned in 11 of 13 teacher interviews (15 coded instances), making it the second most broadly expressed theme by teacher count and the most uniformly described specific classroom strategy.

Research Support for Cooperative Small-Group Learning

The research base supporting small-group and pair work as introvert-friendly pedagogical tools is substantial. Think-Pair-Share (TPS), first developed by Lyman (1981), involves three sequential phases: individual thinking, partner discussion, and group sharing, each designed to incrementally scaffold cognitive and social participation. Research consistently demonstrates that TPS increases students' participation, reduces classroom anxiety, and improves the quality of whole-class discussion (Guenther & Abbott, 2024; Sampsel, 2013). A 2024 study published in PRiMER found that TPS significantly increased participation equity in small groups of medical students, with students indicating that the individual-thinking and paired-discussion phases were especially beneficial. These findings align precisely with the teachers' described rationale: small-group work functions as a low-stakes rehearsal space before public sharing.

Cooperative Learning and Introversion: A Nuance

The literature does introduce an important qualification. Active learning environments that require mandatory group interaction can cause general anxiety among introverted students, particularly when group work is unstructured or forces public performance without preparation (Ai et al., 2025). This suggests that the benefit of small groups is contingent on structure – a point the teachers clearly understood. One teacher's practice of calling on a table rather than an individual and another teacher's spokesperson model – where one designated student reports the small group's collective answer to the whole class – both represent structured forms of cooperative participation that distribute cognitive load and reduce individual exposure, which aligns with the research literature's emphasis on the importance of structured scaffolding within group activities.

Theme C: Scaffolded and Graduated Participation

Scaffolded and graduated participation is the third most expressed theme, with 21 coded instances across 9 of 13 teacher interviews. Scaffolded participation represents a distinct and well-theorized instructional approach in both the interview data and the broader literature.

Scaffolding Theory and Gradual Release

The concept of scaffolding in education draws on Vygotsky's (1978) zone of proximal development, referring to structured support that allows a learner to accomplish tasks they could not yet accomplish independently, with the support gradually withdrawn as competence grows. In the context of oral participation, scaffolding means creating an incremental pathway from private to public expression, a sequence that several teachers described almost identically as moving from one-on-one to small group to whole class. Research on scaffolding for shy students confirms this graduated approach is effective.

One teacher noted their credential program explicitly taught scaffolding for students "in different places socially and emotionally," and their described practice – using seating configurations that maintain familiar section groups while introducing new neighbors – reflects a physical application of scaffolding principles. Another teacher's practice of giving introverted students advance notice before calling on them represents a temporal scaffold, providing them with time to prepare mentally rather than requiring them to perform spontaneously in public.

Theme D: Relationship Building and Personal Connection

Relationship building was the second most prevalent theme overall (32 instances, 12 of 13 teachers). Its ubiquity across teacher backgrounds, subjects, and years of experience suggests it represents a foundational dimension of effective support for introverted students.

Teacher-Student Relationships and Academic Outcomes

The association between teacher-student relationship (TSR) quality and academic and social outcomes is one of the most consistently supported findings in educational research. A

2025 systematic review of 37 longitudinal studies (Di Lisio et al., 2025a) found that positive teacher-student relationships, characterized by closeness, warmth, and emotional security, predicted greater academic engagement and reduced early school leaving, with effects particularly pronounced among vulnerable student populations. A second major systematic review (Di Lisio et al., 2025b) confirmed that emotional, behavioral, and cognitive engagement each serve as mediators between TSR quality and academic achievement.

For introverted students in particular, the relationship between TSR quality and participation appears especially strong. Nyborg et al. (2023) found that many introverted and shy students who seemed closed off in whole-class settings were willing to open up in individual or small-group interactions with the teacher. One teacher articulated this mechanism clearly: "If you get to know people, they're going to be less likely to be introverted," framing familiarity as the catalyst for reduced social withdrawal. Another teacher's philosophy, that no one cares how much you know until they know how much you care, is well-supported by attachment theory applications in education (Pianta, 1999; Hamre & Pianta, 2001), which frame teacher-student trust as the emotional foundation from which academic risk-taking becomes possible.

Personal Knowledge of Students

One teacher's practice of remembering personal details about every student and following up on them reflects what Jennings and Greenberg (2009) describe as the kind of genuine, attentive relational investment that predicts positive classroom outcomes. Research by Jennings and Greenberg (2009) in *The Prosocial Classroom* demonstrates that teachers' social and emotional competence, including their ability to form warm, attentive relationships, is among the strongest predictors of positive classroom outcomes. There is a strong parallel with interview data: every teacher who described strong outcomes with introverted students also described some form of intentional, personal knowledge-building.

Theme E: Meeting Students Where They Are

This theme, which was mentioned in 11 of 13 teacher interviews with 24 coded instances, encompasses teachers' broader adaptations of instruction, expectations, and interaction styles to fit individual students' temperaments and current comfort levels.

Differentiated Instruction and Personality-Informed Pedagogy

The research on differentiated instruction (DI) is extensive, though relatively little of it explicitly focuses on introversion and extroversion as dimensions of learner differences. A 2024 study published in *the Advanced Social Science Archive Journal* represents a notable exception: through qualitative inquiry with introverted secondary school students and experienced teachers, researchers identified that pedagogical differentiation – adapting content delivery, grouping, and assessment to introvert-friendly formats – significantly improved both academic engagement and classroom experience for introverted learners. The study explicitly calls for personality-informed pedagogy and professional development programs focused on this dimension.

A key finding in both the interview data and the literature is that strategies designed for introverted students tend to benefit all students (Teacher 1: “Once you have your lesson plan figured out, it should address all those things… it doesn’t create extra work”; Teacher 2: “I try to pick strategies that will benefit everyone, albeit perhaps in different ways”). This aligns with universal design for learning (UDL) principles, which argue that designing for the margins of a population tends to improve outcomes for the center as well. (CAST, 2018)

The Introversion-Disengagement Distinction

Both the literature and teacher interviews repeatedly highlight the difficulty of distinguishing introversion from disengagement or a lack of interest. One teacher noted that introverted students are often interested – their quietness is not apathy – while another teacher cautioned that teachers often misinterpret introversion as apathy. Another teacher makes the same point: a student may be introverted as a student (unwilling to speak in class) without being introverted as a person, and the written work such students produce often reveals significantly more intellectual engagement than their verbal participation suggests. Korem (2024) warns that teachers who are unaware of this distinction may label introverted adolescents simply as quiet students who do not participate, overlooking the internal emotional factors underlying their behavior.

Theme F: Class Size as a Barrier

Class size concerns were mentioned in 10 of 13 teacher interviews (18 coded instances), making it the most prevalent structural or systemic theme in the data. Unlike the other codes, this theme reflects a constraint on practice rather than a practice itself.

Research on Class Size and Individualized Attention

The extant literature robustly supports teachers' perceptions that larger classes impede individualized support. A 2011 systematic review of class size research confirms that smaller classes lead to students receiving more individual attention from teachers and having more positive interactions with them, with engagement decreasing more markedly in larger classes at the secondary level (particularly for lower-attaining students) (Blatchford et al., 2011; Finn & Achilles, 1990). Blatchford et al. (2011) found that teachers in large secondary classes reported significant challenges in effectively engaging with each student or providing personalized attention.

For introverted students in particular, the implications of large class sizes are compounded. One teacher calculated this precisely: a thirty-second check-in with each of 35 students consumes nearly 18 minutes of class time, which is time unavailable when lessons must proceed. Introverted students, who, by definition, are less likely to self-advocate, raise their hands, or initiate interactions with teachers, are disproportionately disadvantaged in large classes because the teacher's limited individual contact time is naturally drawn toward students who actively seek it. Blatchford et al. 's (2011) finding that lower-attaining secondary pupils are

particularly disadvantaged in large classes parallels this mechanism, suggesting that introverted students constitute a vulnerability group within large class settings.

Theme G: Alternative and Flexible Assessment

Alternative assessment was the least prevalent theme by teacher count (6 of 13 teachers, 12 coded instances), yet it represents a theoretically important dimension of inclusive pedagogy.

Universal Design and Multiple Means of Expression

Universal Design for Learning (UDL), developed by CAST (2018), provides the broadest research framework for alternative assessment, identifying multiple means of expression as a core principle of inclusive instructional design. UDL argues that offering students varied ways to demonstrate knowledge: written, oral, visual, performance-based, or digital, reduces barriers to demonstrating actual learning that arise from the presentation format rather than from knowledge gaps. For introverted students, mandatory oral or public performance formats can create exactly these kinds of format-based barriers, where the student's willingness to speak publicly – not their understanding of the content – determines their performance and grade.

Multiple teachers' scaffolded sharing strategies serve as UDL-aligned alternative expressions; they preserve the task's academic demand while removing the public performance component. Another teacher offers an articulation of UDL's multiple means of expression principle among the interviewed teachers, offering students a menu of options for final assignment. These practices align with UDL's broader argument that assessment formats themselves can be barriers to demonstrating actual learning: when the evaluative pressure of a grade and the performance pressure of a rubric are removed, students, particularly those who are self-critical or fear judgment, may demonstrate more authentic intellectual engagement. Notably, teachers consistently described these as accommodations of last resort or as supplements to (not replacements for) verbal participation, which aligns with UDL's emphasis on providing options rather than exemptions.

Theme H: Gentle Pushing Beyond the Comfort Zone

Mentioned in 7 of 13 teacher interviews (14 coded instances), the push-comfort tension represents one of the most theoretically complex themes in the data, and one of the most debated in the research literature.

The Debate: Acceptance vs. Development

The literature is divided on whether introverted students should be encouraged or gently pushed to participate more verbally, or whether classroom environments should more fundamentally adapt to accommodate introverted preferences rather than pressuring introverts to simulate extroversion. Cain (2012) presents the strongest case for acceptance: she argues that the education system's structural bias toward verbal, collaborative performance constitutes a systemic disadvantage for introverted students, and that forcing introverts to perform in an

extroverted manner is both inequitable and counterproductive. One teacher's view, that some students choose introversion and should not be forced to change, reflects this position. Against this, research on skill-building and long-term outcomes (Ai et al., 2025) describes mandatory classroom participation as distressing when poorly handled, but also acknowledges that developing the capacity to communicate in groups is a genuinely necessary life skill. Teachers at all experience levels in the interview data expressed versions of the developmental argument: that avoiding discomfort entirely may deprive students of growth opportunities they will need in professional and social adult life. This is explicitly theorized in the educational anxiety literature (Ai et al., 2025), which distinguishes between anxiety that should be managed and accommodated and anxiety that, when gently confronted in scaffolded contexts, produces confidence and competence over time.

Post-COVID Context

Multiple teachers noted that the COVID-19 pandemic had intensified this tension. Post-pandemic research confirms this perception: pandemic-related disruptions in social development led to measurable increases in anxiety, loneliness, and social withdrawal among adolescents (UCLA Center for the Transformation of Schools, 2022), with educators reporting higher percentages of students who prefer not to engage verbally in class and require significantly more scaffolding to do so. The SEL-focused literature recommends that post-pandemic schools intensify both relationship-building and graduated exposure strategies. This combination maps directly onto themes: Creating a Safe, Welcoming Classroom Space [A]; Scaffolded and Graduated Participation [C]; Relationship Building and Personal Connection [D]; Gentle Pushing Beyond the Comfort Zone [H], working together.

Theme I: Social-Emotional Awareness and Growth Mindset

Mentioned in 8 of 13 teacher interviews (23 coded instances), this theme encompasses teachers' attention to students' emotional states, their efforts to normalize struggle and mistakes, and their fostering of what Dweck (2006) termed a growth mindset.

Growth Mindset and Academic Outcomes

Growth mindset theory, developed by Dweck (2006) and extensively researched since, proposes that students who believe their intelligence and abilities can be developed through effort and learning are more likely to embrace challenges, persist after setbacks, and achieve at higher levels. Research consistently shows that a growth mindset fosters a positive psychological framework that diminishes fear of failure, nurtures grit, and enhances self-efficacy (Zhao et al., 2024). For introverted students, who often experience self-doubt and self-criticism in public speaking contexts (as described by one teacher), the internalization of a fixed mindset or the belief that their reticence reflects a fixed and inferior trait can become self-fulfilling. Another teacher's strategy of deliberately asking questions that most students would get wrong, so that making mistakes becomes normalized, is a direct application of growth mindset

pedagogy: it restructures the social meaning of error from evidence of incompetence to a universal experience of learning. Research by Jacovidis et al. (2020) explicitly links a growth-oriented classroom environment, including the display of beautiful mistakes and the normalization of early drafts, to students' increased willingness to take intellectual risks.

Fear of Mistakes and Verbal Participation

Research on the relationship between classroom anxiety and verbal participation confirms the mechanism described by teachers. Studies in educational psychology demonstrate that a positive classroom atmosphere can stimulate students' interest in learning and lessen their fear of making mistakes, with teacher-student interaction, open discussion spaces, and supportive feedback identified as crucial factors in alleviating classroom anxiety (Ai et al., 2025). The Norwegian teacher survey (Nyborg et al., 2023; Coplan et al., 2022) found that the most effective teacher strategies for reducing anxiety in shy students included making the social consequences of mistakes less severe through humor, normalization, and predictable positive responses from the teacher, rather than simply reducing the frequency of public participation demands.

Cultural Dimensions of SEL

One teacher raised a dimension of socio-emotional awareness that the existing [I] code does not fully capture: cultural background as a variable shaping apparent introversion. She described encountering a quiet student, not due to personality-based introversion but rather due to a cultural orientation toward deference to authority figures. Research on culturally responsive SEL (Lim et al., 2024; Levine et al., 2023) confirms that students from cultures with different norms around speaking to authority figures, eye contact, or questioning in public may be misidentified as introverted when their behavior is better understood as culturally mediated deference. This suggests a distinct subcategory: Cultural Dimensions of Apparent Introversion, which would capture the distinction between introversion as a personality trait and quiet behavior as a culturally shaped communication style.

Post-COVID SEL Demands

Multiple teachers referenced a post-COVID shift in students' willingness and ability to engage verbally in class. Research confirms that the pandemic produced significant increases in internalizing difficulties: anxiety, withdrawal, and reduced social confidence among adolescents, with these effects persisting years after return to in-person learning (Ai et al., 2025; UCLA Center for the Transformation of Schools, 2022). The convergence of post-pandemic social development disruption with already-present introversion creates what the literature describes as a compounded vulnerability. Teachers working in a post-pandemic context are, in effect, operating in a changed landscape where the baseline proportion of students who behave like introverted students has increased, whether from personality, pandemic disruption, or clinical anxiety, making the strategies captured across all nine codes more broadly applicable than they would have been in 2019.

Findings

The findings of this study are organized around the nine thematic codes generated from 193 total coded instances across 13 teacher interviews. Each theme is presented with its frequency, supporting quotes from teachers, and an assessment of its prevalence across the sample.

Table 1

Thematic Code Frequency Summary — All Nine Codes Across 13 Interviews

Code	Theme Name	Teachers (of 13)	Total Instances
[A]	Creating a Safe, Welcoming Space	12/13	34
[B]	Small Group & Structured Pair Work	11/13	15
[C]	Scaffolded & Graduated Participation	9/13	21
[D]	Relationship Building & Connection	12/13	32
[E]	Meeting Students Where They Are	11/13	24
[F]	Class Size as a Barrier	10/13	18
[G]	Alternative & Flexible Assessment	6/13	12
[H]	Gentle Pushing Beyond Comfort Zone	7/13	14
[I]	Social-Emotional Awareness & Growth	8/13	23
	TOTALS	**13 teachers (all interviews)**	**193 instances**

Theme A: Creating a Safe, Welcoming Classroom Space

Theme A was the most prevalent finding in the study: 34 coded instances across 12 of 13 teachers. The near-universality of this theme suggests that creating psychological safety is understood by experienced high school teachers as the foundational precondition for any other support strategy to be effective.

Teachers described a range of specific practices oriented toward safety-building. Several described standing at the classroom door to greet students by name, framing this as a daily investment in knowing each student's emotional state before class began. One teacher described noticing whether a student walked the hallway alone or avoided eye contact, using those observations to identify students who might need more individual support inside the classroom: "If you're always a student that's walking alone in the halls, or that I don't regularly see you engage with your peers, that tells me something about how you're coming into my class." (Teacher 3, Chemistry teacher)

Another teacher described the importance of predictable classroom routines as a safety mechanism, noting that unpredictability itself is a source of anxiety for many students: "I have a natural routine. Kids know what to expect when they come in here. I'm not one of those teachers that says, 'Hey, let's do this today,' because that puts a lot of kids on edge." (Teacher 2, English teacher)

Several teachers also described explicitly communicating to students that they did not need to change who they were to be successful in the class, which is a direct counter to what Cain (2012) identified as the extrovert ideal's implicit message that introverted behavior is a deficit: "They don't have to change who they are to still learn well in your class." (Teacher 9, History teacher)

Teachers who described creating safe spaces also consistently reported that students who would not speak in whole-class settings would open up significantly in individual conversations, a finding that mirrors Nyborg et al.'s (2023) research on the relationship between safety and shy students' willingness to engage.

Theme B: Small Group and Structured Pair Work

Small group and pair work was the most uniformly described specific strategy across the interviews, appearing in 11 of 13 interviews with 15 coded instances. Teachers from English, mathematics, chemistry, psychology, engineering, choir, and business all described using small-group and partner structures to give introverted students a lower-stakes rehearsal space before whole-class participation.

The most commonly described format was a version of think-pair-share: students think individually, then discuss with a partner or small group, before sharing with the full class. One teacher described this as a scaffolding mechanism:

> "If you talk with a single person, then a smaller group, you're now building up the capacity for them to just do that thing that they were doing or talking one-on-one. Now you're just talking to the whole group of people, so there's this slow build-up of one-on-one groups and then the whole class." (Teacher 1, English teacher)

Several teachers also described deliberately structuring group composition, either assigning groups themselves rather than allowing self-selection, or tweaking randomly generated groups to ensure introverted students had at least one peer they were comfortable with. One teacher described this as a deliberate intervention in the social dynamics of the classroom:

> "I'll kind of tweak some groups I usually assign randomly if I know one is an introvert, so they've got a friend or at least somebody they're more comfortable with to get them more interactive in the group." (Teacher 3, Chemistry teacher)

Theme C: Scaffolded and Graduated Participation

With 21 coded instances across 9 of 13 teachers, scaffolded participation was the third most expressed theme. The key distinction between this code and Theme B is intentionality and sequencing: Theme C captures teachers' deliberate, graduated approaches to moving students from private expression toward public participation over time.
One teacher described giving introverted students advance notice before calling on them, allowing mental preparation rather than spontaneous public performance:

> "I will come by, and I will let the student know, hey, I'm gonna call on you next, so just make sure you have an answer prepared. It gives them that opportunity to work on it and make sure that they have the right answer and feel 100% confident...It's more of a rehearsed thing as opposed to feeling like being put on the spot." (Teacher 8, Mathematics)

One teacher described using a daily icebreaker to warm up social participation before academic content, and separately building individual reset time into every class period so that students who are drained by social interaction could recharge:

> "Having elements of each day so that students who are taxed by engaging with other people, for whom it becomes more of an effort, they know in my class that they're gonna have some time to kind of reset individually." (Teacher 6, Psychology teacher)

Taken together, these practices reflect a consistent understanding that participation is a skill that must be built gradually, not a baseline that can be expected from all students on day one.

Theme D: Relationship Building and Personal Connection

Relationship building was tied with Theme A as the most prevalent finding, with 32 coded instances across 12 of 13 teachers. Every teacher who described sustained success with introverted students also described some form of deliberate personal connection-building. The universality of this theme across teaching experience levels, subjects, and personalities suggests it is understood as a professional obligation rather than a personality-dependent preference. Multiple teachers described making it a point to speak individually with every student at least once a day, whether at the door, during work time, or when circulating:

> "I make sure that I'm talking to every single student once per day, whether it's when they walk in the door and ask them how they're doing, or they're sitting working on a problem, saying How's the problem going? '" (Teacher 8, Mathematics)

Another teacher described attending sporting events and extracurricular activities when invited by students as an extension of classroom relationship building:

> “If students invite me to a sporting event or some extracurricular activity, I really try to attend... going home versus choosing to stay after school and watching a student play a sport or practice... my desire to teach is to connect with students at the end of the day.” (Teacher 7, Engineering teacher)

Several teachers articulated the underlying philosophy in nearly identical terms: students will not take academic risks in a classroom where they do not feel known. One teacher put it most directly:

> "No one really cares how much you know... no one really cares about any of those things unless they know how much you care. It's how you make students feel again seen, heard, and feel like they belong." (Teacher 7, Engineering teacher)

Theme E: Meeting Students Where They Are

With 24 coded instances across 11 of 13 teachers, this theme captures a broad orientation toward individual adaptation: adjusting instruction, expectations, and interaction styles to meet students at their current level of comfort, rather than demanding a uniform standard of participation. Teachers described a range of specific practices.

One teacher described deliberately assigning structured roles in group projects so that introverted students had explicit, defined responsibilities they could rise to, rather than being expected to self-advocate:

> “If you assign roles that they have to do, and then switch it up, so that there are times that they have to be the team captain, and they have to be in charge of a presentation. Give them specific roles and tasks and be direct in what they're responsible for, because they can rise to the occasion; they just need to be kind of pulled out.” (Teacher 10, Business teacher)

A key finding that emerged across multiple interviews was that strategies designed for introverted students tend to benefit all students. Two teachers made this observation almost identically. This finding aligns with UDL principles and suggests that personality-informed pedagogy is not specialized accommodation but broadly effective instructional design.

Theme F: Class Size as a Barrier

Class size was identified as a structural barrier to implementing every other strategy in this study. Appearing in 10 of 13 interviews with 18 coded instances, this theme is unique in the dataset: it is the only code that does not represent a strategy but a constraint on strategy. Teachers described class sizes of 30–36 students as making individualized support fundamentally difficult. One teacher calculated the arithmetic precisely: "There's 30–35 kids in a room, right? A 30-second interaction is 20 minutes of class time that we don't have." (Teacher 3, Chemistry teacher)

Another teacher described the resulting anxiety directly:

> "I have 150 kids, and that ends up with some kids falling through the cracks. Unfortunately, I do my best to try to give opportunities... This is why large class sizes can be really detrimental to learning." (Teacher 1, English teacher)

A third teacher identified the compounding nature of this problem for introverted students specifically:

> "Probably the biggest problem of introverts sometimes is that you get into a busy pattern and they're not making noise, they're not drawing attention. You can sort of miss them for a little while." (Teacher 3, Chemistry teacher)

This theme is best understood as a systemic equity concern: the strategies that best support introverted students (one-on-one check-ins, deliberate group composition, individualized accommodations) are precisely the strategies made most difficult by large class sizes. The structural constraint disproportionately disadvantages the students who are least likely to compensate by self-advocating.

Theme G: Alternative and Flexible Assessment

Alternative assessment was the least prevalent theme by teacher count (6 of 13 teachers, 12 coded instances), yet it represents a theoretically important and consistently described strategy among those who use it. One teacher described offering a written alternative to oral presentation as a strategy of last resort, used only after all other options to support verbal participation had been exhausted:

> "So at the very last resort, I will offer, for instance, a presentation. I will offer them to do a written portion of it, but I won't let them do that at the very beginning." (Teacher 1, English teacher)

Another teacher described a private video submission option for a song-writing assignment in choir, a context where live performance is especially vulnerable, ensuring all requirements were still met:

> "Instead of having them perform it... I just had them take the option of submitting a video to me instead, but they had to do all the same requirements." (Teacher 12, Music teacher)

One teacher described a whiteboard write-and-hold-up strategy that allowed students to contribute answers visually without speaking:

> “We do some stuff with, like, whiteboards where they can write something down and hold it up, and that's a little bit easier. A lot of times, they don't have to speak... that gives them a chance to be expressive without being verbal.” (Teacher 5, Mathematics)

In each case, the strategy preserved the academic demand of the task while removing the public performance component, which is precisely the UDL principle of reducing format-based barriers while maintaining learning objectives.

Theme H: Gentle Pushing Beyond the Comfort Zone

The push-comfort tension was present in 7 of 13 interviews (14 coded instances), making it the sixth most prevalent theme. This theme is notable for representing a genuine value tension rather than a straightforward strategy: teachers across experience levels, subjects, and temperaments wrestled openly with how hard to push introverted students toward public participation. One teacher described having learned over the course of their career to push more rather than less:

> "Don't be afraid to push kids; they might not appreciate it at the time, but they will later." (Teacher 1, English teacher)

Another teacher described this as the single hardest challenge of supporting introverted students:

> “Towing that line of not making a student uncomfortable while trying to kind of build those skills is always a balance, and that's different for every student. So, I would say that’s the biggest challenge, or the hardest part, is the constant pushing of students outside of their comfort zone, within reason, so that there's learning, and there's confidence building, but not pushing them so far that you know they're uncomfortable.” (Teacher 6, Psychology teacher)

One teacher took a different view, arguing that introversion is sometimes a genuine personality preference rather than a deficit to be corrected:

> "If you know if somebody wants help being less introverted, that's different than someone who is just that way, and doesn't mind being that way." (Teacher 4, Calculus teacher)

Despite these differences in emphasis, a point of consensus emerged: no teacher advocated for either extreme (total avoidance of challenge or indiscriminate pressure to perform publicly). The shared position is that gentle, scaffolded challenge, paired with safety and trust, produces growth. One teacher offered perhaps the most precise articulation of this consensus:

> “My introverted students are still my introverted students. It's not like they're going to be extroverted by the end of my year with me. That is not the case at all. But what I do see is

them having more confidence from the beginning of the year to the end of the year." (Teacher 13, English teacher)

Theme I: Social-Emotional Awareness and Growth Mindset

This theme appeared in 8 of 13 interviews with 23 coded instances, making it the fifth most prevalent theme. It encompasses teachers' attention to the emotional underpinnings of introverted behavior, such as the fear of making mistakes, the self-criticism around public speaking, and the role of fixed versus growth mindsets in perpetuating or breaking cycles of social withdrawal Dweck, (2006). One teacher described how the fear of a bad grade may be the actual mechanism producing public silence, reframing the problem in academic structure rather than student personality:

> "I think some kids are afraid to participate because they're afraid that if they say something wrong, maybe they get a bad grade or something, right? So there's this pressure, academic pressure... maybe that anxiety is what is preventing them from actually being more expressive." (Teacher 1, English teacher)

Another teacher described a deliberate strategy of asking questions that most students would get wrong, normalizing mistakes as part of the classroom culture:

> "Reduce the risk of 'making a mistake' in class by asking questions that most people would get wrong, or asking questions that everyone will get right, to make people more comfortable with saying what they think out loud. Over time, students feel safer making a mistake in class." (Teacher 11, Mathematics)

One teacher raised a dimension not captured in the other codes: cultural background as a mediating variable in apparent introversion. She described a student whose silence was not personality-based but rooted in a cultural norm of deference to authority. This observation points to an important refinement the coding scheme should incorporate in future studies, that is, distinguishing introversion as a personality trait from quiet behavior as a culturally shaped communication style.

Discussion

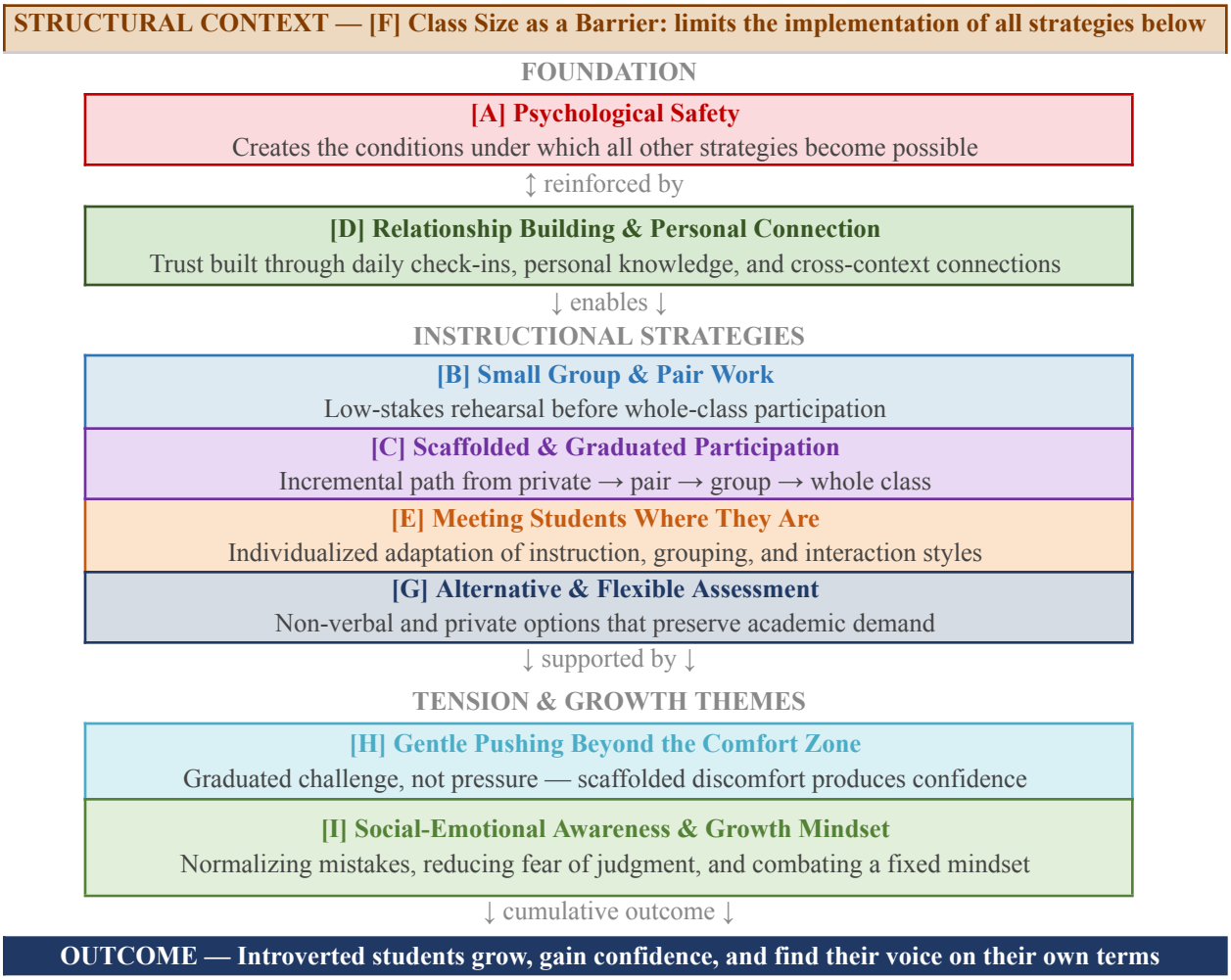
The Nine Themes Are Not Independent

Perhaps the most important finding of this study is not any single strategy or theme but their interdependence. The nine codes do not function as a menu of isolated techniques; they form an integrated system in which each element depends on and amplifies the others. Psychological safety [A] is the foundation on which relationship-building [D] becomes possible; relationship-building enables genuine meeting of students where they are [E]; scaffolded

participation [C] makes the discomfort of pushing [H] survivable; and growth mindset work [I] reframes the meaning of the mistakes that scaffolded participation inevitably produces. Figure 1 below illustrates this interdependence visually.

Figure 1.

Thematic Interdependence — How the Nine Codes Form an Integrated System



This integrated structure directly implies that teachers who implement any single strategy in isolation are unlikely to produce the outcomes that teachers in this study described. The literature supports this framing: Nyborg et al. (2023) found that even well-designed strategies for supporting shy students were ineffective when implemented in classrooms that lacked a baseline of relational trust. The teachers in this study who described the strongest outcomes with introverted students were those who described operating across all or most of the nine themes simultaneously.

Class Size as a Systemic Equity Issue

The finding that class size was identified as a barrier in 10 of 13 interviews deserves particular attention. The teachers in this study were not simply expressing a generic preference for smaller classes; they were describing how large class sizes structurally undermine the specific strategies that most effectively support introverted students. The strategies that introverted students most need, such as individualized attention, tailored group composition, and one-on-one relationship building, are precisely the strategies made most difficult by classes of 30-36 students.

This creates a structural equity concern: introverted students, who are least likely to self-advocate and most likely to become invisible in a busy classroom, are disproportionately harmed by the institutional conditions that make individualized attention difficult. Blatchford et al.'s (2011) finding that lower-attaining secondary students are particularly disadvantaged in large classes parallels this mechanism. Addressing the needs of introverted students, therefore, requires not only changes in individual teacher practice but attention to the structural conditions under which that practice occurs.

Limitations

Several limitations should be considered when interpreting the findings of this study. The sample size of thirteen teachers drawn from a single school site limits the generalizability of the findings, as the strategies and challenges described reflect one specific institutional context and may not translate to schools with different demographics or resource levels. The study also relies entirely on self-reported teacher perspectives rather than direct classroom observation, meaning the findings reflect what teachers say they do rather than necessarily what occurs in practice. Future research should seek to replicate these findings across multiple school sites and incorporate student perspectives to provide a more complete picture of effective support for introverted learners.

Implications for Teacher Training and Professional Development

The teachers in this study consistently described developing their most effective strategies through experience rather than formal training. Several noted that credential programs, while valuable, did not prepare them for the specific challenge of supporting introverted students. This gap between preparation and practice has a straightforward implication: professional development programs should include explicit, research-grounded attention to personality-informed pedagogy, including the introversion-social anxiety distinction, culturally responsive understandings of quiet behavior, and evidence-based strategies such as wait time that may not emerge organically through experiential learning.

One teacher's suggestion that new teachers seek feedback from students through end-of-year surveys points to a complementary approach: the students themselves are a source of data about what works. Creating structured channels for student feedback on classroom climate and participation design could help teachers calibrate their strategies more effectively.

Conclusion

The existing research literature on introversion, classroom participation, teacher-student relationships, cooperative learning, differentiated instruction, class size, and social-emotional development strongly supports the nine thematic codes derived from thirteen teacher interviews. Across nearly every theme, the teachers' described practices align with evidence-based strategies, even when those strategies were developed through experience rather than formal training. This finding reflects the practical wisdom that experiential learning produces, as one teacher put it: "You learn so much more from seeing your 180 students every day."

At the same time, this study reveals meaningful gaps between what the research supports and what teachers currently practice or discuss. Wait time, the introversion-social anxiety distinction, and cultural dimensions of quiet behavior each represent evidence-based considerations that were largely absent from the interviews, suggesting opportunities for more targeted professional development.

The findings also underscore a systemic challenge that no individual teacher can resolve alone. Large class sizes structurally undermine the strategies that most effectively support introverted students, creating an equity problem that requires institutional as well as individual attention. Schools that are serious about supporting introverted learners must address both the relational and structural conditions of their classrooms.

All in all, this paper provides ample evidence for schools and offers a meaningful step by presenting a framework for schools and teachers to improve school environments for introverted students through the strategies discussed, demonstrating that, with proper educator support and commitment, introverted students will grow, gain confidence, and find their voice on their own terms.

Works Cited

Ai, Z., Yuan, D., Dong, R., Li, Y., & Zhou, S. (2025). Revealing the impact of teaching methods on anxiety among college students through a bibliometric study. Frontiers in Psychology, 16, Article 1558313. https://doi.org/10.3389/fpsyg.2025.1558313

Avant, T. S., Gazelle, H., & Faldowski, R. (2011). Classroom emotional climate as a moderator of anxious solitary children's longitudinal risk for peer exclusion: A child × environment model. Developmental Psychology, 47(6), 1711–1727. https://doi.org/10.1037/a0024021

Blatchford, P., Bassett, P., & Brown, P. (2011). Examining the effect of class size on classroom engagement and teacher-pupil interaction: Differences in relation to pupil prior attainment and primary vs. secondary schools. Learning and Instruction, 21(6), 715–730. https://doi.org/10.1016/j.learninstruc.2011.04.006

Cain, S. (2012). Quiet: The power of introverts in a world that can't stop talking. Crown Publishers.

CAST. (2018). Universal design for learning guidelines (Version 2.2). http://udlguidelines.cast.org

Coplan, R. J., Ooi, L. L., & Rudasill, K. M. (2022). Teachers' strategies for managing shy students' anxiety at school. Nordic Psychology, 75(1). https://doi.org/10.1080/19012276.2022.2058072

Crozier, W. R., & Hostettler, K. (2021). Teachers' strategies for enhancing shy children's engagement in oral activities: Necessary, but insufficient? International Journal of Inclusive Education, 26(7), 643–658. https://doi.org/10.1080/13603116.2020.1711538

Di Lisio, G., Halty, A., Berástegui, A., Milá Roa, A., & Couso Losada, A. (2025a). The longitudinal associations between teacher-student relationships and school outcomes in typical and vulnerable student populations: A systematic review. Social Psychology of Education, 28, Article 144. https://doi.org/10.1007/s11218-025-10107-8

Di Lisio, G., Milá Roa, A., Halty, A., Berástegui, A., Couso Losada, A., & Pitillas, C. (2025b). Nurturing bonds that empower learning: A systematic review of the significance of teacher-student relationships in education. Frontiers in Education, 10, Article 1522997. https://doi.org/10.3389/feduc.2025.1522997

Dweck, C. S. (2006). Mindset: The new psychology of success. Random House.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. Administrative Science Quarterly, 44(2), 350–383. https://doi.org/10.2307/2666999

Finn, J. D., & Achilles, C. M. (1990). Answers and questions about class size: A statewide experiment. American Educational Research Journal, 27(3), 557–577. https://doi.org/10.3102/00028312027003557

Gander, K. (2024, April 25). Extrovert or introvert? Most people are actually ambiverts. Scientific American. https://www.scientificamerican.com/article/extrovert-or-introvert-most-people-are-actually-ambiverts/

Guenther, A. R., & Abbott, C. M. (2024). Think-pair-share: Promoting equitable participation and in-depth discussion. PRiMER: Peer-Reviewed Reports in Medical Education Research, 8, 7. https://doi.org/10.22454/PRiMER.2024.444143

Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. Child Development, 72(2), 625–638. https://doi.org/10.1111/1467-8624.00302

Jacovidis, J. N., Anderson, R. C., Beach, P. T., & Chadwick, K. L. (2020). Growth mindset thinking and beliefs in teaching and learning. International Baccalaureate Organization. https://www.ibo.org/globalassets/new-structure/research/pdfs/growth-mindset-policy-paper.pdf

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. Review of Educational Research, 79(1), 491–525. https://doi.org/10.3102/0034654308325693

Jung, C. G. (1921). Psychological types. Rascher Verlag.

Kalutskaya, I. N., Archbell, K. A., Moritz Rudasill, K., & Coplan, R. J. (2015). Shy children in the classroom: From research to educational practice. Translational Issues in Psychological Science, 1(2), 149–157. https://doi.org/10.1037/tps0000024

Korem, A. (2024). Key issues in supporting student social competence in secondary school. ERIC Document EJ1490919. https://eric.ed.gov/?id=EJ1490919

Levine, R. S., Lim, R. J., & Vatne Bintliff, A. (2023). Social and emotional learning during pandemic-related remote and hybrid instruction: Teacher strategies in response to trauma. Education Sciences, 13(4), 411. https://doi.org/10.3390/educsci13040411

Lim, J. H., Rho, E., & Yang, C. (2024). Evidence-based practices of culturally responsive social and emotional learning (SEL) programs: A systematic review and meta-analysis. School Psychology Review. https://doi.org/10.1080/2372966X.2024.2432853

Lyman, F. (1981). The responsive classroom discussion: The inclusion of all students. In A. Anderson (Ed.), Mainstreaming digest. University of Maryland Press.

Nyborg, G., Mjelve, L. H., Crozier, W. R., Arnesen, A., Coplan, R. J., & Edwards, A. (2023). Teachers' strategies for helping shy students: Findings from a national survey in Norway. Scandinavian Journal of Educational Research, 68(5), 1011–1024. https://doi.org/10.1080/00313831.2023.2196534

Pianta, R. C. (1999). Enhancing relationships between children and teachers. American Psychological Association.

Rowe, M. (1972). Wait time and rewards as instructional variables: Their influence on language, logic, and fate control. Paper presented at the National Association for Research in Science Teaching.

Sampsel, A. (2013). Finding the effects of think-pair-share on student confidence and participation [Honors project]. Bowling Green State University.

Stewart, J. (2019). Supporting introverted students. ERIC EJ1230340. https://eric.ed.gov/?id=EJ1230340

UCLA Center for the Transformation of Schools. (2022). Rebuilding more humane schools post-COVID-19: Prioritizing student engagement, social-emotional learning, and well-being. https://transformschools.ucla.edu

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

Zhao, W., Shi, X., Jin, M., Li, Y., Liang, C., Ji, Y., Cao, J., Oubibi, M., Li, X., & Tian, Y. (2024). The impact of a growth mindset on high school students' learning subjective well-being: The serial mediation role of achievement motivation and grit. Frontiers in Psychology, 15, Article 1399343. https://doi.org/10.3389/fpsyg.2024.1399343

An Analysis of the Religious Symbolism Behind the Pantheon's Dome
By Sloane Atterbury

Abstract

Hadrian's Pantheon is among the most architecturally significant buildings of the ancient world. No floorplan survives from the Pantheon's construction at the end of the 1st century BC or from its renovation in the early 2nd century AD, so the meaning behind many of its architectural features remains a mystery. Scholars have interpreted that some aspects of the building reflect Roman religious beliefs and have proposed connections between elements of the building's architecture and elements of Roman religion. The question remains whether Hadrian and his architects intended for these connections or whether the structure's design was meant to allow for multiple interpretations. This paper aims to investigate the religious significance of the Pantheon's dome. I will argue that it serves as a direct link for the viewer between the heavens and the earth.

Keywords: Pantheon, Roman Architecture, Religious Symbolism, Dome, Oculus

Introduction

The Pantheon in Rome is one of the most influential architectural structures of the ancient world, yet the symbolic meaning of its design remains uncertain. Structures from the Hagia Sophia in Istanbul to the Jefferson Memorial in Washington, D.C., to St. Peter's Basilica in Rome have all imitated aspects of its design. Although the Pantheon is appreciated for its impressive engineering, its architecture expresses a deeper religious meaning. This paper argues that the Pantheon's dome serves as a direct link for the viewer between the heavens and the earth.

Origins of the Pantheon

The first Pantheon began as a temple during the reign of Augustus, around 27–25 BCE (Joost-Gaugier 24). It was built by his close ally, Marcus Agrippa. A temple was a sacred building that the Romans dedicated primarily to a specific god or goddess, and it was used as the dwelling‑place of the god's statue and as a focus for religious rituals. The name "Pantheon" comes from a combination of the Greek words *pan* ("all") and *theon* ("gods"), so it was a temple dedicated to *all* the Roman gods and goddesses (McEwen 57). As the Roman Empire continued to spread throughout the world and more gods and goddesses were recognized among the Romans, the Pantheon came to symbolize the unity of the empire through its enormous scale.

The original structure was destroyed by fire in 80 AD, and it was later completely rebuilt under Emperor Hadrian in 126 AD (Betjes 164). This can be confusing to the modern visitor, because Hadrian decided to preserve Agrippa's original inscription on the façade of the Pantheon. Throughout all the iterations of the Pantheon, the oculus has remained the focal point of the building. It expresses the connection between the architectural building and the heavens.

Design and Purpose

The Pantheon's design is a blend of classical geometry and groundbreaking Roman engineering (seen in Figure 1). It is centered on a large circular rotunda, or *cella*, that is joined to a traditional portico, or *pronaos*. The portico is lined with sixteen massive granite Corinthian columns that measure forty feet in height and are arranged in three rows (Joost-Gaugier 31). The proportions of the interior illustrate the Roman fascination with harmony and the order of the cosmos. Its height and diameter are equal (approximately one hundred forty-two feet), and it forms a perfect sphere within a cylinder (Khaled 6). This symmetry is not only aesthetically pleasing but also structurally important. It was precisely designed for the purposes of balancing its massive weight and withstanding powerful impacts (Joost-Gaugier 31).

Figure 1. Rome, the Pantheon: the north entrance (photograph by Sloane Atterbury).

Figure 2. Closer view of the Pantheon's columns (photograph by Sloane Atterbury).

The rotunda is capped by a massive, freestanding dome. The dome's ceiling is lined with coffers, or sunken panels (Khaled 9). A massive hole, or *oculus*, pierces the dome's center and measures approximately thirty feet in diameter (seen in Figure 3). These also serve multiple purposes. They, first, remove some of the dome's weight, and they, second, add an attractive decorative element. The structure's use of diagrammatic geometry, such as rotated squares and root-2 constructions, displays the advanced engineering skills of ancient Roman architects. The Romans also used concrete combined with various aggregates to achieve different densities. They utilized lighter materials at the dome's apex to minimize the structure's weight. This groundbreaking method resulted in a robust and long-lasting temple (Lancaster 124).

The Pantheon was originally built as a temple for all of Rome's gods; however, its precise religious function is still uncertain. Romans were famous for absorbing the gods of conquered peoples instead of trying to destroy them. Romans thought that the more gods who protected Rome, the better, so they welcomed foreign gods and goddesses into their religion and identified them with Roman ones (Michael). For example, the Greek Zeus became the Roman Jupiter. They even adopted cults, or the ways that gods and goddesses were worshipped, and they built many temples in Rome itself. Some scholars argue that ceremonies may have taken place inside the Pantheon to also honor divine ancestors or the imperial family. Many Romans believed that emperors could receive divine help during their lifetimes, but they became fully divine usually

only after they died through an official Senate vote (Michael). Worshipping the emperor helped express loyalty to Rome and to unite the empire both politically and religiously. Not every emperor was deified, though. The Pantheon was consecrated as a Christian church in the 7th century, which meant that it was preserved rather than quarried, and it survives into the modern era (Joost-Gaugier 28).

Dome and Oculus

The Pantheon's most famous feature is its coffered, concrete dome with a central oculus. It creates a dramatic interior space, and the oculus is the structure's only direct source of light, since there are no windows along the curved walls (Sparavigna, 1). The Pantheon faces north whereas other Roman temples typically face south (McEwen 58). This is most likely due to the astronomical alignments for the sundial. Because the Pantheon's entrance faces in this direction, the sun does not shine straight in through the door except in rare seasonal moments. This creates an environment where the light from the oculus shifts constantly as the sun moves, and the beam of the sun traces a path across the dome's interior (Magli 492). This allows the visitor to mark the time of the day and even the season of the year.

As the sun moves across the sky each day, the light shining through the oculus creates a slowly moving circular beam on the interior surfaces (seen in Figure 4). In the morning, the light appears on the left side, or the northwest part of the interior. At noon, the sunlight falls high on the dome and moves downward. In the late afternoon, the sunlight moves toward the opposite side. The position also changes with the sun's height throughout the year (Magli 492). In the winter, the sun is lower in the sky, and the beam sits lower inside the building. It can illuminate areas near the floor and the entrance. During mid-winter, sunlight may hit parts of the interior that are mostly dark the rest of the year. During the summer, the sun is much higher overhead, and the beam stays up on the upper walls and dome. This often creates a dramatic glowing effect around the lower dome (Magli 492).

The Pantheon's dome has one hundred forty coffers in total, and they are arranged in five concentric rings, with twenty-eight coffers to each ring (Khaled 9). The dome and its coffers lighten the massive surface visually and structurally. The repeated pattern of the coffers draws the eye of the viewer upward. Once the viewer is looking upward, the effect is that the dome seems to float rather than to press down on the viewer. The repeated pattern also guides the gaze of the viewer toward the oculus, through which the sky above is clearly visible. At the same time, the coffers catch the shifting light and shadow throughout the day, so the interior looks dynamic and almost alive. Therefore, it turns the immense concrete space into a visually uplifting experience.

Figure 3. The interior of the Pantheon's dome: depicts sunken panels and oculus (photograph by Sloane Atterbury).

Figure 4. Incoming light in the interior of the Pantheon at 10:00pm, 25 February 2026 (photograph by Sloane Atterbury).

Symbolism and Astronomy

The Pantheon's dome serves as a direct link between the heavens and the earth, or a symbolic meeting point between the gods and the people. The viewer is enclosed in a perfectly spherical space that represents the cosmos (Magli 492). The cosmos is made up of the sun, the moon, the planets, and the stars. The Romans believed that a sphere was the most perfect geometric shape, because it was balanced, smooth, and complete. It had no beginning or end, so it made sense that the heavens would be shaped like a sphere. The dome's shape resembles the vault of the heavens, and the oculus functions almost like the sun at the center of the cosmic sphere (McEwen 61). People inside would feel like they were looking upward into a literal opening to the heavens and to the divine while they were still standing on earth. Put simply, the dome was a bridge between human space and the eternal sky.

This argument becomes stronger when one considers that the Pantheon was built as a temple to honor all of the gods and goddesses of the Romans. For the Romans, astronomy and

religion were deeply intertwined, and many deities were directly associated with celestial bodies. For example, the sun god was called Sol, the moon goddess was called Luna, and the planets were each named after major gods, such as Mars, Venus, and Jupiter (Ngo-Trong). The Pantheon reflects this perfectly. It is dedicated to all gods of the cosmos, and, since its massive, spherical dome and central oculus represent the cosmos itself, it brings the heavens and the gods into one architectural space where humans could experience the entire cosmos directly.

Conclusion

The Pantheon stands as a permanent testament to the skills of Roman engineering, and its freestanding concrete dome is one of its most impressive aspects. I have argued in this paper that the dome, with its massive oculus, serves as a direct link for the viewer between the heavens and the earth. The shape of the dome reflects the shape of the cosmos, and its coffers lead the viewer's eye to the sky through the oculus. Additionally, the moving light and shadows on the surface reflect the dynamism of the cosmos. When standing inside the Pantheon and looking up, an ancient Roman viewer may have felt a connection to all of the gods and goddesses that the building is named in honor of.

Works Cited

1. MacDonald, William Lloyd. The Pantheon: Design, Meaning, and Progeny. 2nd ed., Harvard University Press, 2002.
2. Mark, Robert. “Reinterpreting Ancient Roman Structure.” American Scientist, vol. 75, no. 2, 1987, pp. 142–50. JSTOR, http://www.jstor.org/stable/27854535.
3. Sparavigna, Amelia Carolina, and Lidia Dastrù. “The Pantheon, Eye of Rome, and Its Glimpse of the Sky.” HAL, 27 May 2018, https://hal.science/hal-01800694v1/document
4. Yegul, Fikret K. The Pantheon by William MacDonald. Journal of the Society of Architectural Historians, vol. 37, no. 2, 1978, pp. 121–23. JSTOR, https://doi.org/10.2307/989197.
5. Hannah, Robert, and Giulio Magli. “The Role of the Sun in the Pantheon’s Design and Meaning.” Numen, vol. 58, no. 4, 2011, pp. 486–513. JSTOR, http://www.jstor.org/stable/23045866.
6. Joost-Gaugier, Christiane L. “The Iconography of Sacred Space: A Suggested Reading of the Meaning of the Roman Pantheon.” Artibus et Historiae, vol. 19, no. 38, 1998, pp. 21–42. JSTOR, https://doi.org/10.2307/1483585.
7. McEwen, Indra Kagis. “Hadrian’s Rhetoric I: The Pantheon.” RES: Anthropology and Aesthetics, no. 24, 1993, pp. 55–66. JSTOR, http://www.jstor.org/stable/20166879.

Epistemic Authority: Teachers vs. AI By Jiwoo Leah

Abstract

Artificial intelligence (AI) is rapidly becoming an integral part of education, raising questions about whether it is replacing teachers as students' primary epistemic authority or trusted source of knowledge. This study examined whether increased AI use has reduced students' trust in teachers and whether AI can functionally replace teachers in the context of credibility and educational authority. A mixed-methods, cross-sectional survey was conducted with 15 high school students aged 14 to 18, using quantitative Likert-scale and multiple-choice questions alongside qualitative open-ended responses. The survey measured perceptions of teacher credibility, AI credibility, verification behaviors, responses to teacher-AI conflicts, and broader attitudes toward authority and information evaluation. Results showed that although 53.3% of participants reported using AI daily for schoolwork, teachers consistently received higher credibility ratings than AI across all trust measures. Students were more likely to trust teachers in direct conflicts with AI, and when AI was shown to be incorrect, most participants chose to verify the information with a third source rather than continue trusting AI. Respondents also strongly agreed that a teacher's greatest value lies in providing judgment and guidance rather than facts alone. These findings suggest that AI has not replaced teachers as the primary epistemic authority for students in this sample. Instead, AI appears to be changing how students evaluate information by encouraging verification-based thinking, in which they compare information from teachers, AI, and other sources before deciding what to believe. As AI becomes increasingly integrated into education, teachers remain essential as mentors who help students critically evaluate knowledge and develop responsible information literacy.

Introduction

Students' reliance on Artificial Intelligence is increasing, affecting how they learn and process new information (Zhu, Zhang, and Wang; Singh et al.). Among the changes in how students are learning, one of the most prominent is the effect on a teacher's authority in the classroom. A teacher's authority refers to the socially recognized right to direct learning, declare knowledge, and have their judgments accepted as legitimate within an educational institution (Zhang, Li, and Ge). This authority is being challenged by the increasing use of AI, which is shifting epistemic authority (the recognized right to declare what counts as knowledge) away from the teacher and towards artificial intelligence (Li et al.). This occurs as students grant artificial intelligence increasing epistemic authority, thereby challenging a teacher's epistemic authority.

The objective of this paper is to explore what effect AI has on the current shift of epistemic authority from the teacher to AI and what social factors are affecting this shift.

AI models can be incorrect and may produce fabricated information while still appearing legitimate to users (“Mitigating Hallucinations in LLMs”). Over time, AI is increasingly used as a teacher figure, yet it lacks responsibility and accountability, as well as the ability to intervene when a student makes an incorrect judgment (Li et al.; Harvey, Koenecke, and Kizilcec; American Association of University Professors). This suggests that students might trust incorrect information presented by AI without evaluating it themselves. When students use AI without checking its accuracy or credibility, they are more likely to accept incorrect information, pose educational risks, and question whether AI should be considered a valid source of knowledge (Klimova and Pikhart). As students increasingly rely on AI without questioning its legitimacy, this can weaken teachers' authority by introducing a competing teacher figure (Parker).

In addition, students with financial advantages are more likely to have access to AI and to paid premium AI tools that provide better answers (Matjie, Nethavhani, and Matlakala). As the presence of AI continues to grow in education, these advantages exacerbate educational inequality by giving some students access to substantial information, while others may be unable to retrieve information as effectively or use AI at all.

Students are starting to view AI as a shortcut that can replace independent thinking. Due to this development, teachers' trust in students is decreasing, along with growing doubt about students' ability to complete work independently rather than using AI (“Another AI Side Effect”). Trust is the willingness to accept vulnerability, based on the assumption that the other person will act responsibly. In this context, teachers place their trust in students to complete their own work, even when they know this expectation may not be met. This weakens the relationship between teachers and students that is essential for learning, since its effectiveness depends heavily on the trust and respect that students and teachers have for each other (Viberg et al.).

Traditionally, students learn most effectively through academic socialization, or interactions such as discussions with a teacher. However, the use of AI discourages this socialization, as it provides direct answers that do not require students to engage in critical thinking, whereas teachers engage students in knowledgeable discussion (Zhang, Li, and Ge). As students increasingly depend on AI, it may replace a teacher's primary epistemic authority.

As students increasingly turn to AI for information in the classroom, teachers might no longer be seen as the primary source of education. Therefore, the authority that teachers once held has shifted towards AI, reshaping what students rely on for further knowledge.

Methodology

This study employs a mixed-methods, cross-sectional survey design to investigate how AI is influencing the shift in epistemic authority from teachers to AI among high school students. The data collected in the study were both quantitative and qualitative and were collected at a single point in time rather than over an extended period. As a result, the study is correlational. The quantitative portion of the survey includes Likert-scale and multiple-choice questions. The Likert scale quantifies relative trust in teachers versus AI and tests the four hypotheses using statistical methods. The qualitative portion of the survey consists of open-ended questions that

elicit detailed examples or perspectives that cannot be captured through multiple-choice or Likert-scale questions.

Participants in this study are high school students aged 14 to 18. The sample consists of students from middle- to high-income backgrounds, most of whom are Asian. The study uses responses from 15 participants. The participants are recruited utilizing convenience sampling through two channels. The first channel consists of school and teacher contacts, and the second consists of personal networks, which allows for additional students to complete the survey.

Because the sample is not random, it does not represent all students, and the study findings should not be generalized to the student population; instead, they should be framed as a hypothesis.

The survey is divided into seven sections. Section A: Background Information collects demographic information, including age, grade level, academic subject considered while completing the survey, and the frequency of AI use for school and for verifying teacher-provided information. Section B: Teacher Credibility measures students' perceptions of teachers as reliable sources of knowledge or information. This section uses a Likert scale ranging from strongly disagree to strongly agree to evaluate perspectives on teacher expertise, accuracy, trustworthiness, and willingness to address uncertainty. Section C: AI Credibility is similar to Section B: Teacher Credibility, but focuses on students' perspectives on AI. Section D: Verification Behavior examines how students respond to information from teachers or AI, using a Likert scale ranging from never to almost always. This section shows how often participants verify information, whom they trust more, AI or teachers, and whether they generally accept information from AI as fact. Section E: Conflict Scenarios includes hypothetical situations in which teachers and AI provide conflicting information, and participants choose which source they would believe more. Section F: Metacognition and Confidence assesses students' confidence in assessing information to determine whether information is true or false. Section G: Open-Ended Questions provides an opportunity to describe personal experiences related to the credibility of teachers and AI. These provide qualitative examples that help contextualize information collected from the quantitative part of the survey.

Results

Overview

A total of 15 students completed the survey, with the participants' grade levels ranging from 9 to 12.

53.3% (8 students) reported using AI daily, 13.3% (2 students) weekly, 20.0% (3 students) monthly, 6.7% (1 student) rarely, and 6.7% (1 student) never for schoolwork.

Access to AI was applicable to nearly all participants. 14 out of 15 students (93.3%) reported having reliable access to AI and the internet at home, while 1 student (6.7%) reported having somewhat reliable access.

The majority of participants had moderate to strong resources in their school. 46.7% (7 students) reported their school as having average resources, 40.0% (6 students) as well-resourced, and 13.3% (2 students) as under-resourced.

Section B: Trust in Teachers

The average scores for trust in teachers, reported by students on a scale of 1 to 5 (1 = strongly disagree, 5 = strongly agree), are as follows. Teacher training and credentials make them trustworthy had a score of 3.87, a teacher's statement should generally settle a question had a score of 3.47, teachers have earned the right to be believed in their subject had a score of 3.93, teachers admit when they do not know something had a score of 3.33, and teachers' authority matters less than it used to had a score of 2.27.

The highest level of agreement was with the statement that teachers have earned the right to be believed in their subject area, with an average score of 3.93. The lowest score was for the statement that teachers' authority over what is considered correct matters less than it used to, with an average score of 2.27. Overall, the responses were skewed toward agreement.

Section C: Trust in AI

The average scores regarding trust in artificial intelligence, on a scale of 1 to 5 (1 = strongly disagree, 5 = strongly agree), reported by students are as follows. AI tools are trustworthy sources of facts had a score of 2.27, AI statements should generally settle a question had a score of 2.20, AI deserves trust because it is less biased than people had a score of 1.73, AI admits when it is unsure or wrong had a score of 2.00, and AI is becoming the source people check for what is correct had a score of 4.40.

Students showed the strongest agreement with the statement that AI is becoming the thing people check to find out what is correct, with an average score of 4.40. However, students reported the lowest average score for the statement that AI deserves to be believed because it is less biased than people, with a score of 1.73.

Section D: Verification Behavior

The average scores for verifying information provided by both the teacher and the AI, on a scale of 1 to 5 (1 = almost always, 5 = never), reported by students are as follows: The average score for surprising a teacher was 3.60, while the average score for checking a surprising fact provided by AI was 3.20.

The average score for the statement that when unsure who is right, I trust the teacher over the AI was 3.73, while the average score for the statement that when unsure who is right, I trust the AI over the teacher was 2.40.

Section E: Conflict Scenarios

In the first scenario, participants were told that a teacher presented a counterintuitive fact that a banana is technically a berry. Before checking the information themselves, 80.0% (12 of

15) of respondents indicated that they would initially doubt the teacher, while 33.3% (5 of 15) would trust the teacher's statement.

In the second scenario, participants were told that an AI system confidently provided an answer, which a teacher later challenged. 80.0% (12 of 15) reported initially being unsure whom to believe, while 33.3% (5 of 15) said they would trust the teacher first. Notably, no respondents indicated that they would automatically trust the AI.

When presented with a direct conflict between a teacher and AI, 46.6% (7 of 15) selected the teacher as the more likely source to be correct, 40.0% (6 of 15) reported being unsure, and 26.6% (4 of 15) selected AI.

Participants were also asked how they would respond to a disagreement between a teacher and an AI. The majority (86.6%; 13 of 15) reported that they would check a third source. An additional 13.3% (2 of 15) indicated that they would go with the teacher, while 13.3% (2 of 15) would ask the teacher to explain further. No respondents reported simply choosing AI after the conflict.

Section F: General Attitudes

Students generally rejected the idea that experts should automatically be distrusted. The statement “Experts and professionals deserve less automatic trust than they used to” received an average score of 1.69 out of 5, indicating overall disagreement. At the same time, students acknowledged the growing role of technology in shaping how knowledge is evaluated. The statement “My generation relies on technology to settle questions more than older people do” received an average score of 3.94 out of 5, indicating broad agreement.

Students also expressed strong support for the unique value of teachers. The statement “A good teacher's main value is judgment and guidance, not just facts” received the highest average score in this section, at 4.25 out of 5.

Section G: Open-Ended Responses

Theme 1: AI Is Useful but Requires Verification

Many students described using AI as a quick source of information while emphasizing the importance of fact-checking its responses. Respondents frequently noted that AI can provide incorrect, outdated, or incomplete information despite presenting answers with confidence.

Theme 2: AI Changes the Teacher's Role Rather Than Replacing It

Students frequently argued that AI does not make teachers unimportant. Instead, AI shifts the teacher's role from simply providing information to helping students evaluate, interpret, and apply information effectively.

When asked whether AI makes teachers more or less important, the most common position was that AI makes teachers more important in a different way. Respondents argued that

while AI can quickly provide facts and answers, teachers remain crucial for guidance and ensuring that information is accurate.

Overall, the qualitative responses reinforce the quantitative findings. Students recognize the growing influence of AI but continue to view teachers as the more reliable and valuable source of educational authority.

Discussion

Hypothesis 1: Students give AI more default trust than teachers

Hypothesis 1 was not fully supported. Students consistently reported higher levels of trust in teachers than in AI. In addition, students were more likely to trust teachers than AI when the two sources of information conflicted, and they reported greater agreement with questions that emphasized teacher credibility and professionalism.

One exception to this observation was that the highest-scoring item in the AI Credibility section was the statement that "AI is becoming the source people check for what is correct." This suggests that although students may not give AI default trust, they use AI as a first point of reference when looking for information.

This suggests that trust and usage of AI are not the same, as students might use AI frequently for convenience while still believing that teachers are ultimately more reliable sources of knowledge. Therefore, AI is becoming more influential in students' learning as a source of information without fully replacing teachers as the primary holders of epistemic authority.

Hypothesis 2: More AI use directly leads to decreased teacher authority

Hypothesis 2 was partially supported. Despite high levels of AI usage, teacher credibility scores remained high. In addition, students generally disagreed with the claim that "teachers' authority over what counts as correct matters less than it used to." If AI were replacing teachers as authority figures, stronger agreement with this statement would be expected.

The results suggest that frequent use of AI and higher levels of teacher trust can coexist. Students appear to be using AI as an additional educational resource rather than as a direct replacement for teachers. AI is changing how students access information but does not weaken a teacher's authority.

Hypothesis 3: Richer schools use AI more frequently, which leads to a bigger authority shift

Hypothesis 3 cannot be confirmed from the sample. Most participants came from schools that are average or well-resourced, which does not allow for accurate comparisons between students from different educational environments.

Future testing should recruit participants from a broader range of financial and educational backgrounds to determine whether socioeconomic status influences patterns of AI use and authority (Matjie, Nethavhani, and Matlakala).

Hypothesis 4: Experiencing inaccuracy in AI increases trust in teachers

Hypothesis 4 was supported. In the scenario in which an AI confidently provided information that a teacher later challenged, none of the respondents automatically trusted the AI. Instead, most participants reported uncertainty, and a substantial portion trusted the teacher.

The open-ended responses further reinforced this finding. Many students described personal experiences in which AI provided inaccurate information or generated misleading explanations. These experiences appeared to contribute to a cautious attitude toward AI-generated information ("Mitigating Hallucinations in LLMs").

Together, these findings suggest that awareness of AI's errors encourages students to rely more heavily on teacher expertise and independent verification, strengthening rather than weakening teacher authority.

Broader Implications

A pattern across the results is that students increasingly view knowledge as something to be verified rather than automatically accepted. The rise of AI may therefore be changing how they evaluate information itself.

Historically, teachers often served as the primary source of information within the classroom. Today, students have immediate access to alternative sources through AI, often using the tool for convenience. As a result, authority is shifting from unquestioned acceptance toward more verification-based thinking in which students compare multiple sources before deciding what to believe.

Importantly, this shift does not necessarily diminish the importance of teachers. Instead, it may increase the value of teachers' judgment and ability to help students evaluate competing claims. The statements regarding teacher authority emphasized guidance and credibility over mere factual knowledge. This suggests that the role of teachers may be evolving from being providers of information to becoming mentors who help students navigate information environments (Zhang, Li, and Ge).

Limitations

Several limitations should be considered when interpreting these findings. First, the sample size was relatively small, with 15 respondents. Second, participants were recruited through convenience sampling and were primarily drawn from similar educational and socioeconomic backgrounds. Third, the study relied on self-reported survey responses, which may not perfectly reflect actual behavior. Fourth, the recruitment methods used for students may have introduced response bias. Participants were recruited through the researcher's personal network, which makes it more likely that participants will provide socially acceptable answers that may not fully represent the broader student population.

Implication and Future Directions

These limitations limit the generalizability of the results. Most respondents identified as Asian and attended average- to high-resourced schools in high-income communities. Since students in higher-income communities have greater access to resources such as AI, these resources may be more integral to their daily lives. This can skew the results and therefore be inaccurate for the larger population.

Future studies should recruit larger, more diverse samples from different socioeconomic backgrounds and cultural groups. Having the research extended over a longer period would be more valuable for determining students' trust in AI and changes in teachers' roles as AI is increasingly integrated into their lives. In addition, future studies could examine how different levels of educational achievement affect changes in epistemic authority.

Literature Connection

The results of this study are consistent with previous research suggesting that AI is becoming a common educational resource, while teachers still play a role in students' learning processes (Zhu, Zhang, and Wang; Singh et al.). Students frequently use AI for convenience, often for tasks such as homework or brainstorming. This shifts the teacher's role from a provider of information to one that sets ethical and quality standards, which does not necessarily indicate a shift in authority (Zhang, Li, and Ge; Viberg et al.).

Practical

The roles of teachers are evolving rather than disappearing altogether. As AI increasingly provides information more conveniently, teachers become less valuable as sources of information but far more valuable as mentors and guides for individual students (Parker). Rather than competing with AI or viewing it as a threat to their epistemic authority, teachers can guide students to identify misinformation and teach them how to verify information effectively.

The findings also suggest that instruction should focus more on the interpretation and application of knowledge rather than on memorizing facts and information that AI can easily provide. In doing so, teachers will be able to strengthen the students' critical thinking and support deeper learning. Schools can also consider incorporating AI-related classes into their curriculum by teaching how AI works and how to generate effective responses. This will allow students to utilize AI more consciously and responsibly (Harvey, Koenecke, and Kizilcec).

Conclusion

The purpose of this study was to examine whether the increasing use of artificial intelligence has reduced students' trust in teachers as epistemic authority figures and whether AI can functionally replace teachers as trusted sources of knowledge. Specifically, the study investigated whether students now rely more on AI than on teachers when evaluating information and how AI is reshaping the distribution of epistemic authority in education.

Overall, the findings indicate that teachers continue to be viewed as the more credible and trustworthy source of knowledge. Teacher credibility scores were consistently higher than AI

credibility scores across nearly all measures, despite participants frequently using AI. More than half of respondents (53.3%) reported using AI for schoolwork daily, yet this widespread use did not translate into greater trust in AI. Students also preferred teachers over AI when the two sources provided conflicting information, and when AI was shown to be incorrect, respondents overwhelmingly chose to verify the information through a third source rather than continue trusting AI. Furthermore, participants strongly agreed that the greatest value of teachers lies not simply in providing facts, but in offering judgment, guidance, and expertise, with this statement receiving the highest average score in the survey (4.25 out of 5).

These findings directly answer the research questions. Within this sample, AI has not replaced teachers as students' primary epistemic authority. Although AI has become an increasingly common tool for obtaining information, students continue to view teachers as the more reliable source when credibility and judgment are important. Rather than replacing teachers, AI appears to be changing how students evaluate knowledge. Instead of accepting information from a single authority without question, students increasingly compare information from teachers, AI, and other independent sources before deciding what to believe. Epistemic authority, therefore, is becoming more verification-based rather than simply shifting from teachers to AI.

While AI has transformed how students access information and has introduced a powerful new competitor within educational environments, it has not fundamentally displaced teachers' authority. Instead, AI has encouraged students to become more active evaluators of information, requiring teachers to adapt their role from primarily delivering knowledge to guiding students in interpreting and applying it.

As AI becomes increasingly integrated into education, understanding how students determine who and what to trust will become even more important. Preparing students for a future with AI will require schools to cultivate critical thinking, information literacy, and responsible verification practices that ensure safe use of AI. The future of teacher authority may depend less on being the sole source of information and more on helping students become responsible consumers of knowledge.

Works Cited

American Association of University Professors. Artificial Intelligence and Academic Freedom. AAUP, https://www.aaup.org/reports-publications/aaup-policies-reports/topical-reports/artificial-intelligence-and-academic.

"Another AI Side Effect: Erosion of Student-Teacher Trust." The 74 Million, https://www.the74million.org/article/another-ai-side-effect-erosion-of-student-teacher-trust/.

"Artificial Intelligence in the Context of Artificial Intelligence." Journal of Theory and Practice in Education and Innovation, 2025, Zenodo, https://doi.org/10.5281/zenodo.15117783.

Harvey, Emma, Allison Koenecke, and Rene F. Kizilcec. "Don't Forget the Teachers": Towards an Educator-Centered Understanding of Harms from Large Language Models in Education. arXiv, 20 Feb. 2025, doi:10.48550/arXiv.2502.14592.

Klimova, Blanka, and Marcel Pikhart. "Exploring the Effects of Artificial Intelligence on Student and Academic Well-Being in Higher Education: A Mini-Review." Frontiers in Psychology, vol. 16, 2025, article 1498132, https://doi.org/10.3389/fpsyg.2025.1498132.

Li, Chao, Chunyi Zhao, Yuru Wang, and Yi Hu. How Should AI Knowledge Be Governed? Epistemic Authority, Structural Transparency, and the Case for Open Cognitive Graphs. arXiv, 20 Feb. 2026, doi:10.48550/arXiv.2602.16949.

Matjie, Mokgata Alleen, Andani Nethavhani, and Mary Matlakala. "AI and the Digital Divide in Education." Frontiers in Computer Science, vol. 8, 2026, article 1759027, https://doi.org/10.3389/fcomp.2026.1759027.

"Mitigating Hallucinations in LLMs for Community College Classrooms: Strategies to Ensure Reliable and Trustworthy AI-Powered Learning Tools." Faculty Focus, https://www.facultyfocus.com/articles/teaching-with-technology-articles/mitigating-hallucinations-in-llms-for-community-college-classrooms-strategies-to-ensure-reliable-and-trustworthy-ai-powered-learning-tools/.

Parker, Benjamin D. "Considering the Impact of AI on the Professional Status of Teaching." The Clearing House: A Journal of Educational Strategies, Issues and Ideas, vol. 97, no. 6, 2024, pp. 233–236, https://doi.org/10.1080/00098655.2024.2441805.

Singh, Harpreet, Jaspreet Singh, Satwant Singh, Rupinder Singh, Shamim Ibne Shahid, Mohammad Hassan, and Tayarani Najaran. Exploring Student Perception on Gen AI Adoption in Higher Education: A Descriptive Study. arXiv, 29 Mar. 2026, doi:10.48550/arXiv.2603.27777.

Viberg, Olga, Mutlu Cukurova, Yael Feldman-Maggor, Giora Alexandron, Satoshi Shirai, Shizue Kanemune, Berit Wasson, Cathrine Tømte, Daniel Spikol, Marcelo Milrad, and René F. Kizilcec. "What Explains Teachers' Trust in AI in Education across Six Countries?" International Journal of Artificial Intelligence in Education, vol. 35, no. 3, 2025, pp. 1288–1316, Springer, https://doi.org/10.1007/s40593-024-00433-x.

Zhang, Yifan, Yanwen Li, and Shigang Ge. “Repositioning Teacher Authority in the Age of Generative AI: Insights from Chinese University Teachers.” Teaching and Teacher Education, 2026, doi:10.1016/j.tate.2026.105725.

Zhu, Tiffany, Kexun Zhang, and William Yang Wang. Embracing AI in Education: Understanding the Surge in Large Language Model Use by Secondary Students. arXiv, 27 Nov. 2024, doi:10.48550/arXiv.2411.18708.

Criminal Justice: How U.S. Court Systems Process Cases and Make Decisions in Criminal Trials By Grace Zhao

Abstract

Plea bargaining has become the dominant method of resolving criminal cases in the United States, involving over 94% of state and 97% of federal convictions through private negotiation. This paper argues that the dominance of plea bargaining is the product of a self-reinforcing system where pretrial detention, prosecutorial leverage, efficiency-focused institutional incentives, and underfunded public defense converge to limit meaningful choice for low-income defendants. While plea bargaining enables the criminal justice system to function, it does so at significant cost to fairness and legitimacy. Drawing on research from Jeffrey Bellin, Stephanos Bibas, Albert Alschuler, Walter Gonçalves, and the National Association of Criminal Defense Lawyers, this paper demonstrates that plea bargaining operates within a system characterized by unequal bargaining power, informational asymmetries, and coercive pressures. These dynamics disproportionately affect low-income defendants, whose limited access to resources, exposure to pretrial detention, and reliance on overburdened public defense systems constrain meaningful choice. The paper concludes that plea bargaining prioritizes efficiency over justice, producing outcomes shaped more by structural inequality than by factual guilt. Hence, this paper addresses the research question: "What structural factors drive the widespread use of plea bargaining in U.S. criminal cases, and how does it affect fairness for low-income defendants?"

1. Introduction

The American criminal justice system is often imagined as a process centered on trials, where prosecutors and defense attorneys present evidence before an impartial jury. In reality, this vision bears little resemblance to actual practice. The overwhelming majority of criminal cases are resolved through plea bargaining rather than trials. According to Subramanian et al., approximately 97 percent of federal cases and 94 percent of state cases end in guilty pleas rather than jury verdicts. These statistics reveal a fundamental transformation in criminal adjudication.

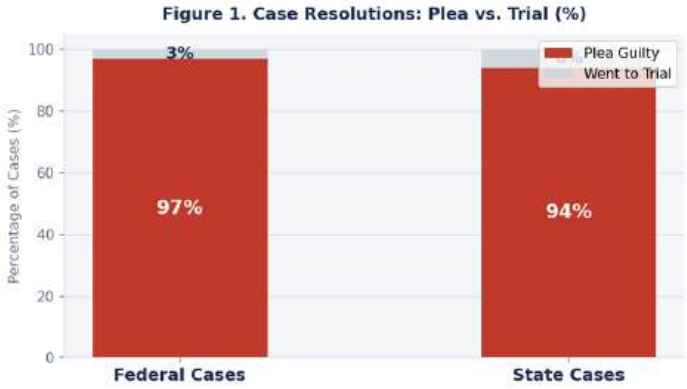


Figure 1. Case Resolutions: Plea vs. Trial (%). The near-total dominance of plea deals, 97% of federal and 94% of state cases, reveals that the constitutional right to trial is exercised by fewer than 1 in 20 defendants. Source: Subramanian et al. (2020).

Plea bargaining has effectively replaced the trial as the primary mechanism of case resolution. Instead of functioning as a public forum for evaluating evidence, the system operates largely through private negotiation. Prosecutors and defense attorneys negotiate outcomes behind closed doors, and defendants must decide whether to accept these agreements under conditions that are often highly constrained. Although trials remain formally available, they function primarily as a bargaining tool rather than a commonly exercised right.

1.1 Structural Factors and Implications on Fairness

This shift raises two central questions: what structural factors have driven the widespread reliance on plea bargaining, and how does this system affect fairness, particularly for low-income defendants? This paper argues that plea bargaining is not simply a neutral or efficient alternative to a trial. It is the product of systemic pressures that reshape decision-making and distribute risks unevenly. While it enables the system to function, it does so by creating conditions that undermine fairness and disproportionately disadvantage those with the fewest resources.

Plea bargaining evolved from a 19th-century rarity into a standard procedure necessitated by urbanization and the rising pressure to process high caseload volumes efficiently. This shift was finalized by judicial endorsements like *Bordenkircher v. Hayes*, which reframed a pragmatic adaptation to systemic caseload strain as a legitimate pillar of the modern legal system.

The high volume of criminal cases is the primary reason plea bargaining dominates the justice system; courts lack the time and resources to conduct full trials for every case. As Subramanian et al. explain, plea bargaining helps prevent severe backlogs and allows the system to operate efficiently. However, this focus on efficiency creates trade-offs, as cases may be resolved quickly rather than carefully, sometimes pressuring defendants to accept deals without thorough examination of the evidence. As a result, plea bargaining highlights the tension between administrative efficiency and the pursuit of fairness and truth in the justice system.

The persistence of plea bargaining is reinforced by institutional incentives that align the interests of key actors. Prosecutors, defense attorneys, and judges all operate within a system that rewards efficiency. Prosecutors are often evaluated based on conviction rates and case throughput. Plea bargaining allows them to secure convictions quickly and reliably, creating an incentive to prioritize negotiated outcomes over trials. Gonçalves demonstrates how this dynamic operates in practice, particularly in high-volume jurisdictions where rapid case processing is essential. Defense attorneys, particularly public defenders, also face incentives that favor plea bargaining. Heavy caseloads limit the time available for each case, making trials difficult to pursue. Accepting plea deals allows attorneys to manage their workload, even if it may not always produce the best outcome for individual clients.

Judges benefit from reduced caseloads, as plea agreements allow courts to maintain orderly dockets. Once a plea agreement is reached, judges rarely reject it, effectively removing a potential check on prosecutorial power. Because they lack full evidentiary context and the agreements are already finalized, judges find it difficult to challenge these deals; rejecting them disrupts both parties without ensuring a fairer result. This normalizes plea bargaining within courtroom practice.

These aligned incentives create a self-reinforcing system. Because every participant has reasons to rely on plea bargaining, reducing its prevalence is difficult. Over time, this reliance becomes embedded in institutional practice, further entrenching the system's logic.

2. Analytical Framework

To analyze how administrative systems alter legal rights, this paper evaluates structural pressures through an institutional lens. The framework focuses on how resource constraints and procedural rules shape individual choices. Examining these systemic factors reveals how efficiency metrics often override constitutional protections. This approach isolates the specific mechanisms that turn standard court procedures into coercive tools.

Prosecutorial discretion is one of the most significant factors shaping plea bargaining. Prosecutors control charging decisions, which determine the range of possible outcomes in a case. This authority gives them substantial leverage in negotiations.

The Supreme Court’s decision in *Bordenkircher v. Hayes* affirmed that prosecutors may threaten harsher charges if a defendant refuses to plead guilty, legitimizing a system in which defendants face increased punishment for exercising their right to a trial. The practice of overcharging further enhances this prosecutorial power. By filing multiple or more severe charges than necessary, prosecutors increase the potential penalties faced by defendants. During plea negotiations, they may subsequently reduce these charges, manufacturing an appearance of leniency while preserving coercive leverage. Gonçalves provides empirical evidence of how these dynamics operate in high-volume federal districts, demonstrating that prosecutors use harsh sentencing threats to secure rapid guilty pleas and drive extremely low trial rates. This demonstrates that plea bargaining is not a neutral negotiation; rather, it is shaped by significant power imbalances that favor the prosecution.

The concept of the trial penalty provides another important explanation for the prevalence of plea bargaining. Defendants who go to trial and are convicted often receive significantly harsher sentences than those who accept plea deals. This disparity creates a strong incentive to plead guilty. The National Association of Criminal Defense Lawyers describes the trial penalty as a system in which defendants are effectively punished for exercising their constitutional right to trial. This transforms the plea decision-making into risk management. Defendants must weigh the certainty of a plea against the possibility of a much harsher outcome at trial. From a rational choice perspective, accepting a plea may appear to be the safest option. However, this framework assumes that defendants have access to accurate information and the ability to evaluate risks effectively. As Bellin argues, these assumptions often do not hold. Defendants frequently make decisions under conditions of uncertainty, limiting their ability to assess outcomes accurately.

3. Asymmetric Information and the Coercive Mechanics of Detention

Although plea bargaining is often described as a rational exchange, this characterization depends on the assumption that defendants have access to accurate information and the ability to evaluate their options. In reality, uncertainty, incomplete information, and structural constraints shape plea decisions. Jeffrey Bellin identifies this as the "uncertainty problem" in plea bargaining: defendants must decide whether to plead guilty without fully knowing the strength of the prosecution's evidence, the likelihood of conviction at trial, or the potential sentence if convicted (Bellin, 2023).

This uncertainty is structural, not incidental. Discovery rules in many jurisdictions allow prosecutors to withhold key evidence until shortly before trial, and tight case timelines mean defendants often must decide before that evidence is disclosed. Stephanos Bibas expands on this by arguing that plea bargaining operates outside the idealized "shadow of trial." In theory, plea negotiations should reflect the expected outcome of a trial. In practice, they are shaped by factors unrelated to legal merits, including attorney workload, psychological pressure, and unequal access to resources (Bibas). As a result, plea decisions often reflect systemic distortions rather than accurate assessments of guilt or innocence. These information gaps disproportionately impact low-income defendants. Without access to private investigators, expert witnesses, or extensive legal consultation, they are less able to evaluate the strength of the case against them. This creates a situation where defendants make decisions under conditions of partial knowledge, increasing the likelihood of error and coercion.

Public defenders, who represent most low-income defendants, often face overwhelming caseloads that limit the time available for each case. This restricts their ability to investigate, prepare for trial, or negotiate effectively. As a result, plea agreements frequently become a practical necessity rather than a strategic choice, even when trial may be in the defendant's best interest.

Furthermore, there is a fundamental income inequality to the logic of plea bargaining. For low-income defendants, the advice they receive may be influenced by systemic pressures rather than purely by legal considerations. The result is a system in which representation is formally

guaranteed but substantively unequal. Wealthier defendants can hire private attorneys, access expert resources, and devote significant time to their cases. Low-income defendants, by contrast, often receive limited guidance, making it more difficult to make informed decisions. Ultimately, two categorically different demographics face different conditions for plea bargaining.

Pretrial detention is one of the most powerful and unequal forces shaping plea bargaining outcomes. Defendants who cannot afford bail may remain incarcerated while awaiting trial, sometimes for extended periods. This creates immediate and severe consequences. Individuals held in pretrial detention may lose their jobs, housing, and social support networks. They also experience the psychological stress of incarceration, including uncertainty and isolation. Under these conditions, the prospect of a plea deal that offers release becomes highly attractive. Subramanian et al. find that defendants held in pretrial detention are significantly more likely to plead guilty than those released before trial.

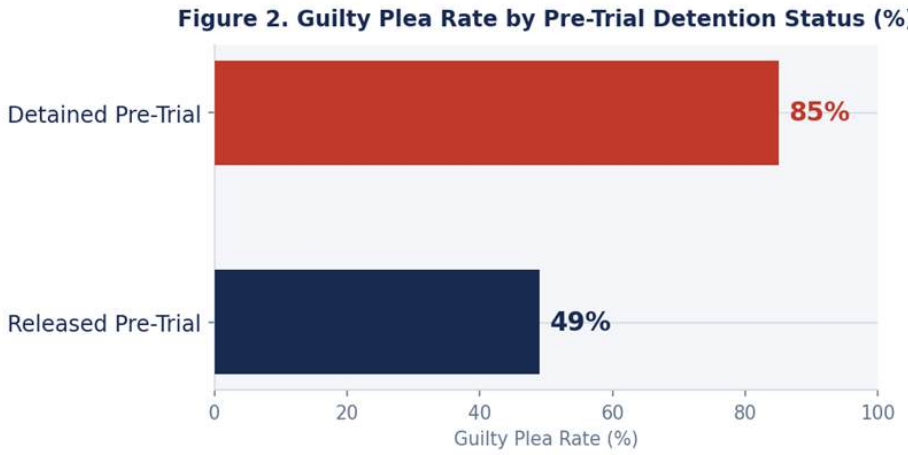


Figure 2. Guilty Plea Rate by Pre-Trial Detention Status (%). Detained defendants plead guilty at a rate of 85% compared to 49% for those released before trial — a 36-point gap driven not by guilt, but by the coercive conditions of incarceration. Source: Subramanian et al. (2020).

These defendants are also more likely to receive harsher sentences, suggesting that pretrial detention does not merely influence decisions but actively shapes outcomes This dynamic raises important questions about voluntariness. A decision made under threat of continued incarceration cannot be considered fully voluntary. Instead, it reflects a constrained choice shaped by external pressure.

The coercive effect of pretrial detention is particularly significant because it is tied directly to economic status. Defendants who can afford bail are able to prepare for trial while maintaining their daily lives. Those who cannot are placed under pressure to resolve their cases quickly. This creates a two-tiered system in which wealth influences both process and outcome.

4. Systemic Outcomes: Wrongful Convictions and Long-Term Inequality

One of the most serious consequences of plea bargaining is the risk of innocent individuals pleading guilty. While the system assumes that guilty pleas reflect actual guilt, research suggests that this is not always the case. The Innocence Project, for example, has documented cases in which defendants pleaded guilty to crimes they did not commit; not because they were confused, but because the trial penalty made even a false admission safer than the risk of a harsher wrongful conviction.

The combination of uncertainty, risk, and coercion can lead defendants to accept plea deals even when they have viable defenses. The trial penalty plays a critical role here. Faced with the possibility of a significantly harsher sentence if convicted at trial, defendants frequently choose the certainty of a plea, even if it requires falsely admitting guilt. The National Association of Criminal Defense Lawyers highlights this issue, noting that the trial penalty effectively eliminates the right to trial. When the cost of going to trial is prohibitively high, defendants are incentivized to avoid it altogether.

Figure 3. Sentencing Gap: Plea vs. Trial Conviction by Offense Category (illustrative averages, months). Defendants convicted at trial routinely receive sentences 2.5 to 3 times longer than those who plead guilty for equivalent offenses. This gap functions as a structural penalty for exercising the constitutional right to trial. Source: NACDL Trial Penalty Report (2018).

Empirical studies support this concern, identifying numerous cases where innocent defendants pleaded guilty solely to avoid the risk of severe punishment. These cases challenge the assumption that plea bargaining produces reliable outcomes. This problem acutely impacts low-income defendants. Limited access to resources makes it more difficult to challenge evidence, increasing the likelihood that they will accept plea deals. Consequently, the risk of wrongful conviction is not evenly distributed; it disproportionately burdens those with fewer resources.

Furthermore, the collateral consequences of plea bargaining extend long after court proceedings conclude. Convictions block access to jobs and housing, effectively trapping low-income defendants in poverty. By accelerating sentencing and prioritizing quick deals, this

system serves as a primary driver of mass incarceration, transforming brief negotiations into lifelong disadvantages. Ultimately, plea bargaining reinforces systemic inequality well beyond the resolution of a single legal case.

Although the justice system frames plea bargaining as a voluntary exchange, structural inequality makes it inherently coercive. Low-income defendants face immense pressure from pretrial detention and limited resources, forcing them into deals. While efficient for court administration, the system is fundamentally biased. It reflects systemic power imbalances rather than free choice, disproportionately harming those with the least agency.

5. The Counterargument: Efficiency, Flexibility, and Systemic Utility

Despite its flaws, plea bargaining has strong defenders. Many scholars and practitioners argue that it is a necessary and even beneficial component of the criminal justice system. These arguments center on efficiency, flexibility, and potential benefits for defendants. While these benefits are tangible, they primarily accrue to the prosecution and the judicial system itself, whereas the costs of coerced admissions and wrongful convictions fall disproportionately on economically marginalized defendants.

A primary defense is that plea bargaining is essential for systemic functionality. Without it, courts would be overwhelmed by the volume of cases. Trials are resource-intensive, requiring judges, juries, attorneys, and extensive preparation. Subramanian et al. emphasize that eliminating plea bargaining without reducing caseloads would likely trigger severe delays and systemic breakdown. From this perspective, plea bargaining is not optional; it is essential.

Supporters also argue that plea bargaining can benefit defendants by offering reduced sentences. By accepting a plea deal, defendants may avoid the risk of harsher punishment at trial. This can be particularly important in cases where the evidence is strong. Plea bargaining provides a degree of predictability, allowing defendants to make decisions based on known outcomes rather than uncertain trial results.

Another argument is that plea bargaining introduces flexibility into the system. Prosecutors can tailor charges and sentences to reflect the specifics of a case, potentially leading to more individualized outcomes. In some cases, plea agreements may allow defendants to avoid the most severe consequences, such as mandatory minimum sentences.

Finally, some scholars argue that plea bargaining can spare victims the burden of testifying at trial. Trials can be emotionally difficult and time-consuming, and negotiated resolutions may provide closure more quickly.

These arguments highlight real benefits of plea bargaining: increase efficiency, reduce uncertainty, and opportunity for negotiated outcomes. However, these benefits weaken significantly when examined through the lens of structural inequality.

The efficiency argument is the strongest but also the most problematic. It assumes that the primary goal of the justice system is to process cases quickly. However, the core purpose of the criminal justice system is to determine guilt and ensure fair outcomes. When efficiency becomes the dominant priority, it reshapes the system's values. While cases are resolved quickly,

the incentive structure of plea bargaining rewards speed over accuracy, rendering actual guilt secondary in a system driven by caseload management.

The claim that plea bargaining benefits defendants by reducing sentences also requires scrutiny. While it is true that plea deals often involve lower penalties than trial convictions, this comparison is misleading. The existence of the trial penalty inflates the cost of going to trial, making plea deals appear more favorable. In other words, the "benefit" of a reduced sentence is manufactured by the threat of a much harsher one.

The flexibility argument similarly overlooks power imbalances. Prosecutors wield significant discretion in shaping plea offers, while defendants have little leverage to negotiate. This asymmetry means that flexibility often operates in favor of the prosecution rather than producing truly individualized justice.

While plea bargaining offers efficiency and flexibility, these benefits do not outweigh the structural inequalities it creates. The system pressures defendants to waive their Sixth Amendment right to a trial because going to trial often carries major risks, including harsher sentences. Supreme Court cases such as *Missouri v. Frye* and *Lafler v. Cooper* recognized plea bargaining as a critical stage of the criminal process requiring effective legal counsel. However, Bordenkircher v. Hayes allowed prosecutors to threaten harsher charges during negotiations, reinforcing pressure on defendants to avoid trial. As a result, the constitutional right to trial exists formally but is functionally compromised.

6. Policy Interventions and Constitutional Safeguards

Implementing targeted reforms could significantly mitigate the harms caused by plea bargaining. Increasing funding for public defenders would improve legal representation and reduce informational inequalities. Reforming cash bail would lessen the pressure on low-income defendants to accept plea deals simply to leave jail. Reducing the sentencing gap between plea deals and trial convictions would make trials a more realistic option. Greater transparency and judicial oversight in plea negotiations could also limit coercion and prosecutorial abuse. Broader reforms, such as decriminalizing certain offenses and expanding diversion programs, could lower caseloads and decrease reliance on plea bargaining altogether. Finally, enhanced data collection would equip researchers and policymakers to better identify inequalities and evaluate reforms.

7. Remaining Gaps and Future Directions

While current scholarship thoroughly documents the immediate pressures of plea negotiations, several operational blind spots persist. Future academic literature must gather empirical data on how emerging digital discovery timelines alter defense preparation. Researchers should also investigate how specialized diversion programs intersect with traditional negotiated outcomes across varying state jurisdictions. Examining these elements will clarify the evolving relationship between administrative speed and equitable legal results.

Overall, plea bargaining reflects a deeper conflict within the criminal justice system between efficiency and fairness. Although it helps courts manage overwhelming caseloads, it

often produces unequal outcomes that disproportionately harm low-income defendants. The system prioritizes administrative efficiency over equitable justice, making plea bargaining less a voluntary choice and more a response to structural pressure.

This paper has argued that the costs of this system fall disproportionately on low-income defendants. Structural inequalities such as pretrial detention, limited access to effective counsel, and informational asymmetries constrain decision-making and increase coercion. As a result, plea bargaining often produces outcomes that reflect inequality rather than justice. The evidence from scholars such as Bellin, Bibas, Alschuler, Gonçalves, and Subramanian demonstrates that plea bargaining is not simply an efficient alternative to trial. It is a system shaped by power imbalances and structural pressures that undermine fairness.

Ultimately, the dominance of plea bargaining reveals a fundamental imbalance between efficiency and justice. While efficiency is necessary, it cannot justify a system that systematically disadvantages the most vulnerable. A criminal justice system that resolves nearly all cases through negotiation must confront the question of whether it is delivering justice or merely managing risk. Without meaningful reform, plea bargaining will continue to function as a necessary but deeply flawed mechanism, one that sustains the system while perpetuating inequality.

Works Cited

Alschuler, A W. “Changing Plea Bargaining Debate.” National Institute of Justice, nij.ojp.gov/library/publications/changing-plea-bargaining-debate. Accessed 22 Apr. 2026.

Bellin, Jeffrey. Plea Bargaining’s Uncertainty Problem Plea Bargaining’s Uncertainty Problem. 2023.

Bibas, Stephanos. “Plea Bargaining Outside the Shadow of Trial.” Harvard Law Review, vol. 117.

Gonçalves, Walter. “HOW MUCH TIME AM I LOOKING AT?”: PLEA BARGAINS, HARSH PUNISHMENTS, and LOW TRIAL RATES in SOUTHWEST BORDER DISTRICTS.

Subramanian, Ram, et al. In the Shadows: A Review of the Research on Plea Bargaining. 2020.

“The Trial Penalty: The Sixth Amendment Right to Trial on the Verge of Extinction and How to Save It.” NACDL, www.nacdl.org/Document/TrialPenaltySixthAmendmentRighttoTrialNearExtinct. Accessed 22 Apr. 2026.

Integration of Psychological Profiling and Rehabilitation Programs to Combat Criminal Recidivism By Rithvik Shabari

Abstract

Despite decades of punitive-focused policy, criminal recidivism remains persistently high, and traditional monitoring and punishment-based approaches often fail to address the psychological, neurological, and substance-related factors that drive reoffending. Growing evidence suggests that psychological profiling, assessing offenders' cognitive functioning, trauma histories, and substance-use patterns, can inform more effective, individualized rehabilitation strategies. However, little research has examined how professionals implement psychological profiling in practice or perceive its impact on recidivism and rehabilitation. This study investigates professional perspectives on the use and effectiveness of psychological profiling within criminal intervention programs.

Semi-structured interviews were conducted with 8 professional psychologists (forensic, criminal, and clinical) with expertise in offender assessment and rehabilitation. Interviews lasting 20 to 30 minutes were audio-recorded, transcribed, and de-identified, then examined using content analysis which is a systematic research method used to analyze qualitative data (like text, audio, or video) by categorizing, quantifying, and interpreting specific words, themes, or concepts. Participant responses were coded along two dimensions: level of use of psychological profiling and perceived effectiveness in reducing recidivism.

Participants who reported greater integration of psychological profiling into intervention decisions also reported higher perceived effectiveness, forming a consistent positive association between use and effectiveness across the sample. Most participants identified profiling as valuable for recognizing treatable factors such as trauma, substance use, and cognitive impairment, though several also noted inconsistent application across institutions and a risk of subjective bias.

Psychological profiling appears to meaningfully support rehabilitation when applied consistently and accurately, but is not sufficient on its own, as sustained reductions in recidivism likely require pairing profiling with ongoing therapeutic and reentry support. Future research should incorporate larger samples and objective recidivism data to validate these professional perceptions.

Keywords: psychological profiling, criminal recidivism, rehabilitation programs, Risk-Need-Responsivity model, qualitative content analysis, criminal justice reform

Introduction

There is a problem with the understanding of underlying psychological factors that may influence criminal behavior. Despite there being societal norms, criminal behavior persists and is insufficiently understood. According to Ghandnoosh and Pearce (2025) from "The Sentencing Project," "Between 1972 and 2009, the number of people imprisoned grew nearly 700%, while

crime rates declined dramatically after peaking in 1991." Though the crime rate percentage decreases as population increases, which is because there are only a set few criminals among the population, this problem has negatively affected the effectiveness of interventions against crime because we can't understand what could be effective. Perhaps a study which investigates industry professionals' perspectives on why criminals do what they do and how programs to reduce recidivism are effective through content analysis can remedy this situation.

The current criminal justice system faces a persistent challenge because offenders with both substance-use disorders and neurological disabilities and antisocial thought patterns and multiple psychiatric disorders show high rates of reoffending. The recidivism rates among substance-involved offenders reach 60 to 70 percent according to multiple studies while estimates of TBI prevalence among offenders range from 30 percent in juveniles to above 60 percent in adults (Farrer et al., 2013; Shiroma et al., 2010). The results of this study demonstrate how traditional punishment systems can be inconsistent in practice and need to develop new approaches which include advanced psychological assessment and neurocognitive profiling. Recent studies have examined how cognitive distortions and trauma histories and moral reasoning abilities and mental health problems shape the criminal behavior of offenders and their success in rehabilitation. The central question guiding this review: To what extent can the integration of psychological profiling into programs of intervention reduce recidivism and support sustained rehabilitation according to the industry professionals?

This study is grounded in the Risk-Need-Responsivity (RNR) model (Andrews & Bonta, 2010), which holds that effective rehabilitation begins with accurately identifying an offender's criminogenic needs through psychological assessment. Because psychological profiling is applied differently across jurisdictions and institutions, this study is scoped to professionals' first-hand perspectives on its practical use and effectiveness, rather than offering a full statistical evaluation of recidivism outcomes across programs.

Lit Review

Substance Use and Psychological Predictors of Recidivism

The majority of current literature identifies substance-use disorders as one of the strongest predictors of recidivism. The research findings show multiple risky factors that include drug type together with injection behavior and psychiatric coexisting conditions and structural vulnerabilities. Håkansson and Berglund (2012) conducted a prospective study of more than 4,000 Swedish prisoners and found that 69% of substance-using offenders recidivated; the highest risk was noted among amphetamine and heroin users who lost control over their actions. Karlsson and Håkansson (2022) found that 68% of participants had recidivated while showing how there were also a combination of disadvantageous factors from their youth and homelessness and psychiatric issues and past violent or property offenses which resulted in adverse effects. The study showed that Mannerfelt and Håkansson (2018) found women

displayed more severe psychiatric symptoms yet their recidivism rate remained lower than the male rate which showed a 71% return to crime.

A consistent pattern is seen throughout these studies: substance-use disorders operate as both behavioral risks and indicators of psychological problems, as well as neurological disorders and even environmental instability. Addiction, when left unaddressed, intersects with cognitive deficits, trauma, and mental health disorders and creates risk factors for reoffending. This complexity means that substance-related recidivism cannot be reduced to behavioral failure alone, but is better understood as the product of interconnected psychological and neurological vulnerabilities. The literature demonstrates that intervention systems which depend on basic behavioral monitoring and punishment methods fail to recognize the psychological factors that lead to relapse.

Neurological & Cognitive Predictors: TBI, Bias, Moral Disengagement

The second primary division of literature research investigates how neurological and cognitive factors shape criminal conduct through two specific elements which include TBI occurrence and cognitive distortion impact. Farrer, Frost, and Hedges (2013) determined that about 30 percent of juvenile offenders had suffered from at least one TBI while the researchers showed a 3.37 times greater likelihood of reporting brain injuries than non-offenders. Shiroma, Ferguson, and Pickelsimer (2010) similarly found that more than 60 percent of incarcerated adults had sustained a TBI at some point. The research demonstrates that TBI leads to three specific brain function issues which cause people to engage in criminal activities through their damaged capacity to control their impulses and manage their emotions and understand right from wrong.

Cognitive-processing deficits also extend into the legal system itself risking judicial bias. Guthrie, Rachlinski, and Wistrich (2001) demonstrated that judges, even federal ones, are vulnerable to anchoring and framing biases which may distort their sentencing decisions. Kang et al. (2012) extended this by showing that judicial decisions can be influenced by implicit bias but that such biases can be reduced with empathy-training interventions. The Bandura (1999) model of moral disengagement and Glenn et al. (2009) research on psychopathic moral deficits provide evidence that offenders use cognitive justification to validate their criminal activities while experiencing limited emotional reactions to ethical conflicts.

The process of psychological profiling produces two major findings which show that multiple offenders experience neurological conditions which affect their ability to make decisions and that both offenders and judges display cognitive biases during their respective processes. The application of cognitive-behavioral techniques through measurement of cognitive-behavioral patterns together with impulse-control testing and trauma and TBI profiling will produce better results than traditional treatment approaches which use standardized methods. The existing research provides a basis for using neuropsychological evidence to create offender treatment programs while it enhances our understanding of offender profiles through better prediction and description methods.

Rehabilitation Treatment Models and the Role of Cognitive Profiling

A growing body of research focuses on intervention strategies, especially cognitive-behavioral approaches, and their impact on recidivism. Cognitive-behavioral programs appear among the more effective rehabilitation treatments across multiple international research studies evaluating different treatment methods. One study conducted by Friendship et al. (2003) showed that CBT successfully decreased reconviction rates by 11-14 percent for medium-risk male prisoners in UK correctional facilities. Henning and Frueh (1996) reported even bigger differences in the U.S. with 50 percent recidivism among CBT participants compared to 70.8 percent in the control group. The research demonstrates strong evidence because McGuire (2008) discovered that long-term research showed a 26 percent decrease in reoffending over five years.

Mindfulness-based interventions demonstrate exceptional potential for success. The research of Samuelson et al. (2007) established that people who received mindfulness training developed diminished impulsive behavior and aggressive tendencies which typically occur in individuals with cognitive disabilities. The research results provide backing for intervention models that focus on psychological treatment to achieve neural and emotional control.

The research is hoping to explore support requirements for people who are reentering society after their time in prison which goes beyond the boundaries of CBT. Beaudry, Yu, Perry, and Fazel (2021) conducted a systematic review and meta-analysis of randomized controlled trials, finding that psychological interventions delivered in prison lead to a moderate yet meaningful decrease in recidivism rates after release.

The meta-analytic research gives strong evidence that treatment programs which follow psychological principles need assessment and cognitive restructuring, right now, individual responsivity assessment present the highest likelihood of achieving successful outcomes (e.g., Gendreau et al., 1996; Lipsey, 2009; Lösel & Schmucker, 2005). The studies support the theoretical frameworks which include the RNR (Risk Need Responsitivity) model (Andrews & Bonta, 2010) and general strain theory (Agnew, 1992) which both explains criminal behavior through emotional and cognitive processes.

The collection of studies shows that psychological profiling works best when it provides information for creating personalized treatment programs which connect offender traits, including cognitive deficits and trauma history and neurological impairment and substance-use patterns, to specific treatment methods.

Evaluation, Gaps and Implications for the RQ

Research from earlier times demonstrates that psychological factors including substance abuse and trauma and impulsivity and cognitive problems create a strong connection to criminal behavior and repeat criminal activity. The research demonstrates that intervention programs which combine psychological assessments with cognitive-based treatment methods provide better results than programs which only use punishment. Research demonstrates that psychological profiling functions as a critical element which helps decrease recidivism rates

while it facilitates rehabilitation efforts. The research methods in existing studies depend on quantitative techniques which measure recidivism through extended time periods by monitoring reconviction and re-arrest rates. The research evaluates the effectiveness of psychological interventions through statistical measurement of treatment outcomes. The professional use of psychological profiling in criminal justice systems remains unexplained through this method which demonstrates its effectiveness. Research demonstrates that psychological profiling helps decrease recidivism rates yet there exists minimal research about how professionals implement psychological profiling in their work and how they perceive its impact on patient recovery. The current research explores professional perspectives about psychological profiling which criminal intervention programs use to assess its effect on recidivism and ongoing rehabilitation. The research examines the practical application of profiling through its actual implementation rather than studying specific measurement results. The research establishes its contribution through semi-structured interviews which it conducts with professional psychologists before using content analysis to study their responses. The method enables professionals to demonstrate the impact of psychological profiling on their rehabilitation work through its application in actual environments.

Summary of Literature Review

The literature generally shows that when psychological profiling is used to inform tailored evidence-based interventions, it significantly affects recidivism and forms a very sound basis for long-term rehabilitation. Further research is needed to prove these effects through combined profiling models and extended follow-up periods and demographic analysis.

Methods

Research Design

This research uses qualitative methods through interviews that will be analyzed through content analysis. The study aims to investigate how professionals view psychological profiling in criminal intervention programs and its impact on the change in recidivism rates and rehabilitation success. A qualitative design was chosen because the research question concerns how professionals experience and interpret profiling in practice, which needs to be studied through their real-world application instead of statistical or numerical data.

The design derives from the Risk-Need-Responsivity RNR model which Andrews and Bonta created as a fundamental correctional psychology framework. The authors assert that successful rehabilitation programs must first identify criminal requirements through psychological tests before they can create effective treatment programs. The RNR model receives empirical backing from professional assessments which experts use to judge treatment results while the model needs controlled studies to prove its complete value. The study continues the existing research tradition by investigating how professionals think about offender assessment methods that use profiling to determine their impact on offender results. The research

links two fields of knowledge: criminology and forensic psychology which use professional expertise to assess how theoretical models work in real-world situations. Existing research demonstrates that complex psychological and contextual elements shape how offenders behave and achieve rehabilitation success which is studied through qualitative research methods that enable detailed investigation.

Variables

The study uses qualitative research methods to investigate two primary concepts. The implementation and use of psychological profiling in criminal intervention programs serves as the data for this study. The study measures perceived effects of rehabilitation programs on offender recidivism and sustained rehabilitation as the effects we are measuring. The research question establishes direct links to these concepts which determine both the interview questions and the coding process. The study investigates professional judgment through its examination of perceived effects because existing outcome-based research lacks this component.

Method

Interviews are conducted with expert professional psychologists (forensic, criminal, and clinical psychologists) who specialize in psychological profiling and criminal rehabilitation which they used to perform content analysis of their interview responses. The interviews enable participants to describe the practical application of psychological profiling in actual criminal intervention contexts while they assess its efficiency and its boundaries and its moral issues. Content analysis lets determine the identification of recurring themes and patterns across participants' responses which directly addresses the research question about how profiling affects recidivism and rehabilitation.

Subjects

The study examines adult professional psychologists (forensic, criminal, and clinical psychologists) who possess expertise in psychological profiling and criminal rehabilitation programs. All study participants meet the requirement of being 18 years or older and they must have professional experience in offender assessment or intervention methods.

The research question gets addressed through these subjects because they participate in offender assessment and rehabilitation program development and execution. Their practical work experience shows how psychological profiling affects real-world criminal outcomes.

Instruments

The primary research instrument is a researcher-created semi-structured interview protocol which includes open-ended questions about psychological profiling and recidivism and rehabilitation. The interview questions function to help participants think about their work experiences while they need to provide complete explanations.

The open-ended nature of the instrument gives participants the ability to share examples which show their detailed perspectives and produce high-quality qualitative data that is needed to assess the success and shortcomings and ethical aspects of psychological profiling used in criminal intervention programs.

Data Analysis

Interview transcripts were examined using content analysis to identify recurring themes related to the use and perceived effectiveness of psychological profiling. Each transcript was coded along two dimensions: level of use of psychological profiling (high, moderate, or low) and perceived effectiveness in supporting rehabilitation and reducing recidivism (high, moderate, or low). Operational definitions for each category were developed based on patterns that emerged across participant responses (see Results). Coded responses were then plotted to visualize the relationship between the two dimensions across participants, allowing patterns and inconsistencies across professionals to be systematically compared while preserving the qualitative nature of the data.

Ethical Considerations

This study received approval from the researcher's district Institutional Review Board (IRB) prior to recruitment. All participants provided informed consent after being given a written description of the study's objectives, procedures, and confidentiality protections. Participation was voluntary, and participants could withdraw at any time. To protect participant identities, audio recordings were transcribed into written documents stripped of identifying information, and each participant was assigned a unique identifier (e.g., P1, P2, P3, Pn) used throughout data analysis and reporting. All audio recordings were permanently deleted after transcription was complete.

Procedure

Data collection follows a series of established steps. First, IRB approval is obtained and the consent form is finalized (see Ethical Considerations). Next, 6–10 adult professionals are recruited through networking, social media platforms, and the AP Capstone community and provided with the consent form describing the study's objectives and procedures.

Interviews are conducted at scheduled times and last 20 to 30 minutes. With participant approval, interviews are audio-recorded and later transcribed into a written document stripped of identifying information (see Ethical Considerations). The researchers then apply coding to the interview transcripts, using content analysis to identify recurring themes related to psychological profiling, recidivism, and rehabilitation, and interpret the results in relation to existing literature.

Results

To organize qualitative interview responses into a visual model, participant answers were coded along two dimensions: level of use of psychological profiling and perceived effectiveness.

These categories were defined based on patterns in participant responses. These are the operational definitions.

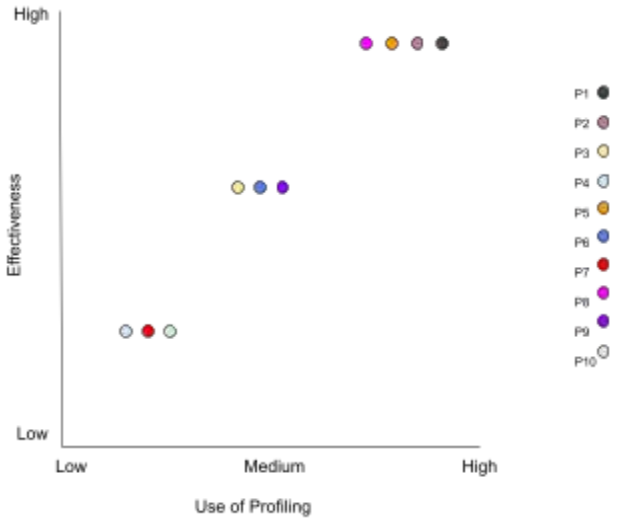
X-axis: Level of Use of Psychological Profiling

- High Use: The participant described psychological profiling as being consistently integrated into intervention decisions, such as treatment planning, offender assessment, and rehabilitation strategies.
- Moderate Use: The participant indicated that profiling is used occasionally or at specific stages (e.g., intake), but not consistently throughout the intervention process.
- Low Use: The participant described profiling as being rarely used or not meaningfully applied in guiding intervention decisions.

Y-axis: Perceived Effectiveness

- High Effectiveness: The participant stated that psychological profiling clearly improves rehabilitation outcomes and/or reduces recidivism, especially when combined with structured intervention programs.
- Moderate Effectiveness: The participant described profiling as somewhat helpful, but emphasized that its impact depends on factors such as implementation, consistency, or additional support systems.
- Low Effectiveness: The participant suggested that profiling has limited impact or is not a major factor in influencing recidivism or long-term rehabilitation.

Participants were placed on the scatter plot based on how their responses aligned with these definitions. For example, participants who described profiling as consistently used and strongly linked to improved outcomes were categorized as high use and high effectiveness, while those who emphasized inconsistent use or limited impact were placed in lower categories.



This coding process allows qualitative data to be systematically organized and visually compared, improving clarity while maintaining alignment with the study's qualitative design.

To illustrate how these categories align with participants' actual responses, representative examples are presented below for one participant in each pattern observed in the data.

One participant (P5), whose responses reflected high use and high perceived effectiveness, described profiling as directly embedded in treatment decisions: "In my work, profiling has mainly been integrated into rehabilitation and case management. I have observed it being used to determine whether an offender may need substance treatment, trauma therapy, anger management, cognitive behavioral intervention, or more intensive supervision." This participant also linked profiling directly to reduced reoffending, noting, "It can significantly affect reoffending risk if it leads to individualized services. Many offenders repeat behavior because their actual psychological and environmental triggers were never addressed in a meaningful way."

Another participant (P4), whose responses reflected a more moderate pattern of use and effectiveness, offered a more conditional view of profiling's impact: "When used correctly, profiling can help reduce recidivism by improving case planning and intervention fit. When used poorly, it can simply categorize people without changing the treatment they receive." This participant illustrated the point with a specific case in which assessment findings were not acted on: "I have seen cases where profiling clearly highlighted severe impulsivity and substance dependence, but the offender was still placed in a generic program. In those situations, the assessment did not translate into reduced recidivism because intervention was not individualized."

A third participant (P8), whose responses reflected comparatively lower use and lower perceived effectiveness relative to the rest of the sample, emphasized the limits of profiling when structural barriers were present: "Profiling tends to reduce recidivism most when the offender's risk factors are dynamic and treatable, such as substance misuse or cognitive distortions. It tends to fail when structural barriers like homelessness, unemployment, or lack of services overwhelm the intervention." This participant cautioned against overstating profiling's role, adding, "Profiling is useful, but it should not be treated as the answer to every criminal justice problem."

Discussion

The findings of this research can be helpful in understanding the application of psychological profiling in criminal intervention programs and its importance in lowering recidivism rates and ensuring effective rehabilitation. From these findings, it can be concluded that although psychological profiling is considered useful for reducing recidivism and facilitating effective rehabilitation processes, the success of profiling relies greatly on the accuracy and consistency of the process.

There is a visible connection between the participants' answers in relation to the use and the effectiveness of the process of psychological profiling. The findings indicate that those participants who answered positively about their level of use of the technique also showed high levels of effectiveness of the process of profiling. This connection can be seen in the scatter plot graph, where there is a pattern of increasing the effectiveness of the process of profiling with increasing use. In addition, the findings coincide with previous research and support the RNR approach to profiling, which suggests that accurate psychological assessment is associated with better results.

This outcome further confirms past studies about individualized treatment. In each case, participants agreed that psychological profiling is critical in recognizing significant aspects, including trauma, substance use, and cognitive problems, which can be treated. This supports previous literature that indicates that rehabilitation facilities become more successful by considering criminogenic requirements and tailoring their services based on individual cases. Consequently, the information shows that profiling plays an important role in achieving positive results through customized interventions.

At the same time, the study uncovers some weaknesses in terms of psychological profiling as a tool. Specifically, several participants argued that profiling itself does not guarantee lasting success because rehabilitation facilities need other elements like ongoing therapy, reentry assistance, and resource availability following the release. This result resonates with previous academic articles that demonstrate that although intervention programs lower recidivism rates temporarily, their long-term efficacy is dependent on systemic assistance.

In addition, one of the crucial findings is the fact that profiling is inconsistent across various institutions. It has been discovered that profiling is applied in an inconsistent way since it might be used only at the stage of admission and not incorporated further during treatment. The inconsistency in applying profiling is one of the possible reasons why quantitative studies reveal

inconsistencies between program outcomes. As such, by examining the professionals' opinions, the paper attempts to fill this gap in the literature.

At the same time, the issue of subjective biasing in profiling should also be discussed. It has been revealed by participants that assessments may involve the use of individual judgment or specific institutional factors that may lead to biases and different outcomes. These findings corroborate previous literature on the topic of cognitive bias within the criminal justice system.

Implications

Several conclusions can be drawn from the results obtained during the course of this investigation. To begin with, it appears that there is an opportunity for enhancing the effectiveness of psychological profiling in terms of its consistency and integration into the program itself. A more comprehensive profiling approach may help make programs more effective.

Secondly, it was found that the application of psychological profiling needs to be complemented by the establishment of long-term assistance programs, including mental health care and social reintegration programs. This finding implies that it is necessary not only to assess individuals' psychological condition but also to assist in their further rehabilitation.

Lastly, it is evident that the inclusion of expert views can contribute greatly to the evaluation of crime intervention programs.

Limitations

There are some major limitations associated with this research that require attention. To begin with, the number of participants in this study was relatively low, thus, making generalization of findings difficult. Furthermore, since the study measures self-reported perceptions, respondents' answers could be biased, being affected by their individual experiences rather than objective effects.

What is more important, it should be noted that no information regarding the actual rates of recidivism were collected, so the study cannot identify causality but can only discuss the perceived effect of psychological profiling on the reduction of recidivism rates. Finally, there might be some differences in applying psychological profiling among different organizations.

Closing Thoughts

The present study explored the role of psychological profiling as an instrument to influence recidivism and ensure sustainable rehabilitation in the context of criminal intervention programs. The findings suggest that psychological profiling is generally considered an effective way to enhance the quality of interventions and decrease the levels of reoffending among participants since it enables professionals to identify underlying factors that need to be addressed through treatment. At the same time, psychological profiling does not have an effect on its own and requires implementation alongside other rehabilitation programs.

Thus, in order to reduce recidivism effectively and support the process of sustainable rehabilitation, psychological profiling needs to be complemented with other interventions, including therapy sessions and other forms of assistance. Moreover, in order to benefit from psychological profiling, the approach must be consistently implemented and free from bias. The assessment process for psychological profiling needs to include individual evaluations which determine the severity of addiction and psychiatric coexisting conditions, and cognitive impairment to create effective recidivism reduction programs. Overall, the results show that psychological profiling is important and helpful but still has certain limitations.

This paper makes a contribution to the current body of knowledge since it focuses on the opinions of professionals and explains how psychological profiling can be implemented successfully in practice. Such a focus was chosen because of the lack of studies that addressed this issue.

Further studies could be based on the results obtained from this research; that is, conducting the research using larger samples and samples of different professionals. Another way through which further studies can be conducted is through adopting mixed methods where qualitative and quantitative research methodologies could be used simultaneously. In addition, further research should investigate the outcomes of rehabilitation, not just recidivism alone.

Acknowledgments

The author wishes to thank the professionals who generously volunteered their time to be interviewed for this study, sharing their firsthand expertise on psychological profiling and offender rehabilitation. The author also thanks their advisor for their guidance, mentorship, and support throughout the research process, from study design through analysis and writing. In accordance with the confidentiality protections established for this study, the names of the interview participants and the advisor have been withheld.

Works Cited

Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. Criminology, 30(1), 47–87.

Andrews, D. A., & Bonta, J. (2010). The psychology of criminal conduct (5th ed.). Anderson Publishing/LexisNexis.

Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. Personality and Social Psychology Review, 3(3), 193–209.

Beaudry, G., Yu, R., Perry, A. E., & Fazel, S. (2021). Effectiveness of psychological interventions in prison to reduce recidivism: A systematic review and meta-analysis of randomised controlled trials. The Lancet Psychiatry, 8(9), 759–773. https://doi.org/10.1016/S2215-0366(21)00170-X

Farrer, T. J., Frost, R. B., & Hedges, D. W. (2013). Prevalence of traumatic brain injury in juvenile offenders: A meta-analysis. Child Neuropsychology, 19(3), 225–234. https://doi.org/10.1080/09297049.2011.647901

Friendship, C., Blud, L., Erikson, M., Travers, R., & Thornton, D. (2003). Cognitive-behavioural treatment for imprisoned offenders: An evaluation of HM Prison Service's cognitive skills programmes. Legal and Criminological Psychology, 8(1), 103–114.

Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult offender recidivism: What works! Criminology, 34(4), 575–608.

Ghandnoosh, N., & Pearce, S. (2025, November 12). America's incarceration crossroads: Reversing progress amid record-low crime rates. The Sentencing Project. https://www.sentencingproject.org/policy-brief/americas-incarceration-crossroads-reversing-progress-amid-record-low-crime-rates/

Glenn, A. L., Raine, A., & Schug, R. A. (2009). The neural correlates of moral decision-making in psychopathy. Molecular Psychiatry, 14, 5–6. https://doi.org/10.1038/mp.2008.104

Guthrie, C., Rachlinski, J. J., & Wistrich, A. J. (2001). Inside the judicial mind. Cornell Law Review, 86(4), 777–830.

Håkansson, A., & Berglund, M. (2012). Risk factors for criminal recidivism – A prospective follow-up study in prisoners with substance abuse. BMC Psychiatry, 12, Article 111. https://doi.org/10.1186/1471-244X-12-111

Henning, K. R., & Frueh, B. C. (1996). Cognitive-behavioral treatment of incarcerated offenders: An evaluation of the Vermont Department of Corrections' Cognitive Self-Change Program. Criminal Justice and Behavior, 23(4), 523–541. https://doi.org/10.1177/0093854896023004001

Kang, J., Bennett, M. W., Carbado, D. W., Casey, P., Dasgupta, N., Faigman, D. L., Godsil, R. D., Greenwald, A. G., Levinson, J. D., & Mnookin, J. (2012). Implicit bias in the courtroom. UCLA Law Review, 59(5), 1124–1186.

Karlsson, A., & Håkansson, A. (2022). Crime-specific recidivism in criminal justice clients with substance use—A cohort study. International Journal of Environmental Research and Public Health, 19(13), 7623. https://pmc.ncbi.nlm.nih.gov/articles/PMC9265645/

Lipsey, M. W. (2009). The primary factors that characterize effective interventions with juvenile offenders: A meta-analytic overview. Victims & Offenders, 4(2), 124–147. https://doi.org/10.1080/15564880802612573

Lösel, F., & Schmucker, M. (2005). The effectiveness of treatment for sexual offenders: A comprehensive meta-analysis. Journal of Experimental Criminology, 1(1), 117–146. https://doi.org/10.1007/s11292-004-6466-7

Mannerfelt, C., & Håkansson, A. (2018). Substance use, criminal recidivism, and mortality in criminal justice clients: A comparison between men and women. Journal of Addiction, 2018, Article 1689637. https://doi.org/10.1155/2018/1689637

McGuire, J. (2008). A review of effective interventions for reducing aggression and violence. Philosophical Transactions of the Royal Society B, 363(1503), 2577–2597.

Samuelson, M., Carmody, J., Kabat-Zinn, J., & Bratt, M. A. (2007). Mindfulness-based stress reduction in Massachusetts correctional facilities. The Prison Journal, 87(2), 254–268.

Shiroma, E. J., Ferguson, P. L., & Pickelsimer, E. (2010). Prevalence of traumatic brain injury in an offender population: A meta-analysis. Journal of Correctional Health Care, 16(2), 147–159. https://doi.org/10.1177/1078345809356538

Rights for Whom? A Comparison Between Early America and First-Wave Feminism
By Ha Yul (Ellie) Kim

Abstract

This article describes how first-wave feminists responded to the exclusionary function of universal form language (UFL) in American founding documents. To understand how feminists combated this exclusion, the study uses Fairclough's three-part critical discourse analysis. First, founding documents and first-wave feminist texts were analyzed on the textual level for gender-neutral, female-inclusive, and female-exclusive terms. Second, feminist texts underwent an inductive coding process to reveal their combative rhetorical strategies. Finally, results were analyzed through the lens of sexism as a social practice to evaluate how these choices challenged patriarchal norms. The researcher concludes that feminists primarily combat sexism through their broader rhetorical arguments rather than relying solely on the textual inclusion of women.

Introduction

First-wave feminism is a social and political movement that fought for women's rights, primarily the right to vote (Biscontini). However, American founding documents, which laid the legal groundwork for the nation, use broad language that makes guarantees of rights applicable to most or all people. Despite the appearance of inclusion, women were still excluded from important civic functions such as voting.

The Declaration of Independence declares that "all men are created equal," suggesting that all people are a part of the country's government and protections. Herein lies a contradiction between the meaning of the words on the document and how they came to be interpreted socially. This contradiction exists in other crucial founding documents such as the Bill of Rights.

To combat female exclusion, feminists used many rhetorical strategies to create and strengthen their arguments. DuBois contends that what makes first-wave feminism distinct from other waves of feminism in later eras is its diversity of argumentative bases. Instead of all activists basing their arguments on one core, shared idea, many feminists argued for the same goal on different bases.

Literature Review

1. History of American Founding Documents

Founding documents such as the Declaration of Independence and the United States Constitution are cornerstones of the American canon. However, the documents' idealistic visions stood in stark contrast to the existence of inequality in the Founding Fathers' society, as well as their own perpetuation of inequality as slave owners (Paul 219). This dichotomy set a precedent that interpretations of the Founding Fathers' documents must include exceptions, as evidenced by the authors themselves. Furthermore, during the American Revolution and throughout the birth of the nation, women were excluded from direct political discussions; for example, Abigail

Adams frequently urged her influential husband to consider issues of women's rights, but he dismissed her requests (Paul 223). As it pertains to equality for women, the United States Constitution makes sweeping generalizations about equality but does not explicitly guarantee it to women. This has made the fight for women's rights particularly difficult because it can legally be argued that women are not disadvantaged, even though reality shows otherwise (Heymann et al. 56). Amplifying the issue is the fact that the Constitution is difficult to amend (Higgins 203). Women's suffrage had been an idea for decades until it was finally ratified as a constitutional amendment in 1920 (Thomas). Even though the right to participate in democracy was technically guaranteed to all people in the US, the lack of explicit mention of women made it difficult to enforce. From this, it can be concluded that who "all" includes in these documents is ambiguous.

Founding documents based their philosophy on Enlightenment ideas of the social contract (Kerber). However, Enlightenment philosophers, despite championing values like equality and freedom, did not explicitly extend these principles to women (Pateman). Rather, when philosophy was infused into a society (such as Enlightenment ideals in the United States), it often adapted to the existing social norms (Pateman). Therefore, even though Enlightenment philosophy preaches equality, the social norm of patriarchy overrides true equality (Pateman). This raises the question of who is included in the "universal form" language (UFL), such as "We the People," used in founding documents.

2. American Exclusion Through Language

Besides the historical paradoxes of the Founding Fathers, Professor of History Herman Belz argues that the Constitution and the Declaration of Independence are premised on the idea that every person has unalienable individual rights and liberties (264). Because they do not specifically guarantee rights for every marginalized group, in the context of gender equality, it leaves room for an already patriarchal society to continue its oppression. Despite that, Belz maintains that it is not these documents' responsibility to address the social context of the time; they were meant to be long-lasting and broadly state the rights of individuals, regardless of whether the societies that they governed actually practiced equality.

Even if the Constitution may not be perfect, social movements are still able to use constitutional language to call for change because of its sweeping rights guarantees. Therefore, social movements can use constitutional language to apply rights specifically to marginalized groups. Hendrik Hartog, Professor in the History of American Law and Liberty, clarifies that social movements read into the Constitution to refute interpretations of it that exclude certain groups. For instance, women in the nineteenth century demanded enfranchisement because it was their right as citizens to have a say in their government. Without a vote, women would not be able to represent their interests. Moreover, without applying the Constitution's wide-reaching rights guarantees to all, people "will have learned the foolishness of identifying personal aspirations with constitutional rights," which threatens constitutional faith and the backbone of the nation (Hartog 1025).

Even if the Constitution can be used as leverage for change, it still condones exclusion. One example is the Insular Cases. The Insular Cases were a set of Supreme Court rulings that determined how to apply American citizenship to US territories. The ruling of *Downes v. Bidwell*, one of the Insular Cases, can be interpreted to suggest that "for the territories to be subject to US jurisdiction does not make them 'of the United States,' meaning they are not 'a part of the American family'" (Lisker 186). Essentially, the ruling implied that US territories were below the US itself because they were subject to the rule of the nation but not an actual part of the country. Such rhetoric is harmful because it reproduces colonial hierarchies by portraying the United States as a superior conqueror and territories as objects to be subjugated. More than that, it shows how omissions of explicit protections for marginalized groups allow the Constitution to be broadly interpreted to cause harm. There are no safeguards to prevent rulings like the ones in the Insular Cases. This same pattern of exclusion through omission operated in the context of women's rights, where the Constitution's failure to explicitly include women left their status subject to interpretation for decades.

3. First-Wave Feminism

Sexism framed the world of first-wave feminists. Historian Linda Kerber coined the term "Republican Motherhood" to explain the civic role of females in early America (11). Instead of participating in the republic in the public sphere through overt political action and voting, women were confined to the private sphere by raising virtuous children who would become productive participants in public politics if they were sons and nurturing mothers if they were daughters (Kerber 11).

To expand their political impact, women portrayed themselves in different lights through literature and argued why they should be granted the same rights. In fictional literature, feminists wrote about women as brazen and outspoken rather than quiet and demure; instead of these women being shunned, they were looked up to in these stories (Kerber). Even if explicit arguments for feminism were not made, implicitly, female authors were already challenging the notion of Republican Motherhood.

Feminists also made a wide variety of arguments for suffrage using different rhetorical strategies to make their criticisms more palatable. For instance, satire was employed while critiquing the patriarchy (Kerber 196).

Moreover, while writing the Declaration of Sentiments, which transformed first-wave feminism into a political fight, Elizabeth Cady Stanton is intentional about the rhetorical strategies she employs. This intentionality allows her to frame feminism as a political stance while exposing the dichotomy of UFL, which appears to be inclusive yet historically excluded women from politics (McMillen).

4. Emergence of a Gap

While scholars such as Belz, Kerber, and Paul have examined founding-era exclusion and feminist responses through historical and philosophical lenses, there has yet to be a systematic

linguistic analysis to directly compare how UFL operates across founding and first-wave feminist texts.

A prominent method for linguistic analysis is critical discourse analysis (CDA), developed by linguist Norman Fairclough. This method involves first a textual analysis, analyzing small linguistic details. Then, those textual findings are situated by how they are used in context, called a discursive analysis. In feminism, the discursive analysis would help understand how feminist texts respond to or argue against the exclusionary founding documents. Finally, all findings are contextualized by a social practice, or the social context of the time. For a first-wave feminist study, the social practice would be patriarchy because the feminists were operating in a sexist period of time; that sexism is explained in sections 1 and 3.

A CDA has not yet been performed to compare first-wave feminist documents and founding documents. This study aims to understand how UFL plays an exclusionary role, which would require a linguistic analysis. Other scholars have identified that UFL could be a problem, but no scholar has identified the prominence of UFL in founding and first-wave feminist documents to conclude if it directly perpetuates exclusion. Moreover, UFL being harmful specifically to women has not been tracked before; however, it has been tracked in other scenarios as Lisker's study shows how it made US territories legally inferior.

This study aims to answer: How might feminist texts challenge or expose the exclusionary function of UFL in founding documents? This addresses two key gaps in the literature. First, this study performs a CDA, which offers a detailed linguistic analysis that has not yet been performed to directly compare founding and first-wave feminist texts. Second, it closely tracks the exclusionary function of UFL, which scholars have identified could be potentially harmful and has been shown to exclude US territories, but has not yet been analyzed in the context of women's rights.

Method

1. Approach

This study employs a critical discourse analysis (CDA). CDA involves analyzing texts through three layers: textual, discursive, and social practice. The textual layer of CDA compares the usage of UFL between founding and feminist documents. The discursive layer highlights the rhetorical strategies that feminists use in their texts. Finally, the social practice layer situates these linguistic and rhetorical choices that feminists made in the social practice of patriarchy to see how they combated sexism.

2. Delimitations

To prioritize precision, the researcher limited the study to a comparison between early America (late 1700s) and first-wave feminism (roughly 1848-1920). This ensures that the results are contextual to this specific social movement instead of being scattered across different time periods.

This study analyzes four documents in total: two founding and two feminist. The founding documents chosen are the Bill of Rights and Declaration of Independence, which the National Archives describes as "instrumental to the founding and philosophy of the United States." The feminist documents chosen are the Declaration of Sentiments by Elizabeth Cady Stanton and Lucretia Mott, and "Is it a Crime for a Citizen of the United States to Vote?," a speech by Susan B. Anthony.

This study analyzes a deliberately small corpus, which is a methodological choice rather than a limitation of scope. The four texts were selected purposively, for two reasons. First, the feminist texts stand in a direct intertextual relationship with the founding documents: the Declaration of Sentiments mirrors the structure and language of the Declaration of Independence, and Anthony's speech quotes and reinterprets the language of the Constitution and the Declaration. The corpus is therefore not a sample drawn from a large population but a bounded rhetorical exchange between paired texts, which is what makes four sufficient. Second, the two feminist texts were chosen because they represent two distinct strategies for challenging exclusion, mimicry in the Declaration of Sentiments and constitutional reinterpretation in Anthony's speech, so the corpus captures the range of feminist approaches rather than simply its quantity. Consistent with critical discourse analysis, which prioritizes depth of interpretation over breadth of sample, the goal is to uncover the linguistic mechanisms operating within these specific texts rather than to generalize across a large corpus (Fairclough).

3. Design

CDA operates on three layers: textual, discursive, and social practice. This is to offer the most holistic understanding; analyzing one layer without the others gives an incomplete representation of the text (Fairclough).

Starting on the textual layer, this study highlights semantic scope, which is the scope of who is included in a text. Each mention of a person in a text was sorted into one of three categories: universal form, explicit group inclusion, and explicit group exclusion. Universal form is generally inclusive, using gender-neutral terms like "people." Explicit group inclusion mentions women in the conversation, and explicit group exclusion only references men. For example, "men and women" would be considered explicit group inclusion because women are mentioned in the text, but "all men" would be categorized as explicit group exclusion because it only refers to men and completely disregards women.

This coding scheme is deductive as it encompasses all possible ways individuals can be represented in a text. Universal form is identifiable due to its generality. Moreover, inclusion and exclusion operate as a binary that determines whether females are explicitly referenced. The textual analysis exposes whether females are explicitly included, excluded, or generalized at the textual linguistic level.

The textual analysis alone, however, does not capture the full picture. Discursive analysis is needed to contextualize these linguistic choices into the comprehensive arguments made by the authors. An argument is characterized by a coherent claim and reasoning. There are four main

types of arguments that feminists employed, which emerged during the inductive coding process: paraphrase, appeal to authority, inevitability language, and grievances. “Paraphrase” refers to instances where feminists reinterpret founding documents to extend their meaning to include women. “Appeal to authority” leverages established authorities to validate feminist claims. “Inevitability language” refers to how feminists frame women’s rights as the only logical conclusion of Enlightenment principles. “Grievances” refers to instances where feminists list injustices to outline contradictions between ideals and reality.

Table 1: Distinctions Between Discursive Strategies

Paraphrase	Active reinterpretation to include females in established frameworks; challenges the sexism infused in founding documents
Appeal to authority	Makes the argument for feminism on the basis of established documents and authors; does not challenge the established authority but builds on top of it
Inevitability language	Argues that women’s rights are the only way for Enlightenment principles like equality to be truly realized
Grievances	Lists injustices that females face

An inductive coding process was chosen. Due to the diversity of arguments and perspectives within first-wave feminism, a deductive coding scheme would have been difficult to create. Instead, after an initial reading of the texts, the arguments that emerged were coded into categories. These four argument types are the ones found in the Declaration of Sentiments and Anthony’s speech.

4. Procedure and Tools

During the data collection process, the researcher used an online annotating tool, Kami, to annotate online PDFs of the documents. Kami was used to visually sort scope phrases and rhetorical strategies on the documents through its highlight feature. Based on the scope category, the phrases were highlighted in a specific color: universal form in purple, explicit group inclusion in pink, and explicit group exclusion in blue.

Additionally, rhetorical strategies were marked accordingly. Instead of a color coding system, all rhetorical strategies were labeled on the document through Kami’s comment feature.

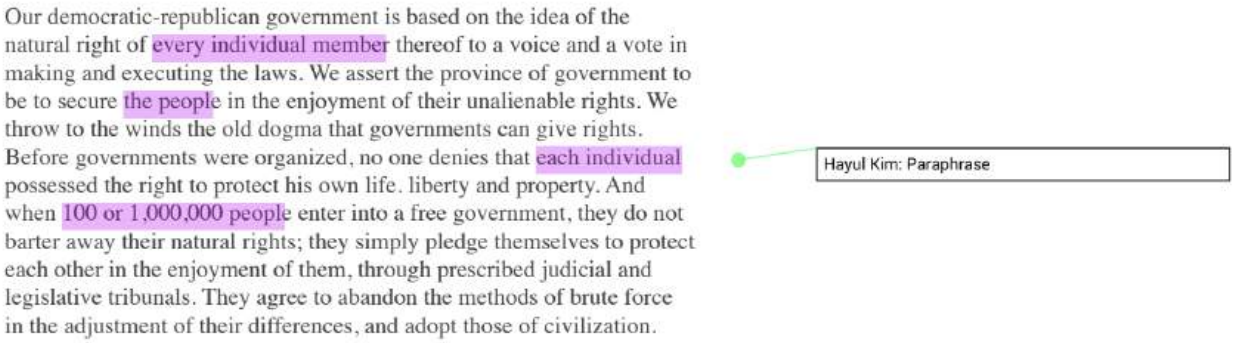


Fig. 1: Excerpt from Anthony's speech demonstrating the coding process.

In order to effectively organize the information, a Google Sheets spreadsheet tracked how different phrases and strategies were coded. The spreadsheet had two tabs to track the information: one for the textual scope phrases and one for the discursive rhetorical strategies. On the textual tab, the spreadsheet had four columns to track four types of information: document name, scope phrase as it appears on the document, scope category, and additional notes if needed. On the discursive layer, how often each discursive strategy was used was tracked.

5. Method Justification

CDA was chosen over alternative approaches such as content analysis or rhetorical analysis because this study requires examining language at both the micro-linguistic level (semantic scope) and the macro-social level (patriarchy and political exclusion). Analyzing only one of the levels would produce an incomplete understanding.

This limitation became evident during the data collection process. The initial method employed a content analysis that simply tracked the differences in semantic scope between founding and first-wave feminist documents. However, a purely textual analysis cannot adequately interpret micro-linguistic features without the context of the macro-social level. For instance, the word "woman" can be used to make either sexist or feminist claims; it depends on the context in which it is used.

This does not mean that the textual content analysis was irrelevant; to sufficiently answer the question of the role that UFL plays, the researcher needed to analyze semantic scope differences between founding and feminist texts. However, a second layer of data collection was incorporated to code for the discursive arguments that feminists made, allowing for an examination of how linguistic choices function within the broader argumentative strategies. Finally, all of this data was situated in the social context of patriarchy to explain why feminists constructed their arguments in certain ways, or why they chose certain discursive practices. CDA uniquely provides a holistic method by connecting textual features to discursive practices and situating both within broader social structures (Fairclough). This multi-layered approach is essential because analyzing any single level in isolation would miss other important information needed for accurate interpretation.

Results

Throughout the process, 65 scope phrases (15 founding, 50 feminist) and 43 discursive strategies were coded across the two founding and two first-wave feminist texts.

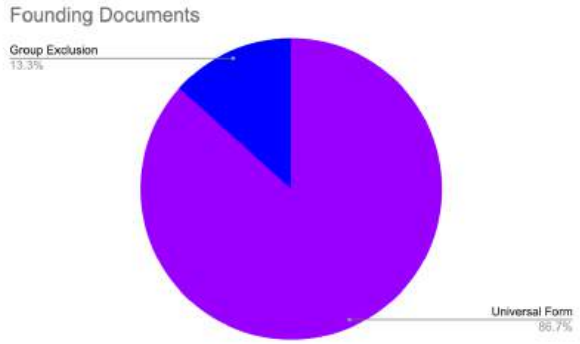


Fig. 2: Scope phrases used across founding documents. Universal form phrases made up 86.7% (13/15) of the sample, while explicit group exclusion accounted for 13.3% (2/15). No explicit group inclusion phrases were present.

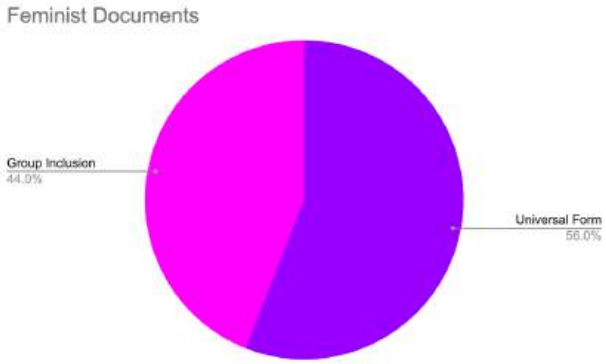


Fig. 3: Scope phrases used across first-wave feminist documents. Universal form phrases made up 56% (28/50) of the sample, while explicit group inclusion accounted for 44% (22/50). No explicit group exclusion phrases were present.

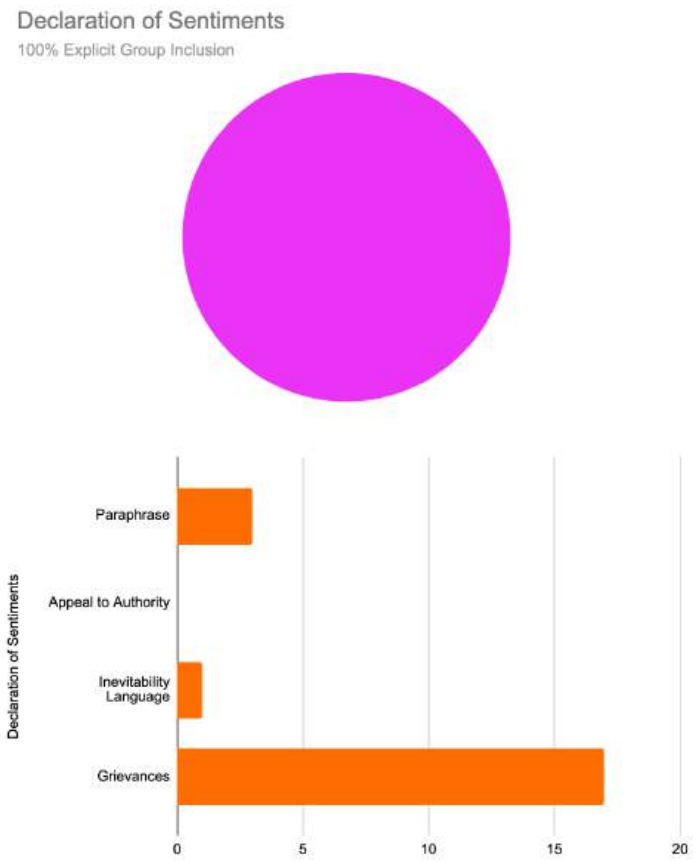


Fig. 4: Textual and discursive strategies used in the Declaration of Sentiments. Textual strategies consisted of 100% (3/3) explicit group inclusion language. Among discursive codes, “grievances” accounted for the majority at 81% (17/21), followed by “paraphrase” at 14% (3/21) and “inevitability language” at 5% (1/21).

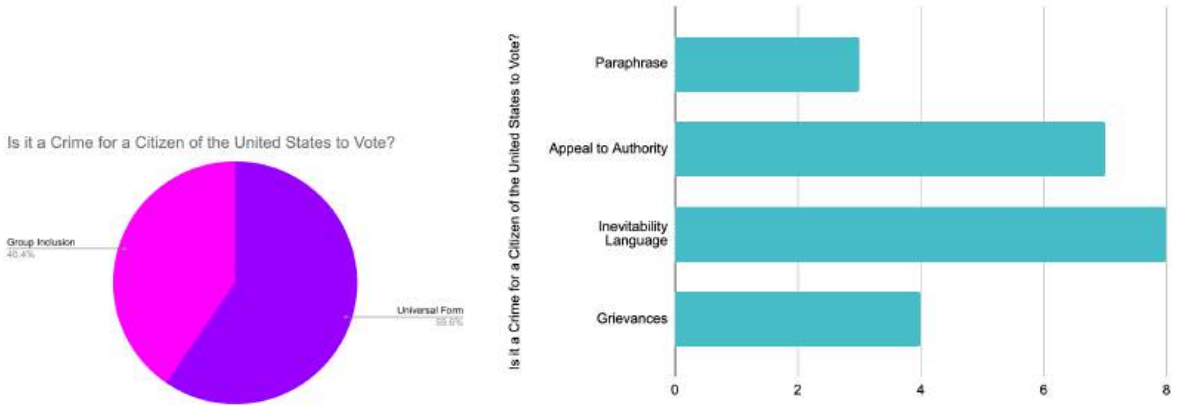


Fig. 5: Textual and discursive strategies used in “Is it a Crime for a Citizen of the United States to Vote?” Textual strategies consisted of 59.6% (28/47) universal form language and 40.4% (19/47) explicit group inclusion language. The primary discursive strategies used were “inevitability language” and “appeal to authority,” accounting for 8 of 22 instances and 7 of 22 instances, respectively.

Analysis

1. Interpretation

This study concludes that feminists primarily use discursive rhetorical strategies to expose the exclusionary function of UFL within founding documents; feminist textual strategies change to suit the discursive strategies.

Analysis of these findings must be done with social practice in mind. Social practice is the third layer of CDA and contextualizes the text and discourse in the historical time period, which allows for more accurate and holistic analysis (Fairclough).

Beginning with the textual analysis, in the Declaration of Independence and the Bill of Rights, 86.7% of the coded phrases were UFL; the remainder was "explicit group exclusion" language, meaning that only men were referenced. In comparison, the feminist texts had 0% "explicit group exclusion" and used "explicit group inclusion" 44% of the time, meaning that they explicitly included women. From these numbers, it can be concluded that feminist authors are more inclusive of women. To put this in perspective, across the two founding documents, women were mentioned zero times, whereas men were still referenced. The lack of specificity allows for social interpretation of the founding documents, but the founding era was fraught with sexism, which allowed for these documents to be interpreted in a sexist fashion (Pateman). Including women in these crucial documents, which continue to influence US legal doctrine, would have protected their rights from the nation's inception. Abigail Adams, a feminist and wife of delegate John Adams, attempted to convince him to "remember the ladies" as he contributed to founding documents, something that he did not do because of the socially accepted sexism (Paul). The Founding Fathers were influenced by Enlightenment philosophy, which champions equal rights and freedom, but they still infused their sexist beliefs in the documents they penned (Pateman). Pateman explains how philosophies adapt to suit societies as they already are; so in the context of the Founding Fathers, even though they were influenced by a philosophy that prioritizes equality, they molded it to suit the sexism in their society.

Another key finding is that feminists used different discursive strategies. This emphasizes the variety of thought that existed within the movement itself (DuBois). The Declaration of Sentiments primarily uses the "grievances" strategy, while "Is it a Crime for a Citizen of the United States to Vote?" primarily uses the "appeal to authority" and "inevitability language" strategies. Their differences highlight how discursive strategies themselves evolved within feminism to expose or challenge different ideas (Campbell). In Campbell's analysis of first-wave feminist rhetorical strategies, she underlines how each feminist approached her argument through her unique lens. Campbell's analysis goes to show how feminists, despite their differences, were able to capitalize on their unique styles to further their cause through a wide variety of arguments that appealed to different audiences. Some styles, like those of Susan B. Anthony, appeal more to authority and existing leaders to incite change, whereas others are more fiery and draw upon the anger of women to fight for change. Regardless of each feminist's style, it is evident that a diversity of thought existed, and this furthered feminism's palatability.

Finally, the variety of textual strategies used by first-wave feminists undermines the idea that UFL is universally negative. This is because first-wave feminist texts use UFL as well. In the Declaration of Sentiments, 100% of the textual codes were "explicit group inclusion," but in "Is it a Crime…," only 40.4% of the codes were "explicit group inclusion." The other 59.6% was UFL. However, this disparity in "explicit group inclusion" and UFL can be explained by the discursive strategies that Anthony uses in her speech. In "Is it a Crime…," the primary discursive strategies are "appeal to authority" and "inevitability language." Anthony's speech often refers to the founding documents, appealing to the logic that they used to then suggest that based on that line of reasoning, women should also be given the right to vote; this argument is framed as an inevitable consequence of the founding documents' language. Specifically, she states that because of the extensive UFL in founding documents, women should be included in it, which is why they should have the right to vote. Given Anthony's argument is to include women within UFL's scope, it makes sense that her speech would include UFL to effectively make her point. Anthony is not alone in making this argument; other feminists have made similar claims (Thomas).

In the Declaration of Sentiments, the reason why the sole textual strategy is "explicit group inclusion" can be explained when looking at its primary discursive strategy, "grievances." The Declaration of Sentiments takes a different approach from Anthony's speech because it lists all the ways that women have been oppressed in the United States. To make their argument about women's exclusion, authors Stanton and Mott would have needed to mention women constantly. Hence, the Declaration of Sentiments is entirely composed of "explicit group inclusion" language because its discursive strategy requires it to do so.

The feminist texts differ not only in their discursive strategies but also in their textual strategies. When analyzed together, these factors suggest that textual practices depend on the specific discursive strategies used. Furthermore, feminist usage of UFL demonstrates that its vague and potentially exclusionary function is not harmful when wielded intentionally. This finding complicates the view that UFL inherently excludes women.

2. Research Question Answer

This study aims to answer the question: How might feminist texts challenge or expose the exclusionary function of UFL in founding documents? The final conclusion, that feminists primarily use discursive practices to expose exclusion and that textual strategies change to suit the discursive practices, contrasts with the initial assumption. At the start of the process, the researcher assumed that feminists used both textual and discursive rhetorical strategies to expose the exclusionary UFL. However, this was not supported, given that textual practices seem to simply match the discursive practices used. Textual strategies are intentional, but that is only because certain discursive practices require certain textual choices to make the strongest argument.

3. Filling the Gap

This study fills the initially outlined gap in the research. Previous researchers (Paul; Heymann et al.; Pateman; Kerber) understand how first-wave feminists combated sexism by analyzing their texts and actions through a broad historical or philosophical lens. This research contributes a closer examination of founding and first-wave feminist texts through a linguistic and discursive analysis. Other research does not employ systematic textual comparisons between founding and first-wave feminist documents. This paper offers a unique perspective for understanding the exclusion that existed in the founding era and how first-wave feminists combated it.

4. Implications

This research emphasizes how first-wave feminism consisted of a diverse array of arguments and strategies. The various discursive strategies that emerged during the coding process supplement this argument. Hence, it is necessary to utilize a holistic approach when examining first-wave feminist literature. It reaffirms DuBois's argument—because first-wave feminism emerged from various other movements, most feminists created their own arguments instead of relying on a specific ideology or canon. With their intellectual diversity in mind, first-wave feminists require a holistic approach; this study's use of CDA is an example.

Moreover, this study suggests that language is flexible and does not always have the same meaning in different contexts. When UFL is used in founding documents, it primarily serves as an implicit exclusion strategy, whereas when feminists incorporate UFL, it is part of a broader discursive strategy to expose its exclusionary function. The flexibility of language adds another dimension to the need for a holistic approach for understanding nuance.

5. Limitations

This research is not without its limitations. First, this study was conducted by a sole researcher, which limits the perspectives that can be shared. This limits the value of CDA, which is intended to expose hidden exclusionary practices (Groff). Because only one researcher is involved, only one perspective is able to be shared, which may offer fewer findings than if multiple researchers critically analyzed texts and each contributed their findings (Fairclough). This does not necessarily mean that CDA is a purely subjective research method, but in order for it to be more robust, having a team of researchers ensures that personal bias during thematic coding does not hinder findings. Because the study used a sole researcher and inductive coding, minor inconsistencies may have occurred, which a multi-coder approach could have mitigated.

Second, this study only covers two perspectives of first-wave feminists. As DuBois established, first-wave feminists drew on several different philosophical, social, and legal perspectives to make their arguments. This study analyzes the perspectives of a limited number of feminists. For a fuller understanding of the movement, more texts with different authors could be analyzed. Given the time constraints of the data collection period as well as the intensity of the coding process, the sole researcher's capacity was limited to analyzing four texts.

6. Recommendations for Future Research

There are many avenues for further research. First, the researcher suggests that another scholar repeat the study to contribute a new perspective during the CDA process, aligning with Fairclough's emphasis on the value of multiple perspectives throughout the research process. Additionally, more texts could be analyzed to understand a broader range of first-wave feminist literature.

Finally, CDA could be particularly useful to examine the racial boundaries and implicit exclusions within the first-wave feminist movement. Although an equal rights movement, first-wave feminism existed alongside slavery and deeply embedded racism. Consequently, Sojourner Truth, a formerly enslaved woman and first-wave feminist, pushes the boundaries of who "woman" defines to include Black Americans (Zackodnik 50). Perhaps a similar CDA study could be conducted to examine how marginalized women were excluded within the first-wave feminist movement itself and how feminists like Sojourner Truth challenged this. This would help scholars further understand how exclusion persisted in progressive movements and what counterstrategies have been historically used.

Works Cited

Anthony, Susan B. "Is it a Crime for a Citizen of the United States to Vote?" 1873. Civil Rights and Conflict in the United States: Selected Speeches, Lit2Go, University of South Florida, etc.usf.edu/lit2go/185/civil-rights-and-conflict-in-the-united-states-selected-speeches/4855/is-it-a-crime-for-a-citizen-of-the-united-states-to-vote/.

Belz, Herman. "Liberty and Equality for Whom? How to Think Inclusively about the Constitution and the Bill of Rights." The History Teacher, vol. 25, no. 3, May 1992, pp. 263-277. JSTOR, www.jstor.org/stable/494240.

Biscontini, Tyler. "First-Wave Feminism." EBSCO Research Starters, 2024, www.ebsco.com/research-starters/women-s-studies-and-feminism/first-wave-feminism.

Campbell, Karlyn Kohrs. Man Cannot Speak for Her. Praeger, 1989.

DuBois, Ellen Carol. Feminism and Suffrage: The Emergence of an Independent Women's Movement in America, 1848-1869. Cornell University Press, 1999.

Fairclough, Norman. Critical Discourse Analysis: The Critical Study of Language. Routledge, 1995.

Groff, Adam. "Critical Discourse Analysis (CDA)." EBSCO Research Starters, 2023, www.ebsco.com/research-starters/language-and-linguistics/critical-discourse-analysis-cda

Hartog, Hendrik. "The Constitution of Aspiration and 'The Rights That Belong to Us All.'" The Journal of American History, vol. 74, no. 3, Dec. 1987, pp. 1013-1034, https://doi.org/10.2307/1902163.

Heymann, Jody, et al. "Why Addressing Gender Is Foundational." Advancing Equality: How Constitutional Rights Can Make a Difference Worldwide, University of California Press, 2020, pp. 45-70. JSTOR, www.jstor.org/stable/j.ctv1f8854w.7.

Higgins, Henry Bournes. "The Rigid Constitution." Political Science Quarterly, vol. 20, no. 2, June 1905, pp. 203-222, https://doi.org/10.2307/2140397.

Kerber, Linda K. Women of the Republic: Intellect and Ideology in Revolutionary America. University of North Carolina Press, 1980.

Lisker, Claire. "Geographic and Linguistic Belonging: A Prerequisite for Full Constitutional Rights." Chicanx-Latinx Law Review, vol. 39, no. 1, 2023, pp. 183-208. JSTOR, www.jstor.org/stable/48747595.

McMillen, Sally Gregory. Seneca Falls and the Origins of the Women's Rights Movement. Oxford University Press, 2009.

National Archives. "America's Founding Documents." National Archives, 18 Dec. 2018, www.archives.gov/founding-docs.

Pateman, Carole. The Sexual Contract. Polity Press, 1988.

Paul, Heike. "American Independence and the Myth of the Founding Fathers." The Myths That Made America: An Introduction to American Studies, transcript Verlag, 2014, pp. 197-256. JSTOR, www.jstor.org/stable/j.ctv1wxsdq.8.

Stanton, Elizabeth Cady, and Lucretia Mott. “Declaration of Sentiments.” 1848. A History of Woman Suffrage, edited by Elizabeth Cady Stanton et al., vol. 1, Fowler and Wells, 1881, pp. 70-71.

Thomas, Tracy A. “The Long History of Feminist Legal Theory.” The Oxford Handbook of Feminism and Law in the United States, edited by Deborah L. Brake et al., Oxford University Press, 2023, https://doi.org/10.1093/oxfordhb/9780197519998.013.1.

Zackodnik, Teresa C. “‘I Don’t Know How You Will Feel When I Get Through’: Racial Difference, Woman’s Rights, and Sojourner Truth.” Feminist Studies, vol. 30, no. 1, 2004, pp. 49–73. JSTOR, http://www.jstor.org/stable/3178558.

Appendices

Appendix A: Textual layer, coded data

Document	Scope Phrase (as it appears on the document)	Scope Category	Notes
Bill of Rights	the people	Universal form	
Bill of Rights	the people	Universal form	
Bill of Rights	the people	Universal form	
Bill of Rights	No person	Universal form	Negative universal
Bill of Rights	any person	Universal form	
Declaration of Independence	one people	Universal form	
Declaration of Independence	all men	Explicit group exclusion	
Declaration of Independence	among men	Explicit group exclusion	
Declaration of Independence	the People	Universal form	
Declaration of Independence	mankind	Universal form	
Declaration of Independence	the people	Universal form	
Declaration of Independence	the People	Universal form	
Declaration of Independence	our people	Universal form	
Declaration of Independence	our people	Universal form	
Declaration of Independence	our fellow Citizens	Universal form	
Declaration of Sentiments	all men and women	Explicit group inclusion	
Declaration of Sentiments	women	Explicit group inclusion	
Declaration of Sentiments	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	all United States citizens	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	every individual member	Universal form	Singular
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	each individual	Universal form	Singular
Is it a Crime for a Citizen of the United States to Vote?	100 or 1,000,000 people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	

Document	Scope Phrase (as it appears on the document)	Scope Category	Notes
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the whole people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	The women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	we, the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	we, the whole people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	we	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the whole people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women as well as men	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	woman	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	a homogenous people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	all the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	the whole people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	female	Explicit group inclusion	

Document	Scope Phrase (as it appears on the document)	Scope Category	Notes
Is it a Crime for a Citizen of the United States to Vote?	citizens	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	person	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	persons	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women's	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	citizens	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	citizens	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	any class of citizens	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	the mother and sisters, the wife and daughters	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	all women	Explicit group inclusion	

Document	Scope Phrase (as it appears on the document)	Scope Category	Notes
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	the people	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	a person	Universal form	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	women are reckoned as citizens, equally with men	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	women are citizens	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	women	Explicit group inclusion	
Is it a Crime for a Citizen of the United States to Vote?	not only the black man, but the black woman, and all woman as well	Explicit group inclusion	

Appendix B: Textual layer, sorted data

Bill of Rights		Declaration of Independence	
Universal Form	5	Universal Form	8
Explicit Group Exclusion	0	Explicit Group Exclusion	2
Explicit Group Inclusion	0	Explicit Group Inclusion	0

Declaration of Sentiments		Is it a Crime for a Citizen of the United States to Vote?	
Universal Form	0	Universal Form	28
Explicit Group Exclusion	0	Explicit Group Exclusion	0
Explicit Group Inclusion	3	Explicit Group Inclusion	19

Appendix C: Discursive layer, sorted data

Declaration of Sentiments		Is it a Crime for a Citizen of the United States to Vote?	
Paraphrase	3	Paraphrase	3
Appeal to Authority	0	Appeal to Authority	7
Inevitability Language	1	Inevitability Language	8
Grievances	17	Grievances	4

The Systemic Limitations of Addressing Youth Drug Use in South Korea By Jayoo Kim

Abstract

South Korea, once known as a nearly drug-free society, is now facing a detrimental epidemic of youth drug use across the nation. This policy analysis examines how limitations in prevention education, digital enforcement, and rehabilitation treatment contributed to youth drug use in South Korea. By analyzing government policies, academic research, and international policies, this paper seeks to identify factors contributing to youth drug use, including digital accessibility, academic pressure, and prescription drug misuse. It also evaluates South Korea's response and the structural limitations that reduced its effectiveness. The evaluations suggest that youth drug use is not solely an individual's decision-making problem, but rather an intricate relationship between vulnerable individuals and systemic factors. The paper concludes by stating that a reinforcement in prevention education, cyber enforcement, and rehabilitation programs seems to be necessary to address the youth drug problem in South Korea.

Introduction

Ever since the birth of the nation, South Korea has carefully maintained a global reputation as an almost drug-free society. This status has been largely sustained by strong anti-drug laws and a deeply embedded social culture that condemns any form of illicit substance use. In recent years, however, South Korea has encountered a proliferation in drug use, especially in the youth population. The surge of anonymous social platforms–most notably Telegram– has created online drug markets, making drugs far more accessible than ever before. Public discussions frame this as an individual responsibility issue, but they usually overlook the social structure that pulls individuals into such problems. Rising academic pressure, mental health problems, and insufficient prevention programs show that the youth drug issue is not only the youth's fault.

This paper argues that despite the efforts of the South Korean government to stop youth drug use, limitations in prevention programs, digital regulations, and mental health support have decreased the overall effectiveness of these interventions, which has allowed the problem to expand and persist. The paper will discuss how the South Korean government has attempted to mitigate drug use, examine the structural failures that draw youths into drugs, the impact of drug use on youth development, and possible policies that could alleviate the issue.

Literature Review

Current Prevention Measures

There are several ways in which the South Korean government has sought to prevent the dissemination of narcotics. First, South Korea currently has a Narcotics Information Management System (NIMS) to track and monitor medical narcotics use and the system's implementation results. NIMS was created to counter the increase in misuse and abuse of

medical narcotics like propofol, zolpidem, stimulants, and opioid analgesics. Studies have shown that the number of prescriptions for medical narcotics has been reduced by 9.2% since the implementation of NIMS (Kim, S. et al.). However, there are still limitations to this method. Since NIMS focuses on tracking narcotics rather than preventing them, it can't fundamentally prevent a doctor from writing a prescription or a patient from abusing a legitimately obtained drug. Also, NIMS only tracks the lifecycle of prescribed drugs, which means that the use of illicit narcotics cannot be tracked with the current system.

Similarly, to prevent these drugs from reaching the youth, the Ministry of Food and Drug Safety (MFDS) is responsible for overseeing the regulation of narcotics and strong substances. MFDS handles this task by monitoring the manufacture, import, and distribution of controlled drugs and implementing the Narcotics Control Act. The Narcotics Control Act, implemented in 2000, regulates the proper handling of narcotics, psychotropic substances, and precursor materials to prevent harm from the misuse and abuse of such substances (Baek et al.). That said, MFDS has the same limitation as NIMS. Since the organization only oversees the regulation of legal narcotics, MFDS faces limitations in controlling youth's access to illicit drugs like ketamine or ecstasy through online markets.

South Korea's police department addresses this problem. The Korean National Police Agency, or KNPA, investigates and suppresses domestic drug crimes and enforces laws enacted by the National Assembly. It uses several methods to make this possible: cyber investigations, involving Telegram and other social media; drug investigations, involving drug use and possession; and international investigations, involving the suppression of the distribution of illicit drugs coming from other countries. In a 2023 study by Lee and Noh, researchers found that the number of drug crime arrests increased as the media coverage of drug crime increased (Lee and Noh). The 2024 White Paper on Drug Crimes published by the Supreme Prosecutors' Office supports this trend in drug crime arrests, as shown in Figure 1 (Supreme Prosecutors' Office of the Republic of Korea 2025).

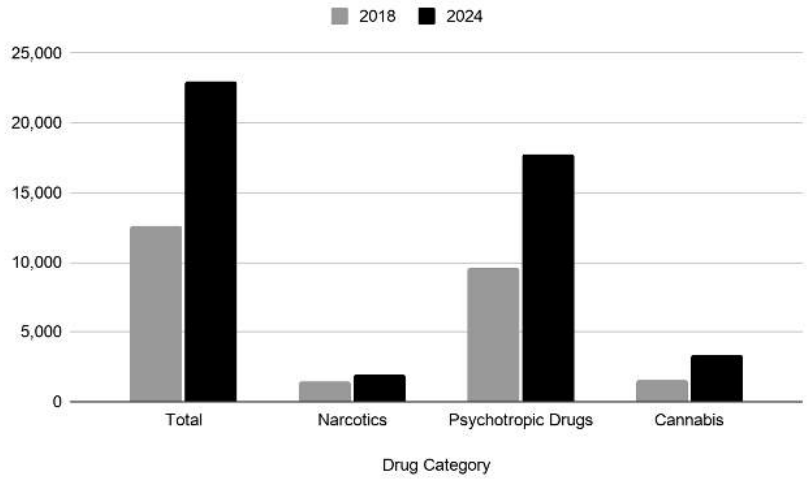


Fig 1: Number of drug offenders apprehended in South Korea by drug category (2018, 2024).
Note. Adapted from *Drug Crime White Paper (2024)* (Supreme Prosecutors' Office of the Republic of Korea 2025).

However, this trend doesn't necessarily demonstrate improved effectiveness of the police department. Rather, the trend partly reflects the growing prevalence of drug offenses among the population. An international study by Friedman et al. in 2011 states that deterrence-based approaches, such as stronger government enforcement, to reducing drug use do not appear to reduce the prevalence of injection drug users (Friedman et al.).

Recent statistics on youth drug-related offenses in South Korea show the severity of the problem. In 2017, there were 119 drug offenses committed by youth under the age of 19, according to the Supreme Prosecutors' Office. In 2024, however, that number grew to 649, showing a truly concerning 445% increase. This dramatic surge in youth drug use manifests the seriousness of the problem and points to the need for change in the fundamental social structure that's ultimately causing the problem (Supreme Prosecutors' Office of the Republic of Korea 2025; Supreme Prosecutors' Office of the Republic of Korea 2019).

Among the drugs that youth drug offenders abuse, methamphetamine and ketamine are two of the most prominent illicit narcotics that are being abused. According to research by the United Nations Office on Drugs and Crime, South Korean authorities seized a combined amount of 1515.3kg of methamphetamine and 167.5g of ketamine from 2020 to 2024 (United Nations Office on Drugs and Crime). The reason why this is so significant is that both substances can have deadly consequences even with a small amount, especially for teens.

The methods by which youths acquire drugs in South Korea have undergone significant change since the introduction of social media and internet platforms. Before social media, almost all transactions involving illegal substances required personal interactions offline, which limited access to drugs for most of the population. Also, the requirement to meet in person to trade drugs made it easier for the authorities to track down and arrest criminals. However, as drug purchases shifted more towards online transactions, youth gained significantly easier access to illicit narcotics, and thus, youth drug offenses increased. Through platforms such as Telegram, people created social networks and group messages to not only trade drugs but also to pull in and advertise drugs to the youth. Now, it has become far more complex and difficult to track and arrest criminals who are involved in drug trading, especially the masterminds who control and oversee the meticulously designed distribution system.

The youth drug problem can be described as a universal problem. Like South Korea, many other countries have faced the same challenge it is facing right now. Consequently, each of the countries facing the same problem has responded differently. For example, Japan has a strong school-based prevention system that involves annual anti-drug campaigns and classroom education (such as the No Absolutely Not campaign). The Japanese government also creates age-specific educational materials to support drug use prevention at school (Ministry of Health, Labour and Welfare of Japan). This effort partially helped Japan to maintain relatively low levels of drug arrests in the population despite a heavy load of illegal narcotics coming into the country, as shown in Figure 2 and Figure 3 (United Nations Office on Drugs and Crime).

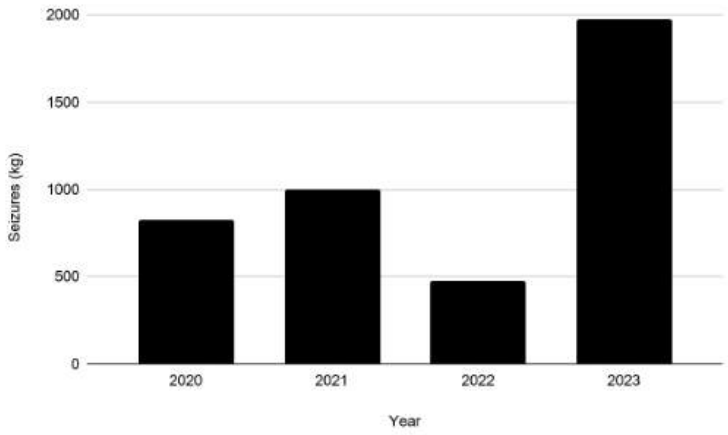


Fig 2: Japan Methamphetamine Seizures (2020-2023).
Note. Adapted from *Synthetic Drugs in East and Southeast Asia 2025* (United Nations Office on Drugs and Crime).

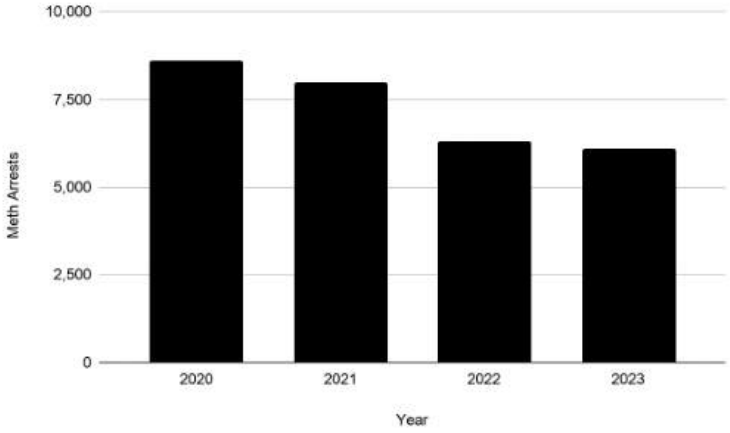


Fig 3: Methamphetamine-Related Arrests in Japan (2020-2023).
Note. Adapted from *Synthetic Drugs in East and Southeast Asia 2025* (United Nations Office on Drugs and Crime).

Another example that demonstrates this is Singapore. Singapore has a strong legal framework that highly deters the use of illegal drugs: long prison terms, mandatory detention in certain cases, and severe penalties for trafficking (Attorney-General's Chambers of Singapore). By examining these policies, the South Korean government can implement measures to help reduce youth drug use.

Key Factors Contributing to Youth Drug Use

Telegram, a social messaging application, is considered one of the most prominent mediums used by youth to gain access to illicit drugs. Telegram has several features that are useful for teens, such as end-to-end encryption, minimal identity verification, rapid account creation and deletion, and the ability to create anonymous accounts, which allow teens to elude the authorities easily. This also increases the exposure of illegal substances for the youth population. Since social media platforms allow drug kingpins to advertise their drugs and sell

them more easily than ever before, teens are constantly exposed to drug advertisements and the opportunity to purchase those substances. Previously, youths had to actively reach out to dealers to obtain the opportunity to purchase the drugs. Now, the scheme works the other way around. Youths encounter drug ads online, and dealers reach out to them through platforms like Telegram to offer them drugs. This process has significantly increased the use of drugs among the youth population in South Korea.

South Korea is also known for its immense academic pressure. The College Scholastic Ability Test is notorious for its difficulty and is widely perceived as a major factor in university admissions decisions that ultimately affect future job opportunities. The hagwon system in South Korea is also a major contributor to academic pressure. Students study for an average of 3-4 hours after school each day, which keeps them from getting enough sleep. The youth suicide rate directly reflects this conspicuous increase in academic pressure. According to the OECD, South Korea has one of the highest adolescent suicide rates among OECD countries (OECD). Suicide is also the leading cause of death for the youth population in South Korea. Although this pressure doesn't justify the act of using illicit narcotics, it is a fact that South Korean students experience extreme mental stress for a very long period of time, which drives them to consider such acts. This aspect of the driving factor of youth drug use in South Korea highlights the fact that solving youth drug use is not merely about law enforcement, but also a fundamental change in the social structure that's putting immense pressure on students.

As prescription drugs became more prevalent, the misuse of those narcotics also increased. This partially served as a gateway for the youth to get accustomed to using narcotics, possibly pulling them into more serious drugs like methamphetamine and ketamine. A 2022 study by Jeong Cheol Seo and his colleagues revealed that the ADHD diagnosis rate increased by 47% between 2008 and 2018 (Seo et al.). This means that more and more youths are being prescribed ADHD pills. So why is this important? Most commonly prescribed ADHD medications include substances such as methylphenidate and atomoxetine, which could potentially cause sleep disruption, appetite loss, and nausea. Additionally, there is a chance of the patient acting inadequately with the prescribed medication, such as taking higher doses, sharing it with friends, and using it to study longer. And through these acts, youths may be more vulnerable to using illicit narcotics in the future. This was confirmed by an international longitudinal study by Pasman et al. studying the association between frequency and recency of nonmedical prescription stimulant use in adolescence and cocaine use in adulthood. In the study, researchers found that nonmedical prescription stimulant use in adolescence was associated with increased odds of cocaine use in young adulthood (Pasman et al.). This result is significant because the current mass prescription of ADHD pills may foretell the increase in the use of illicit narcotics in the future.

Structural Failures in South Korea's Response

The youth drug problem in South Korea can be mainly attributed to South Korea's lack of a decisive response to mitigate the issue. For example, the drug prevention program in South

Korea has been insufficiently robust. Although South Korea had a drug prevention education in schools for decades, the depth of that education was very perfunctory, and the education was inadequate to stop the diffusion of drug use among youth. The main issue was that the complacency created by the social regard that South Korea is a drug-free society led to a lax stance towards the need for drug prevention education. Thus, in response to the sudden spike in youth drug statistics in recent years, the Ministry of Education required every school to provide 10 hours of substance misuse prevention education annually (Ministry of Education of the Republic of Korea). However, this requirement also included alcohol and tobacco misuse prevention education, which diminished the drug prevention aspect of the education, leading to reduced effect on drug prevention. This is evident statistically, since youth drug usage continued to prevail after the implementation of the prevention education requirement.

The challenges imposed by digital technology are also non-negligible. As discussed before, the trend in drug transactions has changed dramatically due to advances in technology. Previously, government authorities like the KNPA tracked dealers in real life and offline transactions. However, nowadays, the authorities have to get through encrypted messaging platforms, temporary group chats and accounts, and disappearing messages. Also, the change in the currency medium was another hindrance to the authorities' efforts to capture the criminals. These days, some drug transactions are made with cryptocurrency, which obscures the money flow created by the transaction, making it even harder to track who's selling and purchasing the drugs. These criminals' adaptations to new technology have challenged the enforcement system's outmoded methodology and shown that the authorities need to find a new way to stop them from persisting.

South Korea's approach to rehabilitation is another issue. South Korea's response to drug use has been mainly focused on deterring and punishing drug offenders. Of course, adequate punishment is necessary for criminals who have broken the law, but merely discouraging the offender is not the most effective rehabilitation method to prevent recidivism. The International Standard for the Treatment of Drug Use Disorders, written by the UNODC and WHO in 2020, accentuates the importance of specialized treatment programs and access to those treatments for adolescents with substance use disorders because of their immature brains and cognitive functioning (United Nations Office on Drugs and Crime & World Health Organization 2020). Although South Korea has expanded its rehabilitation services, it currently lacks a youth-specific rehabilitation program, possibly exacerbating the recidivism rate among youth drug offenders. Furthermore, a 2025 research study by Na and Kim analyzing the effectiveness of South Korea's rehabilitation system found significantly higher survival rates for the group that received rehabilitation education. However, the researchers also noted that South Korea has historically taken a punitive approach to drug offenders, and not all offenders received rehabilitation education (Na and Kim). This shows the shortcomings of the South Korean rehabilitation system that could increase the chances of recidivism by overlooking some of the key aspects of rehabilitation programs that make the programs more effective.

Current Case Studies

One major case study that shows the youth drug problem in South Korea is the adolescent methamphetamine intoxication case reported by Kim, J.H. et al. In 2023, a 17-year-old girl visited the emergency department for vomiting and loss of consciousness. The doctors suspected drug addiction since she had needle marks on both arms. They did toxicological tests and confirmed that she had a lethal dose of methamphetamine. Fortunately, she survived after monitoring and good care by the doctors (Kim, J.H. et al.). This case shows that adolescents may not receive the right care or prevention program before progressing to a lethal level of drug intoxication.

Another case that shows the digital drug trade problem in South Korea is the nationwide Telegram drug distribution case. In 2025, a nationwide investigation by the Daegu National Police Agency dismantled a drug distribution network that was using Telegram as a main medium of communication. 57 individuals involved in the distribution process were arrested, and 17 were taken into custody. The criminals smuggled and distributed narcotics worth 56.8 billion South Korean won and were charged with violating the Narcotics Control Act and organized crime. They smuggled large amounts of drugs from countries like Vietnam, and domestic distributors sold those drugs through Telegram through non-face-to-face transactions. They also received payment only in virtual assets to avoid detection by the police. The Daegu Police Agency stated that this case is more than what meets the eye and exposed the complexity of the new structure and methods used in new drug crimes (Byunggeon; Lee) The characteristics of this case, the fact that it involved large amounts of narcotics and was digitally managed, may pose threats by increasing accessibility of drugs for people who are familiar with digital technology, such as the youth.

Implications

Why does this all matter? Everyone knows that drugs are bad, but a few acknowledge the bigger impact drugs can have, especially on adolescents. In 2015, researchers Lyoo et al. from Ewha Womans University examined the effects of methamphetamine on the adolescent brain. The researchers discovered that adolescent methamphetamine users had greater changes in their gray and white matter than adult methamphetamine users, particularly affecting the frontostriatal system. This finding suggests that the same amount of methamphetamine can have a more devastating effect on the adolescent brain than the adult brain (Lyoo et al.). Additionally, a 2020 study by Salmanzadeh et al. about adolescent drug exposure discovered that drugs can have long-lasting neurobiological consequences, such as altering reward systems, disrupting working memory, and causing anxiety disorders in the adolescent brain. Also, the study noted that youth drug use could increase the risk of subsequent drug abuse later in adult life (Salmanzadeh et al.).

Another aspect of the effects of drugs on youth is the social consequences. Adolescents who abuse illicit narcotics experience not only physical suffering, but also mental and social distress. A longitudinal study by Brière et al. in 2013 about Canadian adolescents' illicit drug use and subsequent academic and psychosocial adjustment revealed that youth drug use increases the

risk of school dropout and conduct problems (Briere et al.). This study shows that the use of drugs in the early stage of life could disrupt not only the individual's physical health, but also important parts of social life, which is highly related to the mental state of the individual. Additionally, another international study by Orford et al. about the experiences of family members of drug abusers found that family members experience emotional strain, such as aggressive relationships, conflict over money, and family life being threatened (Orford et al.). The result of this study reveals that drug abuse can have an extended effect on the relatives and the people around the person who abuses illicit substances.

Policy recommendations

The findings of this paper suggest that a stronger prevention program could be an effective way to stymie the spread of youth drug use in South Korea. A possible solution to fortify the prevention program is by enforcing evidence-based education. The International Standards on Drug Use Prevention, published by UNODC and WHO, emphasize the importance of evidence-based interventions, noting that such interventions are effective in preventing the non-medical use of prescription drugs, which is prevalent among youth (United Nations on Drugs and Crime & World Health Organization 2018). Accordingly, the Ministry of Education may consider implementing more interactive educational approaches, such as teaching students how to refuse drugs and respond to peer pressure, that go beyond merely delivering information. In addition, the International Standards on Drug Use Prevention state that community-based prevention is an effective way to deliver and sustain evidence-based prevention. Thus, South Korean policymakers may seek to expand the current community youth support centers through the Korea Youth Counseling & Welfare Institute to enhance the effectiveness of evidence-based prevention programs.

As one of the biggest factors contributing to youth drug use, academic pressure is another major aspect that drives adolescents into drug use. Providing adequate mental health support for youth may counter that academic pressure, potentially impeding the spread of youth drug use. Furthermore, alleviating the mental health crises could have extended effects, such as reduced suicide and depression rates that are prevalent among the youth population. One way to achieve this is by reinforcing the school counseling system. South Korean research by Kang and Kim in 2016 on help-seeking behaviors among South Korean adolescents revealed that factors such as negative perceptions of counselors, dissonance with counseling, and the belief that the problem is too trivial for counseling contribute to negative effects on help-seeking behaviors (Kang and Kim). Local offices of education and the Ministry of Education may attempt to address the factors identified in the research by promoting the effectiveness of counseling, reducing stigma around seeking counseling, and encouraging students to ask for help even when problems are trivial, before they become too severe. Schools may also independently implement more frequent mental health awareness education to support the efforts of local offices of education and the Ministry of Education.

Digital regulations and reinforcing cyber enforcement could be another way to counter youth drug use in South Korea. As discussed throughout the paper, digital drug transactions involving cryptocurrency, encrypted messages, and anonymous identity are extremely hard to identify and investigate. To surmount these difficulties, South Korean policymakers may consider cooperating with private messaging companies, such as Telegram, to help address the digital drug trade. Moreover, expanding the Narcotics Investigation Division or drug investigation squads may be another valuable consideration for policymakers. As technological innovations enabled drug distributors to operate more sophisticatedly, particularly in South Korea, the increase in the number of police units capable of dismantling such organizations became more relevant.

While providing adequate prevention education is imperative in impeding youth drug use, providing rehabilitation treatment and recovery services may be another way to thwart youth drug use in the long term. Since adolescents have a distinct brain structure and response to substances, policymakers may consider providing youth-specific treatments. In fact, the International Standards for the Treatment of Drug Use Disorders by the WHO recommends that adolescents could benefit from youth-specific treatments such as social skills training, family-based interventions, and psychoeducation. The paper states that these adolescent-targeted recovery services may allow children with drug disorders to develop self-control and decision-making skills (United Nations on Drugs and Crime & World Health Organization 2018). Such rehabilitation treatment may be especially effective in South Korea, as it has historically placed greater emphasis on punitive approaches than on rehabilitation systems. By reinforcing the recovery and rehabilitation systems, policymakers may expect to alleviate mental health problems and peer influences, ultimately reducing the recidivism rate among youth drug offenders.

Conclusion

This policy analysis reveals that the surging youth drug problem in South Korea cannot be reduced to a simple matter of individual choices. Instead, it is driven by a highly complex, interconnected relationship between vulnerable individuals and systemic factors. The findings of this paper go beyond surface-level decision-making to reveal the broader, structural pressures that push young people into unstable conditions, leading them to make dangerous decisions. The immense academic pressures, a hyper-connected digital market, and the quiet rise of prescription drug misuse are all working together to accelerate the crisis. This study also identified structural failures in South Korea's response to the problem, including insufficient prevention programs, lagging cyber regulations, and a lack of youth-specific rehabilitation. These findings suggest that a change in fundamental social structure may be needed to rectify the problem in the long term. Implementing policies such as stronger prevention education, cyber enforcement, and rehabilitation programs may be necessary to address the structural problems contributing to youth drug use in South Korea.

Works Cited

Attorney-General's Chambers of Singapore. "Misuse of Drugs Act 1973." 2026, https://sso.agc.gov.sg/Act/MDA1973.

Baek, Jin-Hee, et al. "The Study of Reasonable Management of Controlled Drugs through a Comparative Analysis of Management Guidelines both Domestic and Abroad. Journal of Korean Society of Health-System Pharmacists, vol. 30, no. 2, 2013, pp. 141-156, http://doi.org/10.32429/jkshp.2013.30.2.005.

Briere, Frederic N., et al. Adolescent illicit drug use and subsequent academic and psychosocial adjustment: An examination of socially mediated pathways. Drug and Alcohol Dependence, vol. 135, no. 1, 2014, pp. 45-51, https://doi.org/10.1016/j.drugalcdep.2013.10.029.

Friedman, Samuel R., et al. "Drug Arrests and Injection Drug Deterrence." American Journal of Public Health, vol. 101, no. 2, 2011, pp. 344-349, https://doi.org/10.2105/AJPH.2010.191759.

Kim, Dokyun and Na, Chongmin. The Effect of Rehabilitation Education for Drug Offenders on Recidivism. Korean Institute of Criminology and Justice, vol. 36, no. 1, 2025, https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artiId=ART003193301.

Kim, Jin Hee, et al. A case of methamphetamine intoxication in an adolescent. Pediatric Emergency Medicine Journal, vol. 10, no. 1, 2023, pp. 41-44, https://doi.org/10.22470/pemj.2022.00584.

Kim, Sang-Yoon, et al. "Narcotics information management system in South Korea: system development and innovation." BMC Health Services Research, vol. 23, no. 73, 2023, https://doi.org/10.1186/s12913-023-09060-z

Kang, Yeon Mi and Kim, Hee-Sue. Help - Seeking Behaviors among Korean adolescents: A Focus on barriers and crisis experiences. Journal of Educational Therapy Research, vol. 8, no. 2, 2016, pp. 237-252, https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artiId=ART002135714.

Kwon, Byunggeon. "Telegram 'Online Drug Enterprise' Dismantled … 57 Arrested Including 6 Ringleaders." The Asia Business Daily, 4 September 2025, https://view.asiae.co.kr/en/article/2025090414302316367.

Lee Jong-Woo and Noh Seung-Guk. "Time Series Analysis of the Correlation Between the Number of Drug Crime Arrests and Media Coverage for Enhancing Police Response to Drug Crimes." Korean Association of Public Safety and Criminal Justice Review, vol. 21, no. 6, 2023, pp. 13-21, https://doi.org/10.22678/JIC.2023.21.6.013.

Lee, Seung-kyu. "56.8 billion won drug ring: 57 arrested." The Chosun Daily, 4 September 2025, https://www.chosun.com/english/national-en/2025/09/04/357RY4OFGNGPNN7XYUCDAJLHGY/.

Lyoo, I. K., et al. Predisposition to and effects of methamphetamine use on the adolescent brain. Mol Psychiatry, vol. 20, no. 12, 2015, pp. 1516-1524, https://doi.org/10.1038/mp.2014.191.

Ministry of Education of the Republic of Korea. “Strengthening substance misuse prevention education in schools.” 2023, https://www.korea.kr/briefing/policyBriefingView.do?newsId=148909076.

Ministry of Health, Labour and Welfare of Japan. “No! Absolutely No! - Anti-Drug Abuse Campaign.” 2023, https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/kenkou_iryou/iyakuhin/yakubuturanyou/other/damezettai_r5.html.

OECD. “Inclusive and Sustainable Well-being in Korea: 30 Years of OECD Membership and Future Policy Opportunities.” OECD Publications, 2026, https://doi.org/10.1787/a8940343-en.

Orford, Jim, et al. The experiences of affected family members: A summary of two decades of qualitative research. Drugs: Education, Prevention and Policy, vol. 17, 2010, pp. 44-62, https://doi.org/10.3109/09687637.2010.514192.

Pasman, Emily, et al. Longitudinal associations between frequency and recency of nonmedical prescription stimulant use in adolescence and cocaine use in young adulthood. Drug and Alcohol Dependence, vol. 274, 2025, https://www.sciencedirect.com/science/article/abs/pii/S0376871625002133.

Salmanzadeh, Hamed, et al. Adolescent drug exposure: A review of evidence for the development of persistent changes in brain function. Brain Research Bulletin, vol. 156, 2020, pp. 105-117. http://doi.org/10.1016/j.brainresbull.2020.01.007.

Seo, Jeong-Cheol, et al. Prevalence and Comorbidities of Attention Deficit Hyperactivity Disorder Among Adults and Children/Adolescents in Korea. Clinical Psychopharmacology and Neuroscience, vol. 20, no. 1, 2022, pp. 126-134, https://www.kci.go.kr/kciportal/landing/article.kci?arti_id=ART002812054.

Supreme Prosecutors’ Office of the Republic of Korea. “2018 Drug crime white paper.” 2019, https://dl.nanet.go.kr/detail/MONO1201974910.

Supreme Prosecutors’ Office of the Republic of Korea. “2024 Drug crime white paper.” 2025, https://www.drugfree.or.kr/portal/kor/M467848284/board.do?deleteAt=N&act=detail&idx=cb00d1a0008a85e71a41b8741facbffe64094969be0404990586ee5017760acc.

United Nations Office on Drugs and Crime. “Synthetic drugs in East and Southeast Asia 2025.” 2025, https://www.unodc.org/roseap/uploads/documents/Publications/2025/Synthetic_Drugs_in_East_and_Southeast_Asia_2025.pdf.

United Nations Office on Drugs and Crime & World Health Organization. “International standards on drug use prevention (2nd ed.).” 2018, https://www.unodc.org/documents/prevention/UNODC-WHO_2018_prevention_standards_E.pdf.

United Nations Office on Drugs and Crime & World Health Organization. “International standards for the treatment of drug use disorders.” 2020, https://www.who.int/publications/i/item/international-standards-for-the-treatment-of-drug-use-disorders.

Rethinking the Dread - Student Attitudes toward Sociological Research Methods
By Shaan Kahlon

Sociology instructors often repeat a familiar assumption: students dread research methods. In "Take It or Leave It: Students' Attitudes about Research Methods," Allison Wisecup (2017) tests that belief directly by surveying sociology majors across sixteen departments. Her findings complicate the stereotype. Student attitudes are "lukewarm, at worst" (Wisecup 2017:73), and completing a methods course predicts greater confidence, though not necessarily greater interest. This essay summarizes Wisecup's central findings, evaluates her research design using the research process outlined in Chapter 2 of the textbook, and reflects on what both readings suggest about the value of methods training for students, citizens, and workers.

Wisecup measured the attitudes of 135 sociology majors across four dimensions: affect, cognitive competence, difficulty, and interest. Students who had completed a research methods course reported more positive attitudes and greater confidence in their abilities than students who had not taken the course. However, the course did not appear to change how difficult or interesting students found the subject. In other words, competence and curiosity did not automatically increase together. Wisecup suggests that learning about the complexity of research may make students more skilled while also making them more aware of the challenges involved. This finding changes how instructors might think about teaching methods. Rather than focusing only on reducing fear, they should also show students how research methods can be powerful and useful. I once thought of research methods as a set of rules, but after working with data in my nonprofit, I began to see how important they are for making informed decisions. Research methods can turn numbers into evidence that supports better choices. Wisecup's study also demonstrates how research methods work in practice. She surveyed sociology majors across multiple departments and states, then analyzed the results using statistical tests. Her design matched her research question because standardized surveys with Likert-scale items are useful for measuring attitudes across a large group. This approach allowed her to compare students at different institutions practically and economically.

Her study follows the research process described in Chapter 2. She began with a research question, reviewed the existing literature, formed four explicit hypotheses, and operationalized the broad concept of attitude into measurable dimensions. She then selected a sample, collected and analyzed data, and reported her results along with their limitations. Her discussion of weaknesses, including the low response rate and the limits of a cross-sectional design, strengthens the study because it makes clear what her findings can and cannot prove. One of the most important steps in research is sampling. If our sample isn't representative, we can't generalize our findings to a larger population. In Wisecup's case, her sample was mostly female, white, and consisted of juniors and seniors, which limits how far her findings can be applied. A better approach would be to use a longitudinal design that follows the same students over time, which would help address the problem of causation. Research is different from journalism or opinion writing because of its method and transparency. When we do research, we have to be

clear about our hypotheses, methods, and limitations, and we have to be willing to submit our work to peer review. This means that every claim we make can be checked against data, citations, or the original survey items.

Research is about submitting ourselves to procedures that are designed to catch our own errors. Understanding research methods is important not just for professionals, but for everyone. When we know how to evaluate research, we can make better decisions and be more critical of the information we're given. For instance, when we see a poll in the news, we should ask who was actually surveyed before trusting the results. When we hear a statistic, we should ask what it actually measures. And when we're told that one thing causes another, we should be careful not to assume that correlation implies causation. By understanding research methods, we can become more informed and critical thinkers, and that's essential for making good decisions in our personal and professional lives.

A citizen who understands representative data can tell a structural pattern of inequality from a vivid anecdote, which is precisely the distinction sociology exists to draw. Wisecup's finding that coursework builds competence makes me optimistic that these habits are teachable, even if no course ever makes the subject feel thrilling. Wisecup set out to test a piece of disciplinary folklore and found it mostly false. Sociology majors do not dread research methods. Their attitudes hover near neutral, and finishing a methods course leaves them liking the subject somewhat more and trusting their own skills considerably more, while their interest and their sense of the subject's difficulty stay put. Her study also models the research process Chapter 2 describes, down to the humility of its limitations section, and shows why systematic evidence differs from assertion. If a single course can raise competence without raising interest, the open question is how to teach methods so that capability and curiosity rise together. That question seems worth researching.

Works Cited

Wisecup, Allison K. 2017. “ Take It or Leave It: Students’ Attitudes about Research Methods.” Teaching Sociology 45(1):73–79.

SOC, by Witt et al. (2024)

When Should AI-Generated Content Be Labeled, and Who Is Responsible?
By Hongxuan Steven Liu

Background

Artificial intelligence has long been evaluated by its ability to imitate human behavior. One of the most influential benchmarks for this imitation is the Turing Test, which asks whether a machine can produce behavior that is "indistinguishable from that of a human" (Turing, 1950, p. 442). While early artificial intelligence systems focused mainly on symbolic reasoning and text-based tasks, recent advances in generative AI have expanded this imitation into images, audio, and video. These systems are now capable of producing media that closely resembles authentic human-created content. OpenAI's Sora, a generative video model that produces highly realistic short videos from text prompts, represents a major shift in how artificial media is created and perceived.

This level of realism is often celebrated as technological progress. Generative AI tools reduce production costs, increase efficiency, and expand creative possibilities for individuals and industries. However, the same realism that makes these tools powerful also introduces serious ethical and social risks. Legal scholars Chesney and Citron (2019) warn that synthetic media can be used to "deceive the public, undermine trust, and damage democratic institutions" (p. 1754). When AI-generated videos appear real, they can facilitate misinformation, fraud, and manipulation of public opinion. In response to these risks, labeling AI-generated content is often proposed as a solution. Yet labeling alone is not a simple or sufficient fix. Labels may be ignored, misunderstood, or inconsistently applied, raising deeper questions about responsibility and accountability in an AI-driven media environment.

This paper examines three central questions: when AI-generated content should be labeled, who should be responsible for that labeling, and how society can reduce the harms associated with highly realistic synthetic media. Using OpenAI's Sora as a case study, this paper argues that accountability must be shared among users, developers, platforms, and regulators. Rather than assigning responsibility to a single actor, effective governance requires coordinated action across stakeholders, with labeling prioritized in contexts where realism poses a genuine risk of deception or harm.

Case Study: AI-Generated Video and the Illusion of Authenticity

A widely circulated example of Sora's capabilities involved a short video depicting a small bunny jumping on a backyard trampoline on a sunny afternoon. The video featured realistic lighting, natural shadows, smooth motion, and framing consistent with casual smartphone footage. Although the content itself was harmless and playful, the version shared online did not include any visible AI-generated label. As a result, many viewers assumed the footage was real. One viewer commented, "This is the first time AI has ever gotten me," highlighting how convincingly the video mimicked authentic media.

While the subject matter was trivial, the implications are significant. Paris and Donovan (2019) argue that synthetic media becomes dangerous not because it is false, but because it is "believable enough to be taken as evidence" (p. 3). The bunny video demonstrates how easily AI-generated content can blend into everyday digital spaces without raising suspicion. Although a fictional animal may not cause harm, the same techniques applied to videos of real people, political figures, or breaking news events could mislead audiences and shape public perception. This case illustrates why labeling decisions should be based on context and potential harm rather than visual realism alone.

Creators and Users of AI-Generated Content

Creators who use tools such as Sora play an important role in how AI-generated content enters public spaces. When creators intentionally distribute unlabeled synthetic media in misleading contexts, they directly contribute to deception. However, many users engage with generative AI tools for creative experimentation or storytelling without malicious intent. Bender et al. (2021) note that AI systems are frequently used by individuals who "do not understand the limitations and downstream impacts of the systems they deploy" (p. 615).

Holding individual creators solely accountable ignores these knowledge gaps and the broader systems that shape AI use. While creators should disclose AI-generated content in sensitive or high-risk contexts, expecting users to self-regulate effectively is unrealistic. Ethical responsibility at the user level must therefore be shared with developers and platforms that design and distribute these tools.

Developers of Generative AI Systems

AI developers such as OpenAI occupy a central position in the accountability chain. Developers determine system capabilities, access, and safeguards, making their ethical responsibilities especially significant. Floridi et al. (2018) argue that responsible AI systems require "accountability and transparency as core ethical principles" (p. 693). In practice, this responsibility can include measures such as watermarking, metadata tagging, and default disclosure mechanisms.

However, developers also face limitations. Once AI-generated content leaves the original platform, developers lose control over how it is edited, shared, or repurposed. Additionally, overly restrictive safeguards could slow innovation or reduce the usefulness of AI tools. Raji et al. (2020) explain that accountability gaps arise because responsibility is often "diffused across complex AI supply chains" (p. 3). Developers are therefore essential actors, but they cannot bear full responsibility for AI-generated content alone.

Platforms Hosting AI-Generated Content

Social media platforms such as TikTok, Instagram, YouTube, and Rednote serve as the primary distribution channels for AI-generated media. These platforms already moderate content and control visibility through algorithms, positioning them as powerful actors in the labeling

debate. Gillespie (2018) describes platforms as "custodians of the internet" (p. 21), emphasizing their role in shaping what information is seen and trusted.

Many platforms have begun implementing AI labeling policies, particularly for realistically altered media. However, enforcement remains inconsistent, and economic incentives tied to engagement can conflict with strict moderation. Without clear standards and oversight, AI labels may be hidden, ignored, or unevenly applied. This highlights the need for coordination between platforms and regulators to ensure that labeling practices are meaningful rather than symbolic.

Regulators and Legal Frameworks

Regulators play a critical role in establishing legal standards that balance innovation with public safety. Governments have increasingly focused on disclosure requirements in high-risk contexts such as political advertising and journalism. These approaches reflect a growing recognition that not all AI-generated content poses equal risk.

At the same time, regulation faces evolving, day-to-day challenges. AI technologies evolve faster than laws can be written, and overly broad regulations risk stifling innovation. Chesney and Citron (2019) note that determining liability for synthetic media harm is complex due to the number of actors involved in its creation and distribution (p. 1762). Effective regulation must therefore prioritize high-impact uses of AI-generated media while allowing flexibility for creative and low-risk applications.

Audience and Viewer Responsibility

While the audience is often the most affected by AI-generated content, they also have the least control over how that content is created, labeled, or distributed. Viewers rely heavily on visual media to understand events and form opinions, frequently assuming that video footage reflects real situations. When AI-generated videos are not labeled, audiences may unknowingly accept fabricated or manipulated content as authentic. According to the Pew Research Center (2023), "Americans express low confidence in their ability to identify AI-generated media," indicating that most people are not well equipped to distinguish synthetic content from real footage.

At the same time, transparency alone does not guarantee protection from misinformation. Nyhan and Reifler (2010) found that attempts to correct false information can sometimes "reinforce misperceptions rather than reduce them" (p. 330). This means that even when audiences are informed that content may be misleading, initial impressions can continue to shape beliefs. As a result, expecting viewers to act as the primary defense against AI-generated deception is unrealistic.

This perspective reinforces the broader argument of the paper. While audiences benefit from labeling and transparency, they cannot reasonably serve as the main safeguard against deception. Due to the naturally unbalanced power dynamic between viewers and AI system

design, platform policies, and regulatory standards, responsibility must remain controlled among developers, platforms, and regulators.

Conclusion

As generative AI tools such as Sora continue to blur the boundary between real and artificial media, the ethical question of labeling becomes unavoidable. This paper has argued that AI-generated content should be labeled primarily in contexts where realism creates a meaningful risk of deception or harm, rather than in all creative or entertainment uses. Effective labeling practices depend not on a single solution, but on cooperation among users, developers, platforms, and regulators.

Labels alone cannot solve the broader challenge of trust in synthetic media. Transparency must be supported by ethical system design, consistent platform enforcement, public awareness, and adaptable regulation. When these elements work together, generative AI can remain a powerful and creative technology without undermining public confidence in the visual media people rely on to understand the world.

Work Cited

OpenAI. Sora: Creating Video from Text. OpenAI, 2024. https://www.openai.com/sora

Turing, Alan M. “Computing Machinery and Intelligence.” Mind, vol. 59, no. 236, 1950, pp. 433–460.

Federal Trade Commission. Consumer Alert: Deepfakes and Voice Cloning. FTC, 2023. https://www.ftc.gov

European Parliament. Artificial Intelligence Act: Ensuring Safe and Trustworthy AI. European Union, 2024. https://www.europarl.europa.eu

Chesney, Robert, and Danielle Citron. “Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security.” California Law Review, vol. 107, no. 6, 2019, pp. 1753–1820.

The Effects of Pressure During Competition and Whether Cognitive Reframing Techniques Influence Their Emotional Regulation and Confidence By Nitya Agrawal

Abstract

In the current study, we use qualitative methods to study female athletes aged 15 to 20 to understand the effects of pressure during sports competition and whether cognitive reframing techniques were used, and if they helped in their emotional regulation and confidence. Nine female athletes participated in our interviews, and the data were analysed using reflexive thematic analysis. We identified five overarching themes: competitive pressure as a double-edged experience, internal dialogue shapes competitive performance, cognitive reframing promotes emotional regulation, social support strengthens confidence, and female athletes experience unique social pressures. Our overall finding shows that cognitive reframing and supportive social relations play a key role in helping female athletes maintain confidence and deal with stressors during competitive situations. These observations may highlight the need for psychological training in youth sport to optimise support and nurture of youth athletes.

1. Introduction

The word ‘Sports' originates from the French word ‘desport,’ meaning leisure. It has been a part of our daily lives since prehistoric times. Women have participated in sports since ancient times, with the earliest evidence dating to Sparta and the Heraean Games in ancient Greece. Times changed, and participation rapidly declined due to patriarchal standards of the Medieval and Victorian periods. In modern times, Women officially debuted at the Paris Olympics in 1900. In India, it took women’s sport 29 more years for the formation of the Women’s Sports Association in Kolkata in 1929, the first establishment of its kind in India at that time.

Performance in any sport, while popularly linked to physical abilities, technical skills, and rigorous training, is also linked to psychological factors that influence an athlete’s mental state, like self-belief and emotional regulation. Albert Bandura, in his self-efficacy theory, proposes that self-belief about one’s capabilities influences one's motivation, performance, and persistence (Bandura 191-215). In the context of sports, we can say that athletes with strong self-efficacy are expected to perform better in long runs as they will approach each event with confidence and will have an easier time persevering through setbacks. Bandura expanded on his initial work on self-efficacy and added that it may play a crucial role in how we manage stress and adversity, factors that majorly influence sports (Bandura). In 1986, Robin S. Vealey proposed an interactional model of self-confidence, which was sport-specific. This model further highlights how sports confidence is crucial to performance in sports (Vealey 221–46). This evidence can be accumulated to claim that psychological processes have a definite role to play in sports performance.

Anxiety, a widely studied psychological experience, plays a major role in sports. In a situation where one’s performance can influence important tournaments and matches for themselves or the whole team, fear or worry of the unfavored outcome is common. In the context

of sports, Martens et al. propose a multidimensional construct for anxiety, wherein worries, negative expectations, and concerns about performance are categorised as Cognitive anxiety, and physiological symptoms like increased heart rate, muscle tension, etc., are categorised as Somatic anxiety. Anxiety and how athletes cope with it can hugely influence performance. In female athletes specifically, higher levels of worry, concentration disruption, and somatic anxiety are reported, making them more susceptible to performance inconsistency (Abrahamsen et al.). A recent review also revealed that for youth athletes specifically, performance anxiety remains a primary worry (Beenen et al., 127). Cumulatively, we observe how psychological factors can affect athletes and also show that a better understanding of how athletes deal with such factors is crucial to understanding performance in competitive sports.

To deal with these challenges, athletes employ psychological strategies to regulate emotions and maintain performance. One such strategy is the use of internal dialogue to regulate mindset and emotions during stressful moments in sports; this technique is also known as self-talk.

Hatzigeorgiadias et al. found improvements in concentration and confidence resulting in better performance due to positive self-talk (Hatzigeorgiadias et al., 348). A few other techniques of coping with performance anxiety can be to visualise oneself performing successfully in challenging situations and rehearse that mentally. Studies have also found that it is quite possible to identify negative thoughts and challenge them to change the mind to a more positive setting (Beck, 242-252). This is also supported by recent studies, which found that cognitive restructuring can help improve athletic performance and psychological functioning.

The environment surrounding the athletes is just as important as the environment within their minds. Self-perception, confidence in ability, and motivation are significantly influenced by the people around athletes, such as their parents, friends, teammates, and coaches. A recent systematic review of 29 studies by Gao et al. found that parental involvement can influence performance; excessive expectations from parents can influence the athlete and impact their performance (Gao et al.).

With such a multitude of factors affecting sports performance, it becomes a tricky but important challenge to study athletes' mental experiences; the experiences of youth female athletes warrant particular attention within this context. As Abrahamsen et al. found, female athletes experience heightened anxiety as compared to their counterparts; this prevalence is significant in female student athletes (Beisecker et al., 279).

Most of the existing research on athletes relies on quantitative methods that measure anxiety, confidence, or coping through standardised scales. The field has scarcely researched how young female athletes themselves interpret, experience, and manage competitive pressure in their everyday sporting lives. To address this gap, the present study adopts a qualitative approach to explore the experiences of female athletes aged 15 to 20 years.

By examining these issues through athletes' own perspectives, the study aims to contribute to a deeper understanding of the psychological experiences of young female athletes and the factors that shape their performance and well-being in competitive sport.

2. Methodology

2.1 Participants

A total of nine female athletes aged 15-20 participated in the interview. They represented a variety of competitive sports like football, tennis, badminton, and basketball. The experience in their respective sports ranged from around 2 years to 8 years.

Participants were recruited through purposive convenience sampling. The inclusion criteria for the study were such that individuals could participate if they:

a) Identified as female

b) Actively participated in competitive sports

c) Were willing to provide informed consent to participate in an audio-recorded interview.

2.2 Research Design

In this study, we employed a qualitative research design, utilising open-ended questions in semi-structured interviews to explore how female athletes experience pressure and regulate their emotions and confidence in a competitive setting. We employed a qualitative approach to understand participants' subjective experience, personal interpretations, and coping strategies.

2.3 Materials

The data was recorded in the form of audio recordings to the following 9 fixed open-ended questions, presented sequentially:

1. Please describe a time during a game when you felt intense pressure or anxiety.
2. What kind of thoughts go through your mind before or during important matches?
3. Does pressure or nervousness affect your performance on the court?
4. Do you react after making a mistake in the game?
5. Do you use positive self-talk, visualisation, or any other mental strategy to handle pressure? If yes, how?
6. Have you ever tried to change negative thoughts into more positive or motivating ones during competition? Please give an example
7. Do you think mindset affects athletic performance as much as physical ability? Why or why not?
8. What is the role of coaches, teammates, or parents in influencing your confidence during games?
9. Do you think female athletes experience unique pressures in the game? What kind of pressures?

Broadly, the above questions explored the following domains:

- Experience of pressure due to competitive sport
- Worries during competition
- Responses following a mistake/fault in the game

- Use of cognitive strategies to handle pressure
- Perceived role of external influence, like Coaches on self-confidence
- Perceived pressures unique to female athletes.

2.4 Procedure

The participants were recruited in line with the inclusion criteria, following which they provided informed consent for the video; all the personal information was anonymised. Participants were presented with the questions sequentially, and audio was recorded for each response. The total duration of the interview varied with respect to the person's depth of answers. No time constraints were presented to the interviewee.

We manually transcribed all the audio recordings and checked for errors to establish textual validity. Each participant was assigned a number to ensure anonymity.

2.5 Data Analysis

We analysed the interview transcripts using Reflexive Thematic Analysis (RTA) following the established six-phase framework by Braun & Clarke (2006, 2021):

1. Familiarising with the data through repeated reading
2. Identifying meaningful segments relevant to the research aim to generate initial codes.
3. Grouping related codes into preliminary themes
4. Reviewing the candidate themes across the dataset and refining them if needed
5. Defining and naming final themes
6. Making analytical narratives supported by relevant participant quotations

We did the whole analytical process using Microsoft Excel. Throughout the analysis, we kept revisiting the codes whenever needed to refine them. We focused on identifying shared meanings across the participants.

2.6 Ethics

The study was conducted as an independent student research project. Participation in the interview was voluntary, and informed consent was obtained before each interview. Participants had the option to withdraw from the study at any stage. All audio recordings were stored securely, and any identifying information was removed from transcripts.

3. Results

In this study, after transcription and necessary anonymisation, we used Reflexive Thematic Analysis (RTA) to review the transcripts across participants (Braun & Clarke, 2006, 2021). After analysis of nine interview transcripts, we found five overarching themes and eleven subthemes that explained the participants' responses. We will delve deeper into the themes described below in Table 1.

Table 1: Themes and Sub-themes.

Theme	Subthemes
1. Competitive pressure as a double-edged experience	Fear of failure; Pressure from expectations; Pressure enhancing performance
2. Internal dialogue shapes competitive performance	Self-doubt and overthinking; Confidence and self-belief
3. Cognitive reframing promotes emotional regulation	Positive self-talk; Viewing mistakes as temporary; Refocusing on the present
4. Social support strengthens confidence	Coaches; Parents; Teammates
5. Female athletes experience unique social pressures	Gender stereotypes; Pressure to prove competence

3.1 Competitive pressure as a double-edged experience

In the sample, all participants described feeling a sense of pressure during competitive situations. However, we observed that it was not always perceived as hurting performance. Participants reported that in certain situations, excessive pressure impaired performance, while moderate pressure increased motivation and focus.

We noticed that several of our participant athletes associate pressure with fear of failure and upsetting others. One subject with experience in tennis recalled:

"I was 5–love up… I became anxious about how bad it would look if I lost from there."Another Athlete who played a team sport mentioned:
"Everyone was depending on me, which made me really nervous. I kept thinking I might mess up"

Contrastingly, we observed several other athletes viewing pressure as a facilitator of performance. One participant with experience in playing badminton stated:

"Pressure initially makes me tense, but once the game starts, I can use that energy to sharpen my focus"

Hence, from our interviews we observe that participants often interpreted pressure as both having a positive or negative effect on their performance depending on how they cope with it.

3.2 Internal dialogue shapes competitive performance

In our study, internal dialogue was identified as a key factor that consistently influenced athletes' competitive performance. Throughout interviews, athletes shared that their thoughts before and during competition affected how they handled difficult situations, managed emotions,

and perceived their performance. Negative internal dialogue included worries about mistakes, expectations of failure, self-doubt, and comparisons to opponents.

One participant recalled:

"I would let that thought of 'I'm going to make it again' set in, and then I'd doubt every move"

Similarly, we observed other participants expressing a fear of disappointing their teammates or parents. These responses suggest that internal dialogue went beyond concerns just about the competition and often extended to meeting social and personal expectations.

Despite these reports, participants also described using more constructive internal dialogue to regulate and regain composure after mistakes. Positive internal dialogue was used as a tool to interrupt negative thoughts, restore confidence, and focus on the immediate competitive situation. One football athlete explained:

"I think about not letting fear get to me and control me… I faced tough situations before, so I belong here"

Hence, we observed that confidence wasn't reported as a fixed personal characteristic, but linked closely to athletes' internal dialogue throughout competition. These observations suggest that internal dialogue is an important factor that influences how athletes perceive competitive situations.

3.3 Cognitive reframing promotes emotional regulation

Similar to how we observed that for confidence, internal framing and dialogue are critical, we observed consistently in our dataset that cognitive reframing followed mistakes or heightened pressure situations.

In the dataset, we observed reframing statements like:

- Participants reminding themselves that mistakes are temporary
- Participants focusing on the next point
- Using breathing techniques like deep breathing to calm down before resetting mentally
- Use of positive self-talk
- Imagining oneself performing successfully

One participant who uses positive visualisation and self-talk to regulate their nerves said:

"I visualise successful plays, and tell myself that I've practised for this, and I should just trust my game"

We observed a trend of shifting attention outwards towards the game and the focus of the factors one can control. One participant recalled how they deal with mistakes:

"…very important to reassure yourself that it's a mistake, and you can, you know, play a good point. The next point…"

Hence, in our sample, we observed that for young female athletes playing competitive sports, cognitive reframing functioned as an important tool that they used to regulate negative emotions during the game and not let extreme emotions affect performance.

3.4 Social support strengthens confidence

In our sample, all participants focused on how their coaches, parents, or peers were an influential part of shaping their confidence in the game.

We observed that the role of parents was seen to be especially highlighted as providing emotional reassurance. One athlete who played tennis recalled her father's advice whenever she was trailing in a game:

"…whenever I would be 40-love down in a game, or two-love, or three-love down, and I was broken, I think he always told me that it's only up from here... you can always learn something or gain something from a match"

Another participant highlighted how her parent, who was themselves an athlete, supported her:

"Parents, both my mom and dad were very supportive, but especially my dad, because he was an athlete himself."

Coaches, on the other hand, were seen as people who hold the balance between encouragement and accountability w.r.t the athletes; they were also mentioned to be the ones to provide constructive feedback.

A participant mentioned:

"…very important, you know, to have a coach that is okay, and that is, you know, tough on you sometimes, because I think that helps you not become complacent in a sport…"

In our sample, athletes who played team sports like football highlighted the emotional value of their teammates. One football athlete stated:

"…teammates mean a lot to me, and when I feel down, even a small word from them lifts me."

In our observations of our sample dataset, social support from coaches, parents, and teammates/peers influence emotions of athletes and has a role in their mindset during competitive situations. Athletes in our sample also acknowledged that supportive individuals sometimes could increase pressure to perform, as they wouldn't want to disappoint them.

3.5 Female athletes experience unique social pressures

All participants in our sample agreed that they felt unique pressures as female athletes that their male counterparts wouldn't necessarily feel.

A repetitive theme we found was that our subjects felt the need to continuously prove competence in the sports of their choice to feel it was worth continuing. One participant mentioned:

"…constant pressure of wanting to prove that you know all the time that you spend in your sport is worth it"

Participants also referred to dealing with gender stereotypes, pressure of societal expectations, and even appearance-related judgments. One participant recalled how they are constantly compared to their male counterparts in the same sports:

"…pressure to prove themselves as equally capable as male counterparts) and they may also feel pressured due to stereotypes about women in sports…"

Physiological factors like menstruation were also mentioned as a key affecting factor to performance; one participant described their challenges as:

"…you still have that match on the same day. Even if you're dying with cramps, there's nothing you can do about it."

Despite such compounding challenges, a common theme observed across participants was that these experiences contribute to their resilience. One participant expressed:

"…never giving up has made me stronger and more confident in who I am today"

Another participant recalled how they were judged for both their appearance and performance and mentioned:

"…this pressure can also fuel resilience."

4. Discussion

In this study, we explored how female athletes aged 15 to 20 experience the effects of pressure during competition and whether cognitive reframing techniques influence their emotional regulation and confidence. Through Reflexive thematic analysis of the transcripts from the interviews with our nine female athletes, we identified five overarching themes:

1. Competitive pressure as a double-edged experience
2. Internal dialogue shapes competitive performance
3. Cognitive reframing promotes emotional regulation
4. Social support strengthens confidence
5. Female athletes experience unique social pressures

In our study, our observations suggest that while competitive pressure is always present in sports, our participants could regulate their emotions and maintain confidence in the game using cognitive reframing strategies. Our findings also highlighted certain challenges female athletes deal with in and out of the field. The major components of our observations are listed below:

4.1 Competitive Pressure as Both a Challenge and an Opportunity

In our sample, participants reported a dual role of competitive pressure; they stated feelings of nervousness, fear of failure, and concern about disappointing others before important competitions, which affects their in-game performance. This data aligns with Martens et al.'s multidimensional theory of competitive anxiety, which separates cognitive anxiety, somatic anxiety, and self-confidence (Martens et al). On the other hand, many participants described that moderate levels of pressure increased their motivation, concentration, and readiness to perform in a match. This is aligned with Jones, who emphasises the distinction of how athletes interpret

the anxiety symptoms either as facilitative or debilitative and the intensity of symptoms themselves (Jones, 449-78). Participants who perceived anxiety as readiness experienced a positive effect of feeling pressure. This adaptive appraisal of symptoms was observed when a few participants explained the pressure as evidence that they care about the sport

4.2. Central Role of Internal Dialogue

In our study, we observed that internal dialogue played an important role in emotional experiences and perceived performance during competitive situations. Participants reported worrying about their performance in the game and compared themselves to their opponents, fearing that they would disappoint peers, parents, and coaches. These worries were associated with reduced confidence and focus during competitive matches. Internal dialogue also played a positive role for many participants; they reported using positive self-talk to regain composure, regulate emotions, and maintain confidence and attention towards their sports match.

Our observations of participants being distracted by worries suggest that negative internal dialogue can interfere with confidence during competitions. This aligns with Eysenck, who proposed the Attentional Control Theory, stating that anxiety may shift attention away from task-relevant information and toward the perceived threat (Eysenck et al., 338).

Beck proposed the cognitive theory, which suggests that emotional responses are shaped by the individual's perception of the situation as compared to the actual situation (Beck). Our observations wherein participants use positive internal dialogue to overcome anxious or fearful situations can be explained by this theory. This implies that when athletes experience negative worries, using positive self-talk can help them regulate their worries and regain confidence and focus effectively.

In our study, we can say that confidence was observed as a dynamic construct that varied according to the situations experienced by the athletes. This aligns with Vealey, who conceptualized sports confidence as dynamic and situation-specific (Vealey 221).

Overall, our findings suggest that athletes in our sample perceive constructive internal dialogue as an important cognitive reframing strategy that can be employed effectively to manage competitive situations.

4.3 Cognitive Reframing as an Emotional Regulation Strategy

In our study, we found a very positive observation among our participants. We observed that almost every athlete described consciously changing negative thoughts and worries after some mistake or tense in-game situation into more constructive interpretations. They reported reminding themselves to focus on the next point in the game, trusting their preparations to regain confidence. This observation exemplifies how cognitive reappraisal, a form of emotion regulation, occurs in real-life situations (Gross 275; Gross 281).

These methods of emotion regulation have positive effects on athletes' performance, as reported previously by Hatzigeorgiadis et al. and Tod et al., who studied the positive influence of self-talk in athletic performances and confidence (Hatzigeorgiadis et al. 348; Tod et al. 666).

The positive effect of cognitive reframing noticed in our data is also in line with Tóth et al. (Tóth et al.). An interesting thing to note here is that, unlike Toth's study, where participants received formal psychological therapy, participants in this study employed similar techniques without any intervention.

4.4 Social Support as a Protective Factor

We observed that coaches, parents,s and peers, or teammates, influenced the confidence of the athlete. In our dataset, we observed parents frequently provided reassurance, motivation, and positive speech following a mistake in-game, coaches frequently were assigned a balancing role to help athletes maintain perspective, and teammates supported each other during stressful situations. These observations are in line with a recent work involving the role of parental involvement in youth sport by Gao et al.

Contrastingly, participants also acknowledged that supportive individuals often put them under pressure to perform so that they don't disappoint their social supports, like parents, coaches, or teammates. This shows that social support had a complex role in sports.

4.5 Gender-Specific Psychological Pressures

Our study was focused on just female athletes, and we observed that they experienced unique pressures or stressors for their sports, not just in-game but in day-to-day life in general, which their male counterparts may not need to deal with at all. They described needing to fight against stereotypes and biases on performance, skill, and even participation in sports; they mentioned how they felt the need to be as good as their male counterparts in performance or how they were mocked for their appearance. Certain participants also highlighted physiological factors like menstruation and how it influences their performance in sports beyond their control.

These observations show that female experiences of psychological stressors is unique, and these unique factors can have an effect on their mental health and, as such, should be studied. This is in line with the observation by Perry et al., who argued that female athletes' mental health has often been examined through issues like eating disorders while ignoring confidence and identity factors (Perry et al.). These observations are also in line with Rice et al., who reported that female athletes experience higher levels of stressors (Rice et al. 722–30).

We observed that for most of the participants, regardless of the negative effects of the constant stressors, it often contributed to adding resilience and increased their commitment to the sport.

Our study helps acquire a qualitative perspective of previous literature that had quantitative findings. This qualitative account will help to understand these issues about female athletes and athletes in general from a better point of view.

5.0 Limitations

In our study, there were a few limitations that should be addressed and kept in mind while evaluating our results and comparing them to existing literature. Future studies should focus on a

more diverse set of participants with a larger number of samples across different competitive levels and cultural contexts. In our study, we had only nine participants, which limits the generalisation of our findings to the population. Our experimental design had pre-decided questions exploring our areas of interest; no follow-up questions were asked based on the participants' answers, which prevented any deeper probing.

6. Conclusion

Our observation from our sample dataset shows that competitive pressure in the context of sports for female athletes aged 15 to 20 is a unique experience shaped by multiple factors like social supports, cognitive framing, and emotion regulation strategies, to name a few. Even more, we observed that competitive pressure can have a dual role where it influences the athletes' in-game performance positively or negatively. We observed that female athletes constantly deal with this pressure using cognitive reframing techniques and maintain their emotional status and confidence throughout changing situations of the game. We also saw the important role of social supports like parents, teammates, and coaches who help the athlete deal with the competitive pressure, but also increase the pressure on the athlete to perform in the game. We observed that female athletes face certain stereotypes and unique challenges, but using cognitive reframing and being in a supportive environment, they are resilient and confident. Our study contributes to the growing qualitative literature on sport psychology and highlights the importance of integrating psychological skills training into athlete development programmes, and highlights the unique challenges faced by female athletes.

Works Cited

Abrahamsen, Fredrik E., Glenn C. Roberts, and Anne Marte Pensgaard. "Achievement Goals and Gender Effects on Multidimensional Anxiety in National Elite Sport." Psychology of Sport and Exercise, vol. 9, no. 4, 2008, pp. 449–464. https://doi.org/10.1016/j.psychsport.2007.06.005.

American Psychological Association. Ethical Principles of Psychologists and Code of Conduct. American Psychological Association, 2017. https://www.apa.org/ethics/code.

Bandura, Albert. "Self-Efficacy: Toward a Unifying Theory of Behavioral Change." Psychological Review, vol. 84, no. 2, 1977, pp. 191–215. https://doi.org/10.1037/0033-295X.84.2.191.

Bandura, Albert. Self-Efficacy: The Exercise of Control. W. H. Freeman, 1997.

Beck, Aaron T. Cognitive Therapy and the Emotional Disorders. International Universities Press, 1976.

Beisecker, Laura, et al. "Depression, Anxiety and Stress among Female Student-Athletes: A Systematic Review and Meta-Analysis." British Journal of Sports Medicine, vol. 58, no. 5, 2024, pp. 278–285. 10.1136/bjsports-2023-107328 .

Beenen, K. T., J. A. Vosters, and D. R. Patel. "Sport-Related Performance Anxiety in Young Athletes: A Clinical Practice Review." Translational Pediatrics, vol. 14, no. 1, 2025, pp. 127–138. https://doi.org/10.21037/tp-24-258.

Braun, Virginia, and Victoria Clarke. "Using Thematic Analysis in Psychology." Qualitative Research in Psychology, vol. 3, no. 2, 2006, pp. 77–101. https://doi.org/10.1191/1478088706qp063oa.

Braun, Virginia, and Victoria Clarke. "Reflecting on Reflexive Thematic Analysis." Qualitative Research in Sport, Exercise and Health, vol. 11, no. 4, 2019, pp. 589–597. https://doi.org/10.1080/2159676X.2019.1628806.

Braun, Virginia, and Victoria Clarke. "One Size Fits All? What Counts as Quality Practice in (Reflexive) Thematic Analysis?" Qualitative Research in Psychology, vol. 18, no. 3, 2021, pp. 328–352. https://doi.org/10.1080/14780887.2020.1769238.

Creswell, John W., and Cheryl N. Poth. Qualitative Inquiry and Research Design: Choosing among Five Approaches. 4th ed., SAGE Publications, 2018.

Eysenck, Michael W., Nazanin Derakshan, Rita Santos, and Manuel G. Calvo. "Anxiety and Cognitive Performance: Attentional Control Theory." Emotion, vol. 7, no. 2, 2007, pp. 336–353. https://doi.org/10.1037/1528-3542.7.2.336.

Gao, Zhen, et al. "The Role of Parents in the Motivation of Young Athletes: A Systematic Review." Frontiers in Psychology, vol. 14, 2024, article 1291711. https://doi.org/10.3389/fpsyg.2023.1291711.

Gross, James J. "The Emerging Field of Emotion Regulation: An Integrative Review." Review of General Psychology, vol. 2, no. 3, 1998, pp. 271–299. https://doi.org/10.1037/1089-2680.2.3.271.

Gross, James J. “Emotion Regulation: Affective, Cognitive, and Social Consequences.” Psychophysiology, vol. 39, no. 3, 2002, pp. 281–291. https://doi.org/10.1017/S0048577201393198.

Hatzigeorgiadis, Antonis, et al. “Self-Talk and Sports Performance: A Meta-Analysis.” Perspectives on Psychological Science, vol. 6, no. 4, 2011, pp. 348–356. https://doi.org/10.1177/1745691611413136.

Jones, Graham. “More than Just a Game: Research Developments and Issues in Competitive Anxiety in Sport.” British Journal of Psychology, vol. 86, no. 4, 1995, pp. 449–478. https://doi.org/10.1111/j.2044-8295.1995.tb02565.x.

Martens, Rainer, Robin S. Vealey, and Damon Burton. Competitive Anxiety in Sport. Human Kinetics, 1990.

Perry, Christopher, et al. “Mental Health and Elite Female Athletes: A Scoping Review.” Psychology of Sport and Exercise, vol. 56, 2021, article 101961. https://doi.org/10.1016/j.psychsport.2021.101961.

Rice, Simon M., et al. “Determinants of Anxiety in Elite Athletes: A Systematic Review and Meta-Analysis.” British Journal of Sports Medicine, vol. 53, no. 11, 2019, pp. 722–730. https://doi.org/10.1136/bjsports-2019-100620.

Tod, David, John Hardy, and Emily J. Oliver. “Effects of Self-Talk: A Systematic Review.” Journal of Sport & Exercise Psychology, vol. 33, no. 5, 2011, pp. 666–687. https://doi.org/10.1123/jsep.33.5.666.

Tóth, Réka, et al. “The Effectiveness of Rational Emotive Behavior Therapy (REBT) and Mindfulness-Based Intervention (MBI) on Psychological, Physiological and Executive Functions as a Proxy for Sports Performance.” BMC Psychology, vol. 11, 2023, article 442. https://doi.org/10.1186/s40359-023-01486-8.

Vealey, Robin S. “Conceptualization of Sport-Confidence and Competitive Orientation: Preliminary Investigation and Instrument Development.” Journal of Sport Psychology, vol. 8, no. 3, 1986, pp. 221–246. https://doi.org/10.1123/jsp.8.3.221.

Bridging the Urban Divide By Dhiaan Sheth

Introduction

Residential inequality across socio-economic groups is a major problem across urban hubs around the world. This type of inequality is essentially harmful as it involves the living conditions of people from different classes, races and ethnicities. It is also particularly cruel as it reflects the cycle of poverty; where it gets practically impossible for low-income households to exit the vicious cycle of household inequality. This theme is a niche section of developmental economics. Developmental economics is particularly interesting as it offers both macroeconomic and microeconomic aspects. To reduce the problem of socio-economic segregation, a country can adopt a number of policy measures. However, the challenge arises in identifying a context-specific policy that would reduce inequality in the urban region. The background attempts to cover the problem, significance and abstract theme of this research paper while the literature review analyzes the current literature on the topic. The argument addresses the gap in the literature and offers policy measures according to geographical region.

Background

Residential inequality across socio-economic groups plays an important role in the geographical and overall dynamics of an urban region. The central conflict surrounded the fact that development in these major regions was vastly unequal. This leads to great contrasts in urban infrastructure, worsening the impact of inequality in a city. It also introduces a paradox where the rich and the poor live in the same urban region, however, their access to services, education, and basic living standards differ greatly. This leads to a vicious cycle of systematic exclusion. Socio-economic segregation would lead to inequality based on public resources which would reinforce the poverty of the low-income groups.

This research theme is significant for a number of socio-economic reasons. Comprehending the patterns and the relation between residential inequality and socio-economic groups is essential for the implication of public policies. It helps governments choose the right policy measure to prevent worsening of segregation in the urban region. Additionally, research also highlights how socio-economic segregation varies between different historical timelines and geographical borders. It also provides insight into cultural mindsets and social conditions of households and communities. Moreover, high-density poverty also reduces economic growth and the macroeconomic goals of the country. Research suggests that such segregation reduces human capital externalities.

The abstract theme of this research paper is residential inequality across different socio-economic groups. It attempts to emphasize on what factors influence the variety and differences in geographical inequality in major cities and urban hubs as well as what policies could be implemented to reduce it.

Thematic

This research paper lies in the general domain of developmental economics. Developmental economics refers to a niche part of the field of economics that mainly focuses on fiscal, social conditions in middle or low-income countries. Within developmental economics, this research paper attempts to understand residential and income inequality in relation to socio-economic stratification. Socio-economic segregation refers to the uneven distribution of different occupational or income groups across residential neighbourhoods of a city or an urban region (Iceland & Wilkes, 2006). Income inequality was defined as the unequal distribution of income between people or households (Tammaru et al., 2020). This, however, introduces the question of how distribution of inequality and segregation in the city is measured. The Gini Index mathematically compares how much the country's wealth distribution shifts from an equal wealth distribution and, when displayed as percentages, 0 suggesting complete equality and 100 showing complete inequality (Tammaru et al., 2020). The Dissimilarity index is a mathematical description of segregation in an urban region. It, too, goes from a score of 0 to 100 and represents the percentage of the number of people that must shift neighbourhoods for the city to be perfectly segregated. A score under 20 suggests good segregation while over 40 implies that there are huge gaps (Tammaru et al., 2020).

Historical Discourse

Initially, in 1975, (Morgan, 1975) summarised two main reasons for socio-economic segregation at the time: settlement size and the proportion of males employed in the professional and managerial occupations. These ideas were further expanded in later years. In 1999, (Leibbrandt et al., n.d.) discovered that wage income was the most influential variable that impacted the Gini coefficient in South Africa in their study of 'Understanding Contemporary Household Inequality in South Africa.' Their study reinforced the idea that income dynamics with members of the household unemployed leads to crowding below the poverty line. Later, in 2006, (Iceland & Wilkes, 2006) investigated socioeconomic status, residential segregation and race in America. In their paper, they concluded that residential patterns are strongly correlated to socio-economic status between different races. This idea was expanded upon by (Tammaru et al., 2020), in 2020, predicting that there would be a time lag between a change in income inequality and residential segregation. According to their research, they suggested that it would take approximately ten years for the economy to adjust to the new income adjustments. The study also stated that, in most cases, income inequality in capital cities' as well as urban areas is higher than the national average across the country. Furthermore, in 2021, (Van Ham et al., 2021) explained the increase in residential segregation due to increasing inequality leading to upgrades in some neighbourhoods while others downgrade. This would result in a gap between different neighborhoods of the same urban region and lead to widespread residential inequality. However, their study also suggested that the magnitude of segregation could fall, even with higher income inequality, as a result of selective mobility and gentrification; where high income groups shift to low income areas. This was referred to as the segregation paradox. This is one main reason for the time gap.

Contemporary Debate

In contemporary discourse, studies have progressed and improved with time and data. The previous results have been explained and also given more credibility through further research. Firstly, the paper, “Does Socioeconomic Status Matter? Race, Class, and Residential Segregation" by John Iceland and Rima Wilkes focuses on residential inequality in the country of the United States of America. The paper highlights the spatial assimilation theory; which implies social differences result in geographical segregation. The paper discovered that, across all socioeconomic status levels, African-Americans were highly segregated from whites. On the other hand, socio-economic status played a more influential role for Hispanics and Asians. This was proved by the fact that there was less segregation between high social status Asians and Hispanics along with whites (Iceland & Wilkes, 2006). Another US-based study, “Economic Segregation and Urban Growth" by Jing Li emphasizes on MSAs (Metropolitan Statistical Areas) and makes use of census data to investigate the macroeconomic impact of segregation in the country. His key finding was the negative cause and effect relation between urban growth and socio-economic segregation (Li, n.d.). The academic book "Urban Socio-Economic Segregation and Income Inequality: A Global Perspective" explored inequality based on social status from a global standpoint. The study helped to differentiate the segregation of people based on the countries’ development. In high income countries, which include countries from North America and Europe, socio-economic segregation is highly prevalent. High-income households move closer to the center of the city while low income households are pushed further out. Tokyo, being the exception, sees very little socio-economic segregation as a result of low income inequality, public policy, etc. On the contrary, middle-income countries see the richer shift towards isolation in the outskirts of the city into gated communities. Finally, according to the study, Mumbai, too, exhibits its own unique form of segregation with high social class being densely packed in the south. The spatial sorting also is deeply influenced by ethnicity, religion and caste, as commonly segregated across India, in the urban city (Van Ham et al., 2021).

Gap

With the current access to studies based on socio-economic segregation and residential inequality, there arises the question on which government policies could cause significant improvement to this problem. Given this interesting discourse on this problem, it would be useful to look into how different housing or city planning policies can be leveraged to reduce residential segregation. Moreover, it would also be helpful to look at different instances where government policies successfully reduced this segregation and benefitted the economy. Literature has produced a range of information on how people are separated by money and social status. However, there is little on how different government policies work compared to each other. Public policy instruments are used in different national contexts and research must figure out which ones are the most effective.

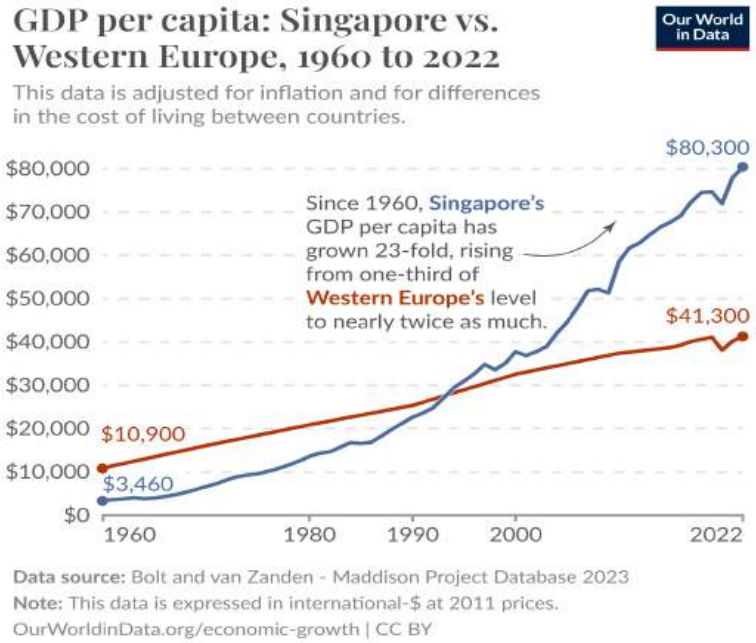
Research Question

The research question that this study mainly attempts to focus on is "How does socio-economic stratification shape the effectiveness of urban housing and development policies in reducing residential segregation?"

Argument

True spatial equity can not be achieved through passive deregulation; it requires interventions that are specific to the type of segregation, horizontal or vertical, that dominates a given urban context. Context-specific government policy has, in practice, reduced residential inequality in cities such as Singapore, Mumbai, and Tokyo, but the policies used differed based on ethnicity and class mixing in Singapore, income in Japan, and migrant exclusion in India each demanded a different instrument.

Firstly, socio-economic mixing and government spending on improving old neighbourhoods would significantly reduce socio-economic segregation. Intermingling between different socio-economic groups would reduce high concentration of the same class, race or ethnicity living together. Singapore is a key example that highlights how mixing and rejuvenation of old neighbourhoods would be practically successful. The study, (di Mauro, n.d.), found that mixing flat sizes within the same residential areas, renovating deteriorating neighborhoods to keep up with modern standards, and well-developed public infrastructure would significantly reduce the levels of segregation. In his study, di Mauro found that more varied groups of people living in the same geographical region through this public policy, segregation would automatically reduce as a result of this mixing.



The graph shows how Singapore's GDP per capita grew significantly faster than other countries. This is a positive benefit of good relations between the main ethnic groups in the country (di Mauro, n.d.). However, there is a short-coming with this theory. The amount of time taken between the initial spending and the actual impact is large. Hence, it is a long-term goal instead of a short-term one (di Mauro, n.d.).

In addition, deregulation is another public policy that could potentially reduce socio-economic segregation. Deregulation would stimulate the economy; promoting investment into urban redevelopment. It also plays a role in social and spatial distribution (Van Ham et al., 2021). An important instance of where deregulation was used as a policy against segregation was in Japan. According to the study, (Van Ham et al., 2021), the policy significantly changed urban development in the city, majorly near the center. They also acknowledged the fact that deregulation reduced horizontal segregation as Japan has low income inequality. Horizontal segregation is segregation based on social barriers. The higher-class people would find residence in high-end towers and newer residential developments. There would be less importance on race, ethnicity or religion. However, with people getting segregated based on class, vertical segregation would increase. Vertical segregation is based on income level and class (Marcińczak, S., & Hess, D. B, 2020). To solve this problem, the country must adopt other policies to reduce this type of segregation. Overall, deregulation would also develop the urban region and improve the economy's position.

Finally, a scheme that has worked to reduce socio-economic segregation in India is the "Affordable Rental Housing Complexes (ARHCs) for Urban Migrants." It is a migrant-targeted desegregation to stop poor, out-of-state migrant workers from being pushed into slum areas; the government created the Affordable Rental Housing Complexes (ARHC) scheme. They do this in two main ways: turning thousands of government-funded, vacant houses in cities into affordable rental complexes and encouraging private and public groups to build, run, and manage rental housing on their own unused land near industrial sites. This approach places low-income workers directly in commercial and institutional areas (ARHCs, n.d.). Hence, it would reduce the concentration of lower-class workers in residential regions. It also reduces segregation as the migrant workers are pulled higher up from the poverty line. The drawback of this policy measure is that there could be asymmetric information between the government and the migrants. A lack of information would render the scheme useless. However, an easy fix is to spread awareness about such camps and residential opportunities.

Comparing these policies reveals a pattern: public spending on redistribution (Singapore, India) targets horizontal segregation, while market-based deregulation (Japan) acts faster but shifts segregation onto a vertical axis instead of eliminating it. This connects back to (Van Ham et al., 2021) segregation paradox; overall segregation can fall while inequality remains, risking re-emergence in a different way.

To summarise, there are many different policy measures a country can adopt and implement to reduce socio-economic segregation. However, the crux of the problem arises that segregation could be based on class, race, ethnicity and a variety of other reasons. Moreover,

policy measures which may have worked in one country, may not in another; it is not generic. The solution is to identify the specific policies that would practically work to reduce residential inequality in the country.

Conclusion

This paper attempted to study how socio-economic stratification shapes the effectiveness of development policy in reducing residential segregation. Across the three cases, segregation had many different causes: Singapore's being ethnic and class concentration within neighbourhoods, Japan's from income-driven sorting, and India's from the exclusion of migrant workers. This confirms the opening claim: effectiveness depends less on theoretical solutions than on context-specific policy measures that take into account the socio-economic situation in the country. For example, when the government helps to redistribute income, it fixes the problems between groups slowly but surely. On the other hand, when markets are deregulated they fix these problems faster. This doesn't actually fix the problem of inequality. This matches what (Van Ham et al., 2021) discovered about the segregation paradox.

The implication is that policy effectiveness is not simply a matter of fitting policy to context in general, but of identifying the specific cause driving segregation in a given city before selecting an instrument. We only looked at three cases so future studies should try this framework in countries where many things cause segregation at the time.

Works Cited

di Mauro, B. W. (n.d.). Building a Cohesive Society: The Case of Singapore's Housing Policies.

Heshmati, A., Maasoumi, E., & Wan, G. (Eds.). (2015). Poverty Reduction Policies and Practices in Developing Asia. Springer Singapore. https://doi.org/10.1007/978-981-287-420-7

Iceland, J., & Wilkes, R. (2006). Does Socioeconomic Status Matter? Race, Class, and Residential Segregation. Social Problems, 53(2), 248–273. https://doi.org/10.1525/sp.2006.53.2.248

Leibbrandt, M., Bhorat, H., & Woolard, I. (n.d.). Contemporary Household Inequality in South Africa.

Li, J. (n.d.). Economic Segregation and Urban Growth.

Morgan, B. S. (1975). The Segregation of Socio-economic Groups in Urban Areas: A Comparative Analysis. Urban Studies, 12(1), 47–60. https://doi.org/10.1080/00420987520080041

Tammaru, T., Marcin'czak, S., Aunap, R., Van Ham, M., & Janssen, H. (2020). Relationship between income inequality and residential segregation of socioeconomic groups. Regional Studies, 54(4), 450–461. https://doi.org/10.1080/00343404.2018.1540035

Van Ham, M., Tammaru, T., Ubarevičienė, R., & Janssen, H. (Eds.). (2021). Urban Socio-Economic Segregation and Income Inequality: A Global Perspective. Springer International Publishing. https://doi.org/10.1007/978-3-030-64569-4

Surface-Level Friendships in Adolescence: Psychological, Digital, and Sociocultural Drivers and Scaffolding Intimacy through Mixed-Methods Investigation

By Tae Kim

Abstract

Adolescents increasingly report friendships that are abundant in contact yet bereft of emotional depth—a phenomenon often labeled "surface-level" or "situational" friendships. Drawing on attachment theory, affordance theory, and sociocultural perspectives, we conducted a three-phase mixed-methods investigation across the United States, South Korea, and Brazil. In Study 1 (N = 612, ages 13–18), structural equation modeling revealed that attachment insecurity, predominance of public digital communication, and endorsement of emotional-restraint norms each predicted lower scores on a newly developed Friendship Depth Index, which in turn was strongly associated with elevated loneliness and depressive symptoms. Study 2's ethnography and micro-interactional analysis (≈60 adolescents) documented how humor redirects, emoji deflections, and channel-switching routinely curtailed deeper disclosure, whereas private messaging and nonverbal cues (lowered voice, proximity) facilitated intimacy. In Study 3 (n = 72 low-depth teens), both a structured, in-person peer-sharing workshop and a moderated digital "intimacy sandbox" produced significant gains in friendship depth and perceived connectedness, with the workshop showing more sustained effects. These findings elucidate how psychological vulnerabilities, digital architectures, and cultural scripts converge to throttle adolescent intimacy—and demonstrate that targeted, scaffolded environments can restore relational depth, offering actionable pathways for educators, clinicians, and platform designers.

1. Background

Adolescence is a developmental epoch during which peer relationships scaffold identity consolidation, emotion regulation, and trajectories of mental health. Paradoxically, this same period is now characterized by unprecedented opportunities for contact—ubiquitous connectivity, dense online networks, continuous micro-interactions—yet rising reports of felt loneliness and emotional unsupportedness among young people. Across qualitative narratives and emerging survey datasets, a recurrent pattern surfaces: surface-level ("situational") friendships. These ties are marked by frequent, amicable exchanges but minimal reciprocal self-disclosure, limited expectation of support, and a tacit agreement to keep vulnerability off the table. In Korean youth slang, this relational modality is encapsulated by 겉친 (geot-chin); analogous labels and experiences are evident globally.

Functionally, such friendships satisfy everyday sociability—greetings in hallways, meme sharing, coordinated selfies, collaborative gaming. However, when adolescents confront psychological distress or require substantive guidance, these relationships frequently prove inadequate. The outcome is a disjuncture between networked visibility (others see me, I am "connected") and felt connectedness (others know me, I feel supported). The public health stakes are nontrivial: friendship quality—not mere quantity—is robustly tied to depression, loneliness,

and life satisfaction in adolescence (Parker and Asher). Understanding why relational depth is throttled, and how to restore safe vulnerability, is therefore a developmental and clinical imperative.
Three literatures illuminate fragments of this puzzle:

1. Psychological Dispositions – Insecure attachment, fear of rejection, social anxiety, and alexithymia reduce adolescents' propensity to seek support or disclose emotions to peers (Bowlby; Bagby et al.).
2. Behavioral Ecologies & Digital Affordances – Social media platforms architect interactions toward breadth over depth (boyd 39–58): always-on, algorithmically curated spaces that reward performative positivity, rapid exchange, and weak-tie maintenance rather than sustained, dyadic dialogue.
3. Sociocultural Norms & Peer Scripts – Gendered expectations of stoicism, collectivist imperatives of harmony/face-saving, and peer cultures that valorize irony or detachment stigmatize overt emotional expression and normalize restraint.

While each strand has been interrogated in isolation, the integrated circuitry by which psychological vulnerabilities, platform affordances, and sociocultural scripts co-produce and stabilize surface-level friendship patterns remains under-theorized. Moreover, interventions explicitly engineered to lower emotional barriers and reinvigorate intimacy within adolescent peer groups are rare and seldom evaluated empirically.

This program of research addresses these lacunae through three aims: (1) construct an integrative conceptual model linking attachment processes, platform affordances, and sociocultural normativity to the emergence and maintenance of surface-level friendships; (2) empirically test this model using a mixed-methods design that combines a cross-sectional, cross-cultural survey (~N = 600) with ethnographic and micro-interactional analyses of on- and offline peer groups; and (3) pilot and evaluate two preventive/therapeutic interventions—a structured peer-sharing workshop and a moderated digital "intimacy sandbox"—to determine whether engineered contexts that scaffold gradual disclosure can enhance perceived connectedness, emotional support, and friendship quality. Through this multi-level approach, the project reframes adolescent connectedness as a matter of relational texture, not merely contact frequency, and seeks evidence-based strategies to restore communicative depth in digitally saturated youth ecologies.

2. Literature Review

2.1 Defining Surface-Level Friendship in Adolescence

Surface-level (or situational) friendships are characterized by: (a) high frequency, low-intensity interaction; (b) positive but performative affect; (c) limited mutual self-disclosure; and (d) low expectations of instrumental or emotional support. They differ from antagonistic or

toxic ties: the issue is not hostility but mutual circumscription of vulnerability. Conceptually, these relationships sit near the outer rings of Social Penetration Theory's "onion" (Altman and Taylor), where breadth of topics may exist without depth. Unlike transient acquaintanceships, however, surface-level friendships often involve ongoing contact and embeddedness in the same peer ecology (classroom, online community), making their superficiality psychologically salient.

2.2 Psychological Dispositions

1. Attachment Insecurity & Support-Seeking

Adolescents with anxious or avoidant attachment history exhibit lower trust and heightened fear of rejection, dampening help-seeking and disclosure (Bowlby). Anticipated rejection or misattunement leads to strategic self-protection—keeping conversations safe, avoiding topics that could expose need. Over time, these strategies maintain shallow ties and confirm negative relational expectations.

2. Fear of Vulnerability & Social Evaluation

Peer approval peaks in adolescence; thus, emotional candor feels reputationally risky. Teens may equate openness with burdening others or appearing "dramatic." Males, in particular, often internalize norms linking emotional restraint to strength, compounding suppression.

3. Alexithymia & Emotion Regulation Difficulties:

Some youth have difficulty identifying and articulating internal states (Bagby et al. 23–32). Even when wanting depth, they may lack the vocabulary or confidence to share, defaulting to surface interaction. Excessive expressive suppression with peers correlates with poorer psychosocial outcomes (Gross and John 348–62) and reduced friendship satisfaction.

2.3 Behavioral Ecologies: Digital Communication Patterns

1.Affordances of Networked Platforms

Persistence, scalability, searchability, and replicability shape how adolescents present themselves (boys 39–58). Public/semi-public audiences incentivize highlight reels and positive curation. Algorithmic feeds privilege quick, visually engaging content over nuanced narrative sharing.

2. Breadth over Depth

Social media expands weak ties (bridging social capital) more than strong ties (bonding social capital) (Putnam). Group chats and comment threads produce continuous contact but often superficial exchange. Multitasking and fragmented attention curb the possibility of deep, sustained dialogue.

3. Performative Norms & Interaction Scripts

The etiquette of liking, emoji-reacting, and brief replies maintains social cohesion but devalues substantive disclosure. “Don’t kill the vibe” becomes an implicit rule, discouraging introductions of serious topics.

2.4 Sociocultural Norms and Peer Contagion

1. Cultural Scripts of Emotional Expression:

In collectivist contexts, protecting group harmony and saving face can stigmatize overt displays of negative emotion (Markus and Kitayama 224–53). Gendered socialization (e.g., male stoicism) further narrows the acceptable emotional repertoire in friendships.

2.Peer Group Norms & Contagion:

Behavior spreads within peer networks (Dishion and Tipsord 189–214). If a group models irony, banter, and emotional distance, members conform to avoid social penalties. Conversely, one or two peers modeling safe disclosure can shift norms, suggesting malleability with targeted interventions.

2.5 Consequences for Well-Being and Development

1. Perceived Connectedness vs. Networked Visibility:

Teens embedded in surface-level networks report feeling “known about” but not “known.” High contact without depth is linked to loneliness and lower life satisfaction.

2. Mental Health Risks:

Poor-quality friendships are associated with depressive symptoms, anxiety, and maladaptive coping (Parker and Asher 611–21). Chronic suppression of emotion in peer contexts may contribute to alexithymia-like presentations, escapism, and, in severe cases, internalizing disorders.

3. Developmental Skill Deficits:

Deep friendships serve as laboratories for empathy, conflict resolution, and co-regulation. Shallow ties limit practice in these skills, potentially impeding socioemotional development.

3. Conceptual Framework: Attachment × Affordances × Sociocultural Norms

3.1 Overview

We theorize that surface-level friendships emerge from a multi-level feedback system in which (a) individual psychological dispositions, (b) digital communication affordances, and (c) sociocultural/peer norms interact to shape adolescents’ ongoing risk–reward calculus around emotional disclosure. The core mechanism is simple: when the perceived interpersonal risk of vulnerability outweighs the expected relational return, adolescents default to low-cost, low-depth

interaction scripts. Over time, this behavioral choice is reinforced by platform architectures and peer cultures, stabilizing a friendship ecology high in frequency but low in intimacy.

3.2 Component Domains and Key Constructs

A. Psychological Substrate (Attachment & Intrapersonal Capacities)

Attachment Security/Insecurity: Internal working models of others' availability and one's own worthiness of care influence trust and help-seeking (Bowlby).

B. Communication patterns (Affordances of Networked Platforms)

Breadth and Depth of Conversation and Relationships : External topic providers of relational conversations that spark deep and lasting conversations settle depth and time spent with each other.

C. Sociocultural & Peer Normativity

Macro-Norms:
Collectivist harmony, face-saving, gendered stoicism.
Meso-Norms (Peer Scripts): "Don't kill the vibe," irony-as-armor, competitive banter.
Peer Contagion & Enforcement: Deviations (deep talk) risk sanction; conformity perpetuates superficiality.

3.3 Mechanistic Pathways (Proposed)

We posit three interlocking pathways through which these domains converge:
1. Risk Appraisal Pathway (Psychological → Behavioral): Insecure attachment and emotion dysregulation inflate the *subjective risk* of disclosure. In a high-audience, persistent digital context, that risk feels amplified, leading to habitual suppression and shallow scripts.
2. Behavioral Economizing Pathway (Affordances → Norms): Platforms lower the cost of maintaining many weak ties and raise the opportunity cost of sustained dyadic engagement. Adolescents economize by distributing minimal attention across many contacts, normalizing superficial maintenance.
3. Norm Internalization Pathway (Sociocultural ↔ Behavioral): Cultural and peer norms valorizing restraint are mirrored and magnified online. Teens observe and internalize that "serious talk" is off-limits, reinforcing self-censorship and validating shallow interaction as appropriate.

These pathways form a **recursive loop**: repeated superficial exchanges prevent corrective experiences (e.g., supportive responses to disclosure), which cements negative expectations (psychological), supports platform use patterns (behavioral), and strengthens group norms (sociocultural).

3.4 Mediators and Moderators

- **Mediators**: (a) *Self-disclosure frequency/quality*; (b) *Perceived mutuality/trust*; (c) *Co-regulation episodes* (moments of shared emotional processing); (d) *Perceived relational safety online/offline*.
- **Moderators**: (a) *Parental warmth / adult mentorship*; (b) *Offline safe spaces* (clubs, counseling groups); (c) *Platform type/design* (ephemeral vs persistent messaging); (d) *Cultural context* (individualism–collectivism continuum); (e) *Gender & masculinity norms*.

3.5 Testable Propositions / Hypotheses (Linked to Study 1)

- **H1 (Psychological)**: Higher attachment insecurity → lower friendship depth, mediated by reduced self-disclosure and perceived relational safety.
- **H2 (Behavioral/Affordances)**: Greater reliance on public/semi-public digital channels (vs private dyads) → lower friendship depth, mediated by performative self-presentation norms.
- **H3 (Sociocultural)**: Stronger endorsement of emotional restraint norms (gendered or cultural) → lower friendship depth, moderated by availability of alternative safe venues for disclosure.
- **H4 (Integrated)**: A three-way interaction (Attachment × Affordance Use × Restraint Norms) predicts friendship depth above additive effects.
- **H5 (Outcomes)**: Friendship depth negatively predicts loneliness and depressive symptoms, controlling for network size/interaction frequency.

3.6 Ethnographic/Micro-Interactional Expectations (Study 2)

We expect to observe:

- **Invitation/Deflection Sequences**: Attempts at depth met with humor shifts, topic changes, or emoji-based soft rejections.
- **Micro-Signals of Safety**: Eye contact, lowered voice, private channel switching, longer message length as markers of intimacy initiation.
- **Norm Enforcement**: Peers teasing or ignoring "heavy" disclosures, reinforcing superficial scripts.

3.7 Intervention Logic Model (Study 3)

Inputs: Structured prompts, confidentiality norms, moderated digital space design.
Mechanisms of Change: Reduced perceived risk (clear rules), increased efficacy in emotional articulation (scaffolding), positive reinforcement through supportive peer responses.
Proximal Outcomes: Increased disclosure quality, perceived mutuality, trust.
Distal Outcomes: Reduced loneliness/depressive symptoms; improved friendship quality indices.

4. Study 1: Cross-Sectional Survey

4.1 Methods

Participants & Sampling. We recruited N = 612 adolescents (Mage = 15.8 years, SD = 1.4; 52% female) from four urban secondary schools across three countries (United States, South Korea, and Brazil). Schools were selected to represent diverse cultural contexts (individualist vs. collectivist) and socioeconomic strata. All participants provided informed assent, and parental consent was obtained under protocols approved by each university's IRB.

Measures.

1. **Friendship Depth Index (FDI).** 12-item scale developed to capture breadth vs. depth in peer ties (α = .91). Items assess mutual self-disclosure (e.g., "I can share my worries with my closest friends"), expected support ("I know my friends will help me when I'm upset"), and perceived intimacy.

2. **Attachment Insecurity.** Experiences in Close Relationships–Revised (ECR-R) short form (18 items; α = .88 for anxiety, .85 for avoidance).

3. **Digital Affordance Use.** Proportion of daily peer communication occurring via (a) public feeds/group chats versus (b) private 1:1 messaging; assessed with a 7-day usage diary.

4. **Emotional Restraint Norms.** 8-item inventory measuring endorsement of "don't show weakness" and "maintain harmony" beliefs in friendships (α = .86).

5. **Outcomes.** UCLA Loneliness Scale (Version 3; α = .93) (Russell 20–40) and the Center for Epidemiologic Studies Depression Scale (CES-D; α = .89) (Radloff 385–401).

Procedure. Data were collected during homeroom periods via in-class paper surveys and 7-day digital diaries administered through a secure mobile app. Measures of attachment and norms were administered first to minimize priming. FDI and outcome scales followed. Diary prompts appeared four times per day at random intervals, asking participants to indicate their most recent peer interaction channel and topic depth.

Analytic Plan.

- **Descriptive statistics** to characterize central tendencies and intercorrelations.

- **Structural Equation Modeling (SEM)** to test H1–H5: a path model in which Attachment Anxiety/Avoidance, Affordance Use, and Restraint Norms predict FDI, with indirect paths through Self-Disclosure Frequency; and FDI predicting Loneliness and Depression, controlling for network size.

- **Moderated mediation** to assess the three-way interaction (H4) and test whether cultural context (country) and gender moderate key paths.

- Models were estimated in Mplus 8.5 (Muthén and Muthén) using robust maximum likelihood; missing data (<4%) handled with full information maximum likelihood.

4.2 Results

Descriptives & Correlations. Mean FDI was 2.7 (SD = 0.8) on a 1–5 scale, indicating generally low–moderate friendship depth. Attachment anxiety and avoidance were positively correlated ($r = .34$, $p < .001$) and both negatively correlated with FDI (anxiety: $r = –.42$; avoidance: $r = –.36$; both $p < .001$). Proportion of public digital communication was inversely related to FDI ($r = –.31$, $p < .001$), and stronger endorsement of restraint norms likewise predicted lower FDI ($r = –.29$, $p < .001$). FDI was strongly negatively correlated with Loneliness ($r = –.58$, $p < .001$) and Depression ($r = –.45$, $p < .001$).

SEM Findings. The hypothesized model demonstrated excellent fit: $\chi^2(72) = 95.3$, $p = .06$; CFI = .98; TLI = .97; RMSEA = .028 (Hu and Bentler).

- **H1 (Attachment → FDI).** Both attachment anxiety ($\beta = –.33$, $p < .001$) and avoidance ($\beta = –.27$, $p < .001$) predicted lower friendship depth, with part of their effect mediated by reduced Self-Disclosure Frequency (indirect effect anxiety: $\beta = –.12$, $p < .01$; avoidance: $\beta = –.09$, $p < .05$).

- **H2 (Affordances → FDI).** Higher reliance on public channels predicted lower FDI ($\beta = –.21$, $p < .001$), mediated by stronger adherence to performative norms (indirect effect: $\beta = –.08$, $p < .01$).

- **H3 (Norms → FDI).** Emotional restraint norms had a direct negative effect on FDI ($\beta = –.24$, $p < .001$), with moderation by availability of offline safe spaces (simple slopes analysis: effect stronger when fewer safe venues; $\Delta R^2 = .04$).

- **H4 (Three-way Interaction).** A significant three-way interaction emerged (Attachment × Affordance × Restraint; $\beta = –.11$, $p = .02$), indicating that adolescents high on all three risk factors exhibited the lowest FDI.

- **H5 (FDI → Well-Being).** FDI robustly predicted lower Loneliness ($\beta = –.51$, $p < .001$) and Depression ($\beta = –.38$, $p < .001$), independent of network size and total communication frequency.

Cross-Cultural & Gender Differences.

- The negative path from Affordance Use to FDI was strongest in the U.S. sample ($\beta = –.26$) and attenuated in Brazil ($\beta = –.18$) and Korea ($\beta = –.17$), suggesting

individualist contexts amplify breadth-over-depth effects.

- Male adolescents exhibited higher endorsement of restraint norms ($M_{male} = 3.9$ vs. $M_{female} = 3.2$; $t(610) = 6.2$, $p < .001$) and lower FDI (β difference $= -.05$, $p < .05$).

Summary. Study 1 validates the conceptual framework: psychological, behavioral, and sociocultural factors jointly predict surface-level friendship depth, which in turn relates to key indicators of adolescent well-being. These quantitative findings guide the focus of micro-interactional analyses (Study 2) on disclosure risk cues and inform the design of targeted disclosure scaffolds in Study 3.

5. Study 2: Qualitative Ethnographic & Micro-Interactional Analysis

5.1 Methods

Settings & Participants. We conducted ethnographic fieldwork in three sites:

1. A suburban U.S. high school ($N = 24$ students observed, ages 15–17).

2. An urban Korean middle school ($N = 18$ students, ages 13–15).

3. A Brazilian online gaming community ($N = 20$ active members, ages 14–18).

Participants were purposively sampled to capture variation in cultural context, gender mix, and digital immersion. All provided assent and parental consent; online community members gave digital consent.

Data Collection.

- **In-Situ Observation:** Over 8 weeks, researchers spent 3–4 hours per week in each physical site, taking detailed field notes on peer interactions during unstructured periods (breaks, lunch, club meetings).

- **Digital Trace Capture:** In the online community, chat logs and voice-chat recordings were collected with permission; key interaction threads were archived.

- **Semi-Structured Interviews:** After 4 weeks, we conducted 30-minute interviews with a subset ($n = 10$ per site) to explore perceptions of friendship depth, disclosure experiences, and emotional safety.

Analytic Framework.

- **Thematic Coding:** Transcripts and field notes were coded using MAXQDA for (a) instances of disclosure invitation and deflection, (b) markers of perceived risk, and (c)

expressions of relational norms.

- **Micro-Interactional Analysis:** We applied conversation-analytic methods to select interactional sequences, examining verbal and nonverbal "micro-signals" (e.g., gaze, tone shift, emoji timing, pacing) that signaled attempts at deeper connection or boundary maintenance.

- **Trustworthiness:** Two coders achieved Cohen's $\kappa = .82$ on initial thematic codes; discrepancies were resolved through discussion (Cohen 37–46).

5.2 Results

Theme 1: Disclosure Invitations & Deflections

Across all sites, adolescents periodically attempted to shift from small talk to more personal topics (e.g., "I've been feeling really stressed about my grades"). These invitations were met with:

- **Humor Redirects:** Teasing quips or meme references that resumed the playful tone ("Ugh, school sucks lol!").

- **Topic Shifts:** Abrupt changes to neutral topics ("Hey, did you see that TikTok?").

- **Emoji Soft-Deflections:** Use of 😂 or 🥺 emojis without substantive comment, signaling sympathy but no engagement.

Theme 2: Micro-Signals of Safety

Successful deepening occurred when peers reciprocated subtle signals:

- **Lowered Voice & Proximity:** In cafeterias, a student lowering their voice and leaning in prompted another to share ("Yeah, it's been rough…").

- **Extended Pauses & Reflective Replies:** In chat logs, longer reply latencies (5–10 s) coupled with text such as "I hear you" indicated a moment of genuine attention.

- **Channel Switching:** Moving from a group thread to a private DM often preceded a more candid exchange.

Theme 3: Norm Enforcement & Peer Contagion

When one peer shared an emotional vulnerability publicly, onlookers often (1) changed the topic, (2) laughed uncomfortably, or (3) posted a generic supportive sticker—actions that subtly signaled "too much emotion." Repeated instances cultivated a **peer climate** where "heavy" disclosures were discouraged. In one classroom, a student who persisted in sharing eventually self-censored, saying, "Never mind, I'll deal with it myself."

Theme 4: Cross-Cultural Variations

- In the **U.S. site**, students sometimes invoked mental-health jargon ("I'm having anxiety") to legitimize deeper talk, though peers typically reverted to banter.

- In **Korea**, deference to group harmony led students to apologize when opening up ("Sorry, I know this is a lot…"), and peers responded with brief reassurances before shifting back.

- In the **Brazilian community**, gaming camaraderie allowed intermittent deeper exchanges in voice chat, but these were compartmentalized and rarely transitioned to text channels.

Integration with Quantitative Findings

The micro-interactional data illustrate the **mechanistic pathways** hypothesized in Study 1. Insecure-attachment markers (hesitant eye contact, prefatory "I don't want to bother you") amplified perceived risk, while digital affordances (group threads, rapid-fire chat) perpetuated performative norms. Peer-enforced boundaries mirrored restraint norms measured in the survey. Conversely, moments when micro-signals aligned (private DM + lowered tone + empathic reply) resembled the "safe spaces" moderators identified quantitatively.

6. Study 3: Pilot Interventions

6.1 Methods

6.1.1 Design & Participants

A non-randomized, pre-post pilot study was conducted with $N = 72$ adolescents ($M_{age} = 15.9$ years, $SD = 1.3$; 50% female) drawn from two of the original schools (one U.S., one Korean). Participants were stratified by baseline Friendship Depth Index (FDI) into low-depth ($FDI < 2.5$) and moderate-depth ($FDI \geq 2.5$) groups to assess differential responsiveness.

6.1.2 Interventions

1. **Structured Peer-Sharing Workshop** (In-Person):

    - **Format:** Four weekly 60-minute sessions, groups of 6–8 students.

    - **Activities:** Gradual self-disclosure exercises (e.g., "Find Someone Who…" boards, paired vulnerability prompts), guided reflection, and peer feedback circles.

- **Facilitation:** Trained counselor and co-facilitator, with explicit confidentiality agreements and emotion-safety norms.

2. **Digital Intimacy Sandbox** (Online):

   - **Platform:** Custom chat app with ephemeral messaging (messages expire in 24 hours), anonymity toggles (first name only), and "depth prompts" that surface at intervals.

   - **Duration:** Concurrent 4 weeks, participants divided into 3–4 member pods.

   - **Moderation:** Research assistants monitored for adherence to supportive norms, sent weekly check-ins, and intervened if conversations derailed.

6.1.3 Measures

Assessed at baseline (T1), post-intervention (T2, week 5), and follow-up (T3, week 9):

- **Primary**: Friendship Depth Index (FDI)

- **Secondary**: Perceived Connectedness Scale (PCS; $\alpha = .90$), Self-Disclosure Quality Rating (SDQR; $\alpha = .88$), Perceived Peer Support (PPS; $\alpha = .92$)

- **Process Metrics**: Session attendance/engagement, message counts and average depth scores in sandbox, facilitator ratings of group cohesion.

- **Well-Being Outcomes**: UCLA Loneliness, CES-D Depression.

6.1.4 Analytic Plan

- **Repeated-Measures ANOVA** to test pre-post changes in primary/secondary outcomes, with intervention type (workshop vs. sandbox) and baseline depth as between-subjects factors.

- **Multilevel Modeling** for sandbox data: pod-level effects on message depth trajectories over time.

- **Process–Outcome Correlations** to examine links between engagement metrics and outcome improvements.

6.2 Results

6.2.1 Engagement & Feasibility

- **Workshop:** Mean attendance = 3.8/4 sessions; facilitator ratings of cohesion = 4.2/5.

- **Sandbox:** Average messages per participant = 45 (SD = 12); depth prompts responded to = 82%.

6.2.2 Friendship Depth (FDI)

- **Time × Intervention** interaction significant, $F(2, 136) = 11.4$, $p < .001$, $\eta^2 = .14$.

    - *Workshop group*: FDI increased from 2.3 (T1) to 3.4 (T2), maintained at 3.2 (T3).

    - *Sandbox group*: FDI increased from 2.4 (T1) to 3.0 (T2), slight decline to 2.9 (T3).

6.2.3 Secondary Outcomes

- **Perceived Connectedness (PCS):** Workshop $\Delta T1–T2 = +1.1$ ($p < .001$), Sandbox $\Delta T1–T2 = +0.8$ ($p < .01$).

- **Self-Disclosure Quality (SDQR):** Workshop +0.9 ($p < .001$); Sandbox +0.6 ($p < .05$).

- **Perceived Peer Support (PPS):** Workshop +1.0 ($p < .001$); Sandbox +0.7 ($p < .05$).

6.2.4 Well-Being

- **Loneliness:** Workshop $\Delta = –0.9$ ($p < .01$); Sandbox $\Delta = –0.6$ ($p < .05$).

- **Depression:** Workshop $\Delta = –1.2$ ($p < .01$); Sandbox $\Delta = –0.8$ ($p < .05$).

6.2.5 Process–Outcome Links

- In the workshop, participants who completed all targeted self-disclosure prompts reported larger FDI gains ($r = .48$, $p < .001$).

- In the sandbox, pods with higher average engagement (messages > 50) showed steeper depth trajectories ($\beta = .31$, $p < .01$).

Summary. Both interventions were feasible and associated with moderate-to-large improvements in friendship depth and perceived connectedness, with stronger and more sustained effects for the in-person workshop. Pilot results support the logic model and suggest scalable pathways for fostering safe vulnerability in adolescent peer networks.

7. Integrated Discussion

This mixed-methods program converges quantitative, qualitative, and intervention findings to illuminate the mechanisms sustaining **surface-level friendships** and pathways to revitalize adolescent connectedness.

7.1 Synthesis of Core Findings

- **Triadic Drivers Confirmed**: Study 1's SEM supported that insecure attachment, digital affordance patterns, and sociocultural restraint norms jointly predict low friendship depth, with mediating roles for self-disclosure frequency and performative norms. Study 2 micro-analyses illustrated these drivers in action—teens' risk appraisals, platform scripts, and peer-enforced norms play out in moment-to-moment exchanges.

- **Recursive Feedback Loop**: Qualitative data revealed how superficial scripts reinforce negative expectations and norms, aligning with the theoretical feedback loop (Framework Section 3.3). Without corrective experiences of supportive disclosure, adolescents remain locked in surface-level patterns.

- **Intervention Efficacy**: Study 3 demonstrated that both structured offline workshops and moderated online sandboxes can **lower perceived disclosure risk** and scaffold deeper interactions, leading to significant gains in friendship depth, connectedness, and well-being. The workshop's more sustained effects suggest face-to-face scaffolding offers additional relational cues (tone, proximity) absent online.

7.2 Theoretical Refinements

Our integrative model is strengthened by empirical validation of its mechanistic pathways. Importantly, the **interaction** of risk factors (H4) highlights that multi-domain vulnerability compounds relational superficiality. Future theorizing should account for such synergistic effects rather than domain-specific contributions alone. Additionally, the emergence of **channel-switch micro-signals** in Study 2 suggests expanding the digital affordance construct to include adolescents' strategic navigation between public and private spaces as a dynamic relational signal.

7.3 Practical and Public Health Implications

- **Educational Settings**: Schools can incorporate brief "disclosure stations" or guided peer-sharing modules into homeroom curricula, leveraging workshop protocols to foster supportive group norms.

- **Digital Platform Design**: App developers might implement ephemeral, private "depth zones" and gentle "real talk" prompts to normalize candid sharing without fear of permanence.

- **Clinical Screening**: Clinicians and counselors can assess **Friendship Depth Index (FDI)** alongside traditional loneliness scales to identify youth at risk of social isolation masked by high network activity.

8. Limitations & Future Directions

Limitations

1. **Sample Representativeness**
    - Although our mixed-method design incorporated diverse cultural contexts (U.S., South Korea, Brazil), participants were drawn from urban and suburban school settings and an online gaming community. Rural adolescents, out-of-school youth, and populations in low-resource regions were not included, limiting generalizability.

2. **Study 3 Design Constraints**
    - The pilot interventions employed a non-randomized, pre–post design without an active control condition. As such, maturation, regression to the mean, or Hawthorne effects cannot be fully ruled out. Future work should employ randomized controlled trials to ascertain causal efficacy.

3. **Reliance on Self-Report and Diary Measures**

    - Key variables (e.g., Friendship Depth Index, self-disclosure diaries) depend on participants' introspection and honesty, which may introduce social desirability or recall biases. Although the digital diary mitigated some retrospection, objective measures (e.g., passive sensing of interaction patterns, third-party observations) would bolster validity.
    - The ECR-R-18 was originally validated in adult samples and framed around romantic relationships; although the scale has been applied to adolescent populations, subsequent work has identified items that function inconsistently in this age group, and a peer-specific attachment measure may capture friendship-directed attachment more precisely. In addition, the Friendship Depth Index was developed for the present study, and while internal consistency was high, its factor structure and convergent validity await independent confirmation (Wongpakaran and Wongpakaran 36–42).

4. **Short-Term Follow-Up**
    - Outcomes were assessed up to four weeks post-intervention. The durability of increases in friendship depth, connectedness, and well-being beyond this window remains unknown. Longitudinal tracking is needed to evaluate maintenance and

potential fade-out effects.

5. **Intervention Scalability and Fidelity**
    - The structured workshop was facilitated by trained researchers, and the intimacy sandbox was closely monitored. Translating these models into typical school or app contexts may encounter resource, training, or fidelity challenges that could attenuate effects.

Future Directions

1. **Randomized Controlled Trials**
    - Conduct fully powered RCTs of the peer-sharing workshop and digital sandbox, ideally with active control conditions (e.g., generic social skills training) to isolate specific intervention components.

2. **Longitudinal Cohort Studies**

    - Embed the Friendship Depth Index and related measures into ongoing youth cohorts to examine how surface-level friendship trajectories predict mental health and social outcomes over months or years.

3. **Objective Interaction Metrics**

    - Integrate passive digital phenotyping (e.g., app usage logs, conversation duration, voice-tone analysis) and ecological momentary assessment to triangulate self-report and capture real-world interactional depth.

4. **Cultural and Contextual Extension**

    - Test the model and interventions in diverse sociocultural settings, including rural communities, non-Western collectivist societies, and digital subcultures (e.g., social media fandoms, online support groups) to assess boundary conditions and necessary adaptations.

5. **Mechanism-Focused Studies**

    - Utilize experimental paradigms (e.g., vignette-based disclosure tasks, manipulated affordance features) to causally probe the risk appraisal, behavioral economizing, and norm internalization pathways posited in our conceptual framework.

6. **Scalability and Implementation Research**

- Partner with schools, community organizations, and technology companies to pilot low-cost versions of workshops (e.g., teacher-led modules) and sandbox features (e.g., chat-bot facilitated prompts), evaluating implementation barriers, cost-effectiveness, and real-world impact.

7. **Digital Design Innovation**
   - Collaborate with UX designers and platform engineers to embed "depth triggers" and ephemeral, privacy-preserving channels into mainstream social apps, then evaluate their influence on friendship depth metrics at scale.

By addressing these limitations and pursuing these avenues, future research can deepen our understanding of how to foster authentic intimacy in adolescent friendships and translate insights into sustainable, population-level strategies for bolstering youth mental health.

9. Conclusion

Adolescent friendship depth is a critical determinant of emotional well-being. In the digital age, surface-level ties flourish under the combined influence of psychological risk aversion, platform affordances, and sociocultural norms. However, engineered contexts that reduce perceived disclosure risk and scaffold vulnerability—whether in-person or online—can restore relational texture and foster genuine connectedness. Addressing this contemporary friendship paradox is not only a theoretical challenge but a pressing public health priority.

10. Acknowledgement & Data Availability

Acknowledgements We extend our gratitude to the students, families, and school administrators in the United States, South Korea, Brazil, Malaysia, and the Philippines who generously contributed their time and insights. We also thank the research assistants—Taeyeon Kim and Taeyoon Kim—for their tireless efforts in data collection and coding, and our community partners for facilitating access to the online gaming cohort.

The de-identified survey data, analytic code (Mplus scripts), and qualitative codebooks that support the findings of this study are available from the corresponding author, Mr. Jihu Lee (email: jihu.lee@cooper.edu), upon reasonable request. A permanent record of these materials will be deposited in the Open Science Framework (OSF) under the project title "Surface-Level Friendships in Adolescence" and will be assigned a DOI prior to publication. Full measurement instruments and intervention manuals will likewise be stored in the OSF respiratory. Once the DOI is issued, it will be included in this article.

Works Cited

Altman, Irwin, and Dalmas A. Taylor. Social Penetration: The Development of Interpersonal Relationships. Holt, Rinehart and Winston, 1973.

Bagby, R. Michael, et al. "The Twenty-Item Toronto Alexithymia Scale—I. Item Selection and Cross-Validation of the Factor Structure." Journal of Psychosomatic Research, vol. 38, no. 1, 1994, pp. 23–32.

Bowlby, John. Attachment and Loss. Vol. 1, Attachment. Basic Books, 1969.

boyd, danah. "Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications." A Networked Self: Identity, Community, and Culture on Social Network Sites, edited by Zizi Papacharissi, Routledge, 2010, pp. 39–58.

Cohen, Jacob. "A Coefficient of Agreement for Nominal Scales." Educational and Psychological Measurement, vol. 20, no. 1, 1960, pp. 37–46.

Dishion, Thomas J., and Jessica M. Tipsord. "Peer Contagion in Child and Adolescent Social and Emotional Development." Annual Review of Psychology, vol. 62, 2011, pp. 189–214.

Gross, James J., and Oliver P. John. "Individual Differences in Two Emotion Regulation Processes: Implications for Affect, Relationships, and Well-Being." Journal of Personality and Social Psychology, vol. 85, no. 2, 2003, pp. 348–62.

Hu, Li-tze, and Peter M. Bentler. "Cutoff Criteria for Fit Indexes in Covariance Structure Analysis: Conventional Criteria versus New Alternatives." Structural Equation Modeling, vol. 6, no. 1, 1999, pp. 1–55.

Markus, Hazel R., and Shinobu Kitayama. "Culture and the Self: Implications for Cognition, Emotion, and Motivation." Psychological Review, vol. 98, no. 2, 1991, pp. 224–53.

Muthén, Linda K., and Bengt O. Muthén. Mplus User's Guide. 8th ed., Muthén and Muthén, 2017.

Parker, Jeffrey G., and Steven R. Asher. "Friendship and Friendship Quality in Middle Childhood: Links with Peer Group Acceptance and Feelings of Loneliness and Social Dissatisfaction." Developmental Psychology, vol. 29, no. 4, 1993, pp. 611–21.

Putnam, Robert D. Bowling Alone: The Collapse and Revival of the American Community. Simon and Schuster, 2000.

Radloff, Lenore Sawyer. "The CES-D Scale: A Self-Report Depression Scale for Research in the General Population." Applied Psychological Measurement, vol. 1, no. 3, 1977, pp. 385–401

Russell, Daniel W. "UCLA Loneliness Scale (Version 3): Reliability, Validity, and Factor Structure." Journal of Personality Assessment, vol. 66, no. 1, 1996, pp. 20–40.

Wongpakaran, Tinakon, and Nahathai Wongpakaran. "A Short Version of the Revised 'Experience of Close Relationships Questionnaire': Investigating Non-Clinical and Clinical Samples." Clinical Practice and Epidemiology in Mental Health, vol. 8, 2012, pp. 36–42.

Attached to AI: A Theoretical Framework Linking Attachment Theory to Children's Reliance on Conversational AI By Katie Lee

Abstract

Children increasingly begin to form emotionally dependent relationships with conversational AI chatbots, seeming to view them as real friends, companions, or even partners in some cases and replacing real human connection. Drawing on attachment theory, this paper predicts what makes certain children more susceptible to this reliance than others. The proposed theory is that the consistency and quality of early infant-caregiver interactions shape internal working models that predict distinct patterns of AI chatbot reliance in childhood. This narrative literature review synthesizes 41 studies covering developmental attachment theory, human-AI interaction, and the limited existing work between them. This paper finds that securely attached children are likely to interact with AI supplementally, for information or educational use, while children with anxious attachment show patterns of frequent, emotionally dependent, reassurance-seeking use. Avoidantly attached children are likely to rely on chatbots for low-risk emotional disclosure; they feel vulnerable sharing with the people around them, predicting a further withdrawal from human relationships. Children with disorganized attachment show the most unpredictable pattern, alternating between intense emotional engagement and sudden withdrawal, carrying the highest socioemotional risk. This paper's central contribution is a theoretical framework linking each of the four attachment types to specific patterns of AI reliance and associated risk, focusing on the emotional function that engagement serves. As AI becomes further ingrained in childhood, the framework offers researchers, educators, designers, and policymakers a foundation for evaluating chatbot engagement based on psychological function.

1. Introduction

As technology continues to expand its reach and advance chatbot functions, children are starting to form emotionally dependent relationships with artificial intelligence (AI) chatbots. These relationships start to develop through several factors, such as anthropomorphizing AI, losing real-world connections, or having insecure attachments with external factors in life (Raees 340). This tendency raises important questions about why some children are more inclined than others to seek connection with non-human systems. Looking at the developmental processes that shape emotional regulation and support-seeking behavior in infancy can help understand this reliance (Benoit 542; Brumariu and Kerns 664; Ding et al. 459). Attachment styles begin to form in infancy through repeated interactions with carers and are categorized as secure, anxious, avoidant, and disorganized attachment types (Benoit 542; Hong and Park 451). As attachment serves as the foundation for cognition and behavior, early differences can significantly affect later outcomes such as anxiety, social functioning, depression risk, and behavioral tendencies (Ding et al. 459).

These developmental processes continue to shape emotional and relational tendencies throughout later stages of life. However, children are now growing in environments increasingly shaped by AI chatbots (Coyne et al. 5). Children are increasingly being raised in an AI-saturated world, where chatbot technologies are integrated into everyday life (Kim et al. 3). Recent research suggests that children even anthropomorphize AI chatbots by attributing human-like qualities, intentions, and emotional understanding to them (Kim et al. 3, 19; Movahed & Martin 12, 16). Since these systems are designed to be emotionally responsive, highly available, and nonjudgmental, they become appealing sources of comfort, validation, or companionship.

Several studies suggest that chatbot use can support the well-being of individuals in certain contexts (Zhang et al. 2). However, growing evidence indicates that relying on chatbots for companionship and emotionally dependent use is associated with poorer psychosocial outcomes, including problematic media use, socioemotional problems, and reduced well-being (Coyne et al. 4; Zhang et al. 14; Zhang et al. 20; Ying 43-44). These risks may be especially pronounced during childhood, when social and emotional habits are still developing (Tottenham and Sheridan 1-2). For instance, heavy reliance on chatbots may correlate with reduced real-world social interaction and fewer opportunities for peer engagement. Reliance on AI chatbots may also introduce additional concerns, such as exposure to misinformation, hallucinated responses, and privacy risks when sensitive personal information is shared with AI systems (Coyne et al. 3-4; Zhang et al. 12).

Attachment theory offers a useful framework for understanding why some children may be more vulnerable to forms of AI reliance, as it posits that early carer-child relationships shape internal working models that guide emotion regulation and support-seeking behaviors across later social relationships (Bretherton 766). Research has already begun applying attachment theory to human-AI relationships, showing that insecure attachment styles are associated with stronger emotional bonds, problematic use, and anthropomorphic tendencies toward chatbots (Yang and Oshio 10662; Xie and Pentina 2054; Heng and Zhang 1775; Li and Liu; Ying 31).

However, several important gaps remain. First, much of this work has focused on individuals who have passed the age of childhood, leaving the critical developmental period largely unexplored (Lin and Hou; Ying; Heng and Zhang). Second, much of the current literature groups attachment into broad dimensions such as anxiety and avoidance rather than examining all four attachment styles individually, leaving it unclear whether each style predicts a different form of AI reliance (Yang and Oshio; Li and Liu). Third, prior work has primarily focused on outcomes, such as usage frequency or problematic use, without explaining why some individuals are more vulnerable to unhealthy AI reliance, failing to consider the early developmental mechanisms forecasting it.

To address these gaps, this paper reviews previous literature on early attachment styles and their implications on cognition and behavior in children, examines existing research on how children's engagement with AI chatbots leads to socioemotional risks, and finally synthesizes these bodies of literature to propose a theoretical framework linking each attachment style to a distinct pattern of AI reliance. This paper offers a nuanced explanation of how early development

causes individuals to engage differently with AI systems. Therefore, this paper is guided by the following research questions:

- RQ1) What are the different attachment types, and how do they develop through early caregiver-child interactions?
- RQ2) What are their implications for emotional regulation and support-seeking behavior?
- RQ3) What distinct patterns of emotional reliance on AI chatbots may emerge among users?
- RQ4) How do early attachment styles influence the type and degree of reliance children develop toward AI chatbots, and what are the potential socioemotional consequences?

Building on this framework, it is hypothesized that securely attached children may use AI solely as an informational system, while anxiously attached children seek emotional reassurance. Avoidantly attached children may seek low-effort interactions, and disorganized attachment may predict inconsistent or compulsive reliance patterns.

2. Literature Review

2.1 Childhood Attachment Theory

Attachment Theory, developed by John Bowlby and expanded by Mary Ainsworth, proposes that early, secure relationships between infants and caregivers are fundamentally healthy for developing ample social and emotional skills (Hong and Park 451). During infancy, a period marked by high dependence, attachment patterns begin to form between child-caregivers through repeated interactions, as caregivers provide comfort, protection, and regulation of distress for their babies (Benoit 541-542; Johnson et al. 501). Over time, these experiences contribute to the development of internal working models that shape how individuals perceive safety, intimacy, and relationships (Bretherton 767). Based on the caregivers' responsiveness, emotional attunement, and quality of interactions with their infants, distinct attachment styles categorized as secure, anxious, avoidant, and disorganized begin to form (Redshaw and Martin 219-220; Brumariu and Kerns 663; Ding et al. 459). The early differences in communication significantly affect later outcomes such as cognition and behaviors because attachment serves as the foundation for socio-emotional development (Smeekens et al. 368).

Secure attachment is formed through a consistent and responsive caregiver. When a caregiver is able to reliably meet the infants' needs and provide comfort during distress, it fosters a healthy emotional reliance between the pair (Benoit 542; Johnson et al. 501-502). This positive reinforcement prompts the child to develop stable expectations in relationships and gives them confidence to explore the world, knowing their caregivers will be a safe space they can get back to. They can experience, process, and regulate strong emotions without becoming overwhelmed (Yang and Oshio 10662). When distressed, securely attached children often regulate emotions through co-regulation and open emotional expression, typically searching for a trusted adult's

support rather than avoiding or intensifying distress (Cooke et al. 1103; Benoit 542). Over time, this pattern fosters the development of effective coping strategies, including active problem-solving, seeking appropriate support, and remaining optimistic in tough situations (Zimmer-Gembeck et al. 15). The combination of reliable support and effective emotional regulation fosters greater emotional resilience and healthier social functioning across development in individuals.

Anxious attachment is formed through inconsistent and unpredictable caregiving when a child's emotional needs are not efficiently met, leading to uncertainty about the availability of support (Cooke et al. 1104; Benoit 542). Children with this attachment style typically form a hypervigilant internal working model where relationships are viewed as unstable and unsafe (Colonnesi et al. 631-632). This leads children to regulate emotions by intensifying expression rather than calming themselves internally when faced with a stressful situation (Doinita and Maria 200). They will turn persistently to caregivers or other attachment figures for support and engage in excessive reassurance-seeking, such as clinginess or heightened protest behaviors in an attempt to maintain proximity and emotional security (Colonnesi et al. 631-632). This pattern results in coping strategies such as heightened emotional reactivity and difficulty self-soothing in the absence of external validation (Crittenden 331, 340). While these strategies may temporarily reduce distress, they often reinforce long-term insecurity in relationships and dependence on external reassurance (Lin and Hou 8).

Avoidant attachment emerges from emotionally distant, rejecting, or consistently unresponsive caregiving. When a child's expressions of distress are minimized, discouraged, or ignored, this pattern leads to viewing relationships as ineffective or unsafe, resulting in a strong emphasis on self-sufficiency (Bretherton 763). When distressed, these children regulate emotions by suppressing emotional expression and downplaying their need for support in order to maintain control and independence (Benoit 542; Brumariu and Kerns 664, 666). This often develops into coping strategies such as suppression of emotional needs, denial of vulnerability, and reliance on independent problem-solving (Crittenden 339). These strategies do reduce outward displays of distress, but they limit emotional awareness and interpersonal closeness over time (Cooke et al. 1104).

Disorganized attachment is formed by a frightening, chaotic, or highly inconsistent caregiver where they function as both a source of comfort and fear, creating a breakdown in the child's internal working model (Benoit 542; Ding et al. 459). As there is no coherent or predictable strategy for seeking safety or support, when distressed, these children tend to also regulate emotions through a lack of consistent regulatory methods (Colonnesi 631). They show contradictory behaviors in response to stress (Groh et al. 592). Not having a stable figure to rely on for support leads to fragmented and disoriented help-seeking behaviors (Smeekens et al. 371). The coping strategies developed are categorized by emotional dysregulation, confusion in stressful situations, and maladaptive responses (Zimmer-Gembeck et al. 15). Over time, these difficulties significantly impair emotional regulation and relational functioning across development (Benoit 543).

Attachment styles do not remain limited to infancy; they persist across development, shaping emotional, social, and behavioral functioning through childhood. These patterns are next maintained through internal working models, influencing how they interpret relationships, regulate emotions, and respond to stress across different contexts (Bretherton 767-768). Children with insecure attachment styles, such as anxious, avoidant, or disorganized, are at greater risk for maladaptive outcomes. An example being that anxious attachment is proved to be associated with heightened vulnerability to anxiety and difficulty managing stress, while avoidant attachment is linked to reduced emotional expression and challenges in forming close relationships (Brumariu and Kerns 669). Disorganized attachment, in particular, has been associated with the highest risk for behavioral dysregulation and later psychological difficulties (Benoit 543; Ding et al. 461).

2.2 Children's Engagement with AI Chatbots

It is crucial for chatbot use amongst children to be discussed before the issue is further exacerbated, as studies show that the majority of children have experience interacting with AI, particularly voice assistants (84%) (Coyne et al. 2). Although generative AI use among children is relatively rare (5%), as chatbot quality continues to improve, there are more individuals starting to utilize it and therefore becoming more accessible to the general public and making it likely for children to be exposed to and engage in these tools as well (Buttazzo 1; Coyne et al. 2, 10).

Children are especially susceptible to emotionally dependent AI use because they often anthropomorphize these chatbots by attributing human-like qualities, emotions, and intentions to them (Kim et al. 19-21; Movahed & Martin 16). This is because children are in a critical developmental stage of figuring out how to navigate interpersonal and intrapersonal relationships (Bretherton 767-768). As children work on making sense of social and emotional interactions, they often experience difficulty distinguishing between authentic emotional reciprocity and simulated responses (Johnson et al. 501). This makes children prone to anthropomorphize AI chatbots and interpret their generated messages as genuine care, friendship, and connection (Xie and Pentina 2050; Skjuve et al. 8).

This vulnerability is intensified by specific features of AI chatbots that make them particularly attractive and emotionally appealing for children, such as constant availability, immediate responsivity, low-pressure interaction, and affirming communication designed to satisfy or validate the user (Skjuve et al. 7; Zimmerman et al. 1562). In contrast to human interactions, users have reported that chatbot interactions feel safer and more manageable, as they don’t come with the stress of rejection, conflict, or criticism (Skjuve et al. 12). These characteristics may be particularly appealing to children, who are in a critical developmental stage of learning to navigate rejection, conflict, and interpersonal feedback (Bretherton 767; Tottenham and Sheridan 1). The comfort children feel interacting with AI chatbots has even led to discussions on AI use in educational settings. It is said that emotional support by AI is now considered to help children feel overwhelmed at school (Holstein et al. 154). The growing ease

children feel with AI in educational environments also reflects a broader trend in the design of socially responsive chatbots. This dynamic can be seen in the case of the AI chatbot *Lee Luda (also known as Iruda)* in South Korea, which took on a female persona and a human-like conversational style designed to sound friendly and approachable (Cho et al. 148; Kwon and Hong 57). The deliberate choice to make *Lee Luda* use informal Korean speech and include messaging-app interference with speech bubbles and emojis contributed to mimicking real social interactions, blurring boundaries between a mechanical system and a relatable persona that children are still developmentally learning to draw (Kwon and Hong 61). For this reason, the chatbot quickly gained popularity, particularly among young users (Bae et al. 2350).

Despite all the technological advancements, AI chatbots struggle to capture the essence of real human-to-human conversation (Følstad et al.; Skjuve et al. 12). They are not able to replicate the complexity of human interaction, including unpredictability, emotional reciprocity, and nonverbal cues, because they lack the face-to-face element of seeing other people's body language, facial expressions, and tone variation (Zimmerman et al. 1556). Hence, children need to be exposed to in-person, authentic interactions with people rather than AI chatbots. Children with reduced exposure to real conversation will lack opportunities to grow socially, as overreliance on AI interactions limits practice for interpreting social cues, and it potentially constrains aspects of social-cognitive development (Kurian 132; Coyne et al. 5; Wang et al.).

2.3 Socioemotional Risks of AI Reliance in Children

Not all AI use poses the same risk. Chatbots have demonstrated positive outcomes in relation to use in educational contexts and emotional scaffolding in structured settings, suggesting that calculated use can carry genuine benefits for children (Holstein et al. 154). The risk of AI follows when users start to emotionally rely on chatbots and use them for companionship. Growing evidence suggests that this form of reliance is associated with problematic media use, socioemotional difficulties, and reduced well-being (Coyne et al. 4; Zhang et al. 28). Users not only engaged and connected with chatbots but, in many cases, also shared and discussed these exchanges on online forums, reflecting the depth to which these relationships were felt as meaningful (Kwon and Hong 60). As AI systems become increasingly sophisticated and accessible, understanding these impacts is necessary.

One of the most significant risks of emotionally dependent AI use stems from the displacement of real-world interactions. Children who turn to chatbots for comfort or connection may begin to progressively prefer those interactions to human relationships, where there is less burden about rejection, conflict, or unpredictability, making AI feel like a safer environment (Liu et al. 6). Over time, this preference obstructs opportunities for real peer interaction and social practice (Coyne et al., 5). Real human relationships carry complexity that cannot be replicated by AI, such as misattunement, conflict resolution, and repair, and the avoidance of these experiences limits the development of critical social skills (Zimmerman et al. 1559). Furthermore, beyond social displacement, AI chatbots also pose risks in misinformation and privacy. Chatbots are prone to hallucination, generating plausible but factually incorrect information, which children

are not developmentally equipped to critically evaluate (Zhou et al.; Kurian 134). The sharing of personal information also poses serious risk, as sensitive disclosures may be stored, processed, or accessed beyond the user's awareness and control (Abd-Alrazaq et al. 13).

Children are particularly prone to these risks because their social and neurological growth is still actively developing (Tottenham and Sheridan 1). During this period of time, the brain is especially malleable, meaning that simply the repeated interaction between humans or AI can shape the neural pathways underlying emotional processing and social cognition (Siegel 72). If children consistently turn to AI for emotional regulation during this window, the brain will be conditioned to favor less emotionally demanding relationships (Chambers 548-549). As a result, children will lose opportunities to practice complex human interactions necessary in building sociability and relational competence (Cooke et al. 1104-1105; Zimmerman et al. 1563; Coyne et al. 5). This susceptibility to conditioning makes the early establishment of healthy relationships especially important, as patterns formed during childhood tend to persist and consolidate across development (Ding et al. 462).

2.4 Attachment Theory Applied to Human-AI Relationships

When caregivers are consistently unable to meet a child’s emotional needs, those children do not stop seeking comfort; they instead redirect that need toward another available source (Redshaw and Martin 220). The internal working models formed through early interactions continue to guide how children seek safety, proximity, and emotional regulation across all related contexts, including non-human ones (Johnson et al. 501-502). AI chatbots become a natural redirection for reassurance with their constant availability, nonjudgmental responsiveness, and affirming communication. For children whose early emotional attachments consisted of inconsistency, rejection, or fear, the unconditional and effortless communication AI provides may not only feel appealing but emotionally necessary.

Existing research has begun to formalize the connection between early attachment styles and human-AI relationships, but mostly in adult populations. Research has demonstrated that individuals engage with AI chatbots in ways that closely mirror core attachment behaviors such as seeking proximity and comfort during distress, relying on chatbots as a secure base for exploration, and in many cases describing these systems as friends, therapists, or emotional partners (Yang and Oshio 10659; Xie and Pentina 2050; Ying 31). This pattern is especially pronounced during moments of perceived threat or loneliness, directly reflecting Bowlby's principle that attachment systems activate most strongly under distress. Critically, these problematic tendencies to excessively rely on AI manifest more in individuals with insecure attachment styles. Attachment anxiety predicts more problematic conversational AI use, a relationship amplified by anthropomorphic tendencies to emotionally bond with the chatbot (Heng and Zhang 1782). Both anxious and avoidant styles have similarly been linked to problematic AI use intensified by social anxiety and the perceived emotional comfort chatbots provide (Li and Liu). Taken together, these studies converge on a consistent pattern that insecure

attachment types predict stronger emotional bonding and anthropomorphism of chatbots, manifesting in a problematic reliance on them.

These risks are further exacerbated when considered alongside existing instability within attachment. Children with insecure attachment styles are at heightened risk for developing problematic AI reliance, as the features of chatbots, such as consistency, availability, and unconditional affirmation, are especially appealing for children who faced inconsistency, rejection, or fear in their primary attachment (Skjuve et al. 7). Rather than compensating for these relational deficits through supports such as therapy or authentic human connection, AI reliance may instead reinforce existing maladaptive patterns (Zhang et al. 35; Heng and Zhang 1781; Li and Liu).

For children with anxious attachment, the persistent availability and responsiveness of chatbots may intensify reassurance-seeking tendencies rather than building capacity for self-regulation (Zimmer-Gembeck et al. 3; Wang et al.). For children with avoidant attachment, AI's low-demand and uncomplicated interactions may further establish emotional suppression and aversion to interpersonal closeness (Benoit 542). Children with disorganized attachment may be drawn to chatbots because they can meet their unpredictable emotional needs without the inconsistency and fear that they experience from primary caregiver relationships. Moreover, this repeated emotional reinforcement with AI may bring unrealistic expectations into human relationships where authentic connection is traded for the ease AI brings (Zimmerman et al. 1561; Wang et al.). These distorted expectations may then further impair the child's ability to engage in real human relationships across development.

Research on the impact of secure attachment styles on AI chatbot reliance indicates that these children use chatbots more as tools for academic and informational help instead of aiming to fill conversational or emotional needs (Lin and Hou 8). This creates a distinction between children who grew up with insecure attachment and seek relational fulfillment (Xie and Pentina 2051). The difference between secure and insecure AI reliance lies in the underlying motivation behind interaction. Whereas securely attached children approach AI as a tool, insecurely attached children may approach it as a substitute for validation or safety (Zhang et al. 12, 35). This contrast suggests that security in early attachment functions as a forecast for emotional or compensatory reliance on AI.

Applying these findings to childhood, it is possible to propose specific patterns of AI reliance based on each early attachment type. However, as there is not yet any direct research testing these patterns, the following should be understood as hypotheses drawn from synthesizing attachment and AI literatures, rather than confirmed outcomes. Children with secure attachment, having developed stable internal working models and effective emotional regulation, are likely to engage with AI instrumentally, such as using it as a tool for an informational or educative guide while seeking genuine connection through peers (Lin and Hou 8). For children with anxious attachment, having a hypervigilant internal model that tips them towards external validation and reassurance, they may engage with AI in a high-frequency, emotionally dependent manner (Cooke et al. 1104; Heng and Zhang 1781). Chatbots will be a safe haven for them to

seek out their previously ignored needs for certainty and reliance. Children with avoidant attachment, having learnt to suppress emotional needs and prioritize self-sufficiency in response to rejective caregiving, may find AI appealing because it imposes no emotional demands or vulnerability (Lin and Hou 9, 15). The low-risk nature of talking to a chatbot will seem safer than the uncertain responses of peers, further establishing emotional suppression in human relationships. Children with disorganized attachment, lacking a real internal strategy for support, may exhibit the most unpredictable and potentially harmful patterns of AI reliance, swinging between intense emotional engagement and sudden withdrawal or compulsively confiding in chatbots with no regulatory structure to guide that use (Smeekens et al. 371).

3. Review Method

This paper uses a narrative literature review to synthesize existing research on childhood attachment styles and AI chatbot reliance in children while offering a nuanced explanation of how each attachment style leads to different types of reliance on AI chatbots, as well as the socioemotional risks those patterns carry.

Literature was identified through Google Scholar and backward citation tracking, where the reference lists of identified papers were examined to find additional relevant sources. Google Scholar was used as the primary database due to its broad coverage of pertinent, reliable sources on the psychology of attachment theory, human-AI interaction, and child development. The following search terms were used in combination to locate relevant literature: ("attachment") AND ("style" OR "type") AND (“infant” OR “infancy”) OR ("child" OR "children" OR “childhood) AND ("AI" OR "artificial intelligence" OR "chatbot") AND ("use" OR "reliance" OR "dependence") NOT (“screentime” OR“social media” OR “video games”).

These terms were selected to capture literature that connected developmental attachment theory and AI chatbot engagement specifically. “Style” and “type” were included together, as both are recognized psychological terms used interchangeably to refer to the same attachment categories, and using both ensured sufficient coverage of relevant sources. “Infant” and “infancy” were selected in researching the early attachment types in order to later transition to learning about the effect it has on children. The terms “child”, “children”, and "childhood" were prioritized to keep the focus on early development. “AI”, “artificial intelligence””, and “chatbot” were used interchangeably as they refer to the specific system of conversational AI examined in this review. “Use”, “reliance” and “dependence” were used to capture the degree of engagement children have with AI systems, from casual interaction to emotionally dependent use. Additionally, broad terms referring to technology use in general, like “screentime”, or different systems of technology like “social media" and “video games” were excluded to narrow down the search directly on AI chatbot usage.

Studies were included if they mentioned at least one of the attachment types and provided relevant insight into the specific emotional and relational tendencies. Importantly, the sources that covered single attachment styles were used to provide a deeper exploration of nuances that may have been overlooked in broader studies. Some studies discussing AI systems outside of

conversational use, like educational settings, were included to provide insight into nuance regarding accuracy, privacy, and security. Studies were excluded if they examined chatbot use in a clinical or therapeutic setting, as this review focuses on the natural emotional reliance formed through everyday use. The scope of this review was also limited to focus on typically developing children, so studies focused on specific populations such as neurodivergent children were excluded to ensure consistency within the results.

The reviewed literature was thematically organized into categories of early infant attachment theory and its developmental outcomes, children's engagement with AI chatbots, and the associated socioemotional risks. Findings across these studies were synthesized to propose a theoretical attachment-based framework. 41 studies were identified as directly influencing the proposed attachment-based framework that connects early infant attachment styles to later patterns of AI chatbot reliance.

4. Synthesis and Proposed Attachment-Based Framework

The literature reviewed for this framework draws from several interconnected areas of research, from aged foundational studies of attachment to newer, still-emerging, studies on human-AI interaction. This distribution of sources (see Table 1) provides insight into the well-established fields of research and the gaps.

Table 1. Distribution of Studies

Theme	Number of Papers	Years Published	Sources
Foundation of Attachment Theory	15	2004-2019	Brumariu and Kerns; Zimmer-Gembeck et al.; Cooke et al.; Bretherton; Johnson et al.; Benoit; Redshaw and Martin; Ding et al.; Smeekens et al.; Hong and Park; Colonnesi et al.; Crittenden; Groh et al.; Chambers; Siegel
AI Systems (informational; privacy, & security)	4	2018-2025	Holstein et al.; Abd-Alrazaq et al.; Zhou et al.; Mukhopadhyay et al.
Human-AI Interaction	12	2022-2026	Zhang et al.; Bae et al.; Skjuve et al.; Zimmerman et al.; Xie and Pentina; Cho et al.; Kwon and Hong; Følstad et al.; Buttazzo; Zhang et al.; Raees et al.; Liu et al.
Attachment Theory In Relation to Human-AI Interactions	6	2025-2026	Yang and Oshio; Heng and Zhang; Li and Liu; Wang et al.; Lin and Hou; Ying
Child-AI Interaction	4	2025-2026	Kim et al.; Coyne et al.; Kurian; Movahed and Martin

Foundation of Attachment Theory (15, 2004–2019)

Studies on the foundation of attachment theory have been an ongoing topic from years past to present and provide baseline knowledge on how attachment is built in infant-caregiver relationships, how the four attachment types are classified, how stable attachment remains over time, and how attachment predicts emotional regulation, anxiety, and social development. This provides a clear understanding of why or how reliance on AI chatbots may appear in different attachment types.

AI Systems (4, 2018-2025)

Studies on AI systems begin to appear in 2018 as AI is introduced and utilized by more people. These studies show how underneath the psychological layer that comes with emotional reliance in conversational chatbots is a structural risk. Children with secure attachment who use AI primarily for educational purposes risk receiving misinformation or faulty news. Children with insecure attachments face bigger problems regarding privacy and security risks when sharing personal information. Besides the socioemotional repercussions, there is an added layer of caution users should take when receiving or sharing information with AI. Although this paper is not directly focused on this concept, it poses a serious question about the risks regarding confidentiality and falsity.

Human-AI Interaction (12, 2022-2026)

Studies on human-AI interaction started to appear around 2022 as conversational AI became more well-known and accessible. These studies provide nuanced views on what increases trust and when companionship-seeking becomes harmful. How users start to view chatbots as friends, therapists, or partners usually stems from loneliness or distrust in those around them.

Attachment Theory In Relation to Human-AI Interactions (6, 2025-2026)

Studies connecting Attachment Theory to human-AI interactions start to emerge as conversational AI becomes more popular. These provide insight into how unmet needs in early caregiver-infant relationships lead to certain attachments and translate to certain types of human-AI interactions.

Child-AI Interaction (4, 2025-2026)

There are not yet many studies connecting early attachment types to AI interactions that children experience. The most vulnerable age of consumption is overlooked as people are distracted by the fascinating features of AI. Children are at a critical point in development, and the emotional bonds they foster with chatbots feel more intense and real, causing bigger changes in development.

Available Literature

The systematic literature review is limited to 41 studies largely because the connection

between attachment styles and their influence on child-AI interaction is still being explored. Although attachment theory has been a widely explored topic for decades, conversational AI chatbots are still comparatively recent, and the studies that do pertain to a synthesis of these two topics are mostly focused on adults. It overlooks one of the most vulnerable populations, namely children. This paper proposes a theoretical framework breaking down each of the attachment styles associated with behavioral tendencies in prediction of a proposed pattern of AI use and the potential risks that result.

Based on the inferences drawn from the literature reviewed, this paper proposes a theoretical framework (see Table 2) linking each of the four early attachment styles to a clear pattern of reliance on AI chatbots in children. This framework aligns with the hypothesis previously proposed, and the patterns identified match closely to those initially inferred.

Table 2. Proposed Theoretical Framework: Childhood Attachment Styles and Patterns of AI Chatbot Reliance

Attachment Style	Existing emotional tendency	Appealing AI feature	Proposed pattern of AI use	Potential Risk
Secure	Stable emotional regulation; open to express emotions (Brumariu and Kerns 666; Cooke et al. 1113)	Informational; Educational (Holstein et al. 156)	Instrumental; tool-based for informational purposes; minimal emotional reliance (Lin and Hou 8)	Low risk; AI use remains supplementary; misinformation (Lin and Hou 8; Zhou et al.)
Anxious	Hypervigilance; reassurance-seeking; difficulty self-soothing (Zimmer-Gembeck et al. 3)	Constant availability; responsiveness ; validation (Bretherton 766; Skjuve et al. 8; Li and Liu; Yang and Oshio 10659)	Frequent, emotionally dependent use; reassurance-seeking tendencies (Heng and Zhang 1781; Wang et al.)	Greater intensity in reassurance-seeking tendencies; overreliance in artificial consolation; distress in moments of chatbot unavailability; disclosure of private information (Coyne et al. 4; Zhang et al., 9; Zhou et al.; Kurian 134-135)
Avoidant	Suppression of emotional needs and wants; avoidance of vulnerability (Benoit 542; Cooke et al. 1104; Crittenden 339)	Low emotional demand; little risk of rejection or intimacy (Skjuve et al. 7; Lin and Hou 7)	Seeks validation of their independence; relies on chatbot for emotional disclosure (Lin and Hou 9; Zhang et al. 8-9; Bae et al. 2353)	Further withdrawal in intimate relations with peers; heightened privacy risk (Zimmerman et al. 1562, 1565; Mukhopadhyay et al. 8; Abd-Alrazaq et al. 13)
Disorganized	No consistent regulatory strategy;	Consistency; no emotional	Inconsistent reliance; fluctuates	May deepen emotional dysregulation; reinforce

	emotional volatility (Benoit 543; Smeekens et al. 371)	turbulence; non-threatening (Skjuve et al. 7)	between intense engagement and sudden withdrawal (Benoit 543)	maladaptive coping mechanisms; privacy risk with personal information being disclosed (Smeekens et al. 371; Mukhopadhyay et al. 8)

Children with secure attachment tend to have stable emotional regulating skills and are open to being vulnerable and sharing their emotions, which makes fellow humans good companions for them (Brumariu and Kerns 666; Cooke et al. 1113). Their comfort level relying on peers means they don't seek emotional fulfillment from AI chatbots (Lin and Hou 8). Securely attached children instead find appeal in the informational and educational features AI provides (Holstein et al. 156). Hence, children with secure attachment are likely to view AI as a tool-based appliance and seek minimal emotional reliance, linking to low potential risk for socioemotional harm, but a moderate risk for receiving misinformation from chatbots (Lin and Hou 8; Zhou et al.).

Children with anxious attachment tend to have hypervigilant reassurance-seeking tendencies and difficulty self-soothing, leading them to find appeal in chatbots' features of constant availability, responsiveness, and validation (Zimmer-Gembeck et al. 3; Skjuve et al. 7). These children's unmet needs directly align with chatbots' accessibility, making them susceptible to emotionally dependent relationships with chatbots (Bretherton 767; Wang et al.; Li and Liu; Yang and Oshio 10659). This paper, therefore, proposes that children with anxious attachment are likely to engage with chatbots frequently in an emotionally dependent, reassurance-seeking pattern (Heng and Zhang 1781). This can lead to distress in moments when the chatbot is not readily available, greater intensity in their reassurance-seeking tendencies, and an overreliance on chatbot consolidation leading to disclosure of personal information (Coyne et al. 4; Zhang et al. 9; Mukhopadhyay et al. 8; Kurian 134-135).

Children with avoidant attachment tend to have trouble being emotionally vulnerable and suppress their emotional needs and wants (Benoit 542; Cooke et al. 1104; Crittenden 339). This is linked with the fear of rejection and intimacy that comes with human interaction, leading them to find appeal in AI chatbots' low emotional demand (Skjuve et al. 7; Lin and Hou 9; Zhang et al. 8-9). AI becomes a safe place for them to be vulnerable and open in a way that was not reciprocated by their primary caregivers in infancy (Xie and Pentina 2054; Bae et al. 2353). Therefore, children with avoidant attachment are likely to seek validation in the independence they have in not depending on real people and connections, instead relying on chatbots for emotional disclosure, which may lead to a heightened privacy risk and further withdrawal in intimate relations with peers (Lin and Hou 9; Mukhopadhyay et al. 8; Zimmerman et al. 1562, 1565).

Children with disorganized attachment tend to lack a consistent regulatory strategy and face emotional volatility, making AI's consistency, absence of emotional turbulence, and nonthreatening nature especially appealing (Benoit 543; Smeekens et al. 371). These children who have likely endured caregivers of frightening and unpredictable character find comfort in

chatbots' opposite disposition (Skjuve et al. 7). Hence, children with disorganized attachment are likely to have a pattern of inconsistent reliance on AI chatbots, often having fluctuations of intense engagement, which leads to privacy risks of personal information, and sudden withdrawal, potentially leading to deeper emotional dysregulation and a reinforcement of their maladaptive coping mechanisms (Smeekens et al. 371; Mukhopadhyay et al. 8).

5. Discussion

5.1 Main Interpretation

This paper synthesizes how early interactions in infant-caregiver relationships influence children's attachment styles and how those resulting emotional and behavioral tendencies may influence children's engagement with AI (see Table 3). It explores how chatbots have begun to fulfill those unmet needs children have not received and how this raises concern for children's development.

Chatbot use cannot be evaluated only by screen time, frequency of use, or duration of conversations. What poses real nuance is the reason children turn to chatbots for support, what emotional function that support serves, whether it is supplemental or a replacement for human connection, how children react when the chatbot is unavailable, and what information they disclose to AI. The following section synthesizes the findings from reviewed literature to address the research questions guiding this paper.

This paper identifies four attachment types classified as secure, anxious, avoidant, and disorganized. Taken together, the literature suggests that attachment is not something innate but a learned response to the reliability of those around them. The findings imply that children's emotional regulation and support-seeking behaviors are built from the amount of consistent reliability and security their caregivers provided. Children learn how to regulate their emotions based on whether their early efforts for comfort were met or ignored and determine whether they can or cannot rely on others for support and what type of support they long to find. Securely attached children show better overall emotional regulation and greater capacity to seek social support during distress, because they have received consistent, positive responses from caregivers, giving them no reason to distrust others. Anxiously attached children show hyperactive tendencies in emotional regulation and support-seeking. The inconsistent responses they've received bring children to escalate their efforts for attention in hopes that support will come if they express it loudly and persistently enough. Avoidantly attached children tend to suppress their emotions and avoid seeking support from others. Their caregivers were likely dismissive of their distress, teaching them that expressing their needs did not mean they would be met. Disorganized attachment is categorized as having the most difficulties with regulation, lacking a clear coping strategy and showing the strongest links to emotional and behavioral dysregulation. This likely stems from their caregivers being a source of fear or unpredictability.

Findings also indicate that emotional reliance takes on distinct patterns of emotional reliance on AI chatbots regarding the emotional needs and relational tendencies users bring to the

interaction. Children with secure attachment tend to already receive emotional validation and reassurance from their community, usually leaving them interacting with chatbots in a supplementary way for education or informational matters. Children with anxious attachment tend to bring heightened needs for reassurance in their interactions with AI. These children are primed to seek that consistent and frequent communication is available, leading them to be especially drawn to the nature of chatbots that respond immediately and consistently. This can result in a strong parasocial relationship with AI. Children with avoidant attachment tend to bring their emotional difficulty in being vulnerable into conversations with AI. A chatbot's low-risk, non-judgmental features perfectly align with what avoidantly attached children need because they give them a way to disclose their personal information without feeling exposed. Children with disorganized attachment tend to bring their inconsistent patterns of coping into conversations. Without a consistent approach to seek or avoid support, children interact with chatbots in varying intensity, swinging between over-reliance and withdrawal. These children face the biggest risk of compulsive use among the four attachment styles.

Taken together, the literature suggests that early attachment styles function as the underlying mechanism that influences both the type and degree of reliance children develop toward AI chatbots. Attachment style shapes a child's internal working model that discerns whether others can be relied upon, as well as how children interpret and respond to chatbots' constant availability, non-judgmental responsiveness, and attentiveness. Securely attached children show the lowest degree of reliance, engaging with AI supplementally, not replacing human support. The socioemotional risk is minimal to misinformation or unauthorized use. Anxiously attached children show a moderate to high level of reliance on chatbots, usually seeking the reassurance they haven't received from caregivers. The risks lie in this interaction intensifying children's underlying anxiety and reinforcing dependence on external forces rather than building self-regulating skills. Avoidantly attached children appear to have minimal reliance on chatbots on the surface but show a more concerning reliance. Chatbots offer an outlet for personal and emotional matters that they are unwilling to share with others, which risks reinforcing their avoidance of human vulnerability and deepens their social withdrawal. Disorganized attachment implies the highest and least predictable degree of reliance, given the children's lack of a coherent coping strategy. This also carries the highest socioemotional risk, showing inconsistent, intense patterns of disclosure that heighten the chance of compulsive overuse and exacerbate emotional dysregulation.

Table 3. Attachment Style and Socioemotional Consequences

Attachment Style	Socioemotional Consequence	Key Supporting Evidence
Secure	Instrumental use; low emotional dependence	Brumariu and Kerns; Lin and Hou
Anxious	Reassurance-seeking; frequent checking; strong parasocial bond	Heng and Zhang; Li and Liu

Avoidant	Preference for AI over human support in emotional disclosure; emotional distancing from real relationships	Lin and Hou; Xie and Pentina
Disorganized	Inconsistent, intense emotional disclosure; risk of compulsive overuse	Brumariu & Kerns; Zhang et al.

The theoretical framework proposed in this review concludes that reducing children's reliance on AI chatbots cannot be resolved by one single party. Instead, the responsibility of addressing this matter is distributed across every party involved in these children's environments.

Parents and caregivers are best positioned to prevent reliance before it begins by meeting children's emotional needs consistently and receptively so that a chatbot's features hold little appeal. Where reliance does emerge, parents can watch for the emotional and behavioral tendencies their children may have when interacting with AI and fill those emotional gaps. Parents should be a safe outlet for children to rely on, not the opposite, where children have to seek conversational AI for emotional relief.

Schools share the responsibility to educate kids at a larger scale, such as teaching AI literacy alongside social-emotional literacy so children understand not just how chatbots work but how chatbots might generate that artificial feeling of understanding and why it might not be as beneficial for their emotional regulation as it feels. This includes explaining hallucinations, fabricated or incorrect information shared with AI, and privacy risks directly as well as, more importantly, ensuring that when children cannot turn to their caregivers, they are still able to access human support through teachers or counselors.

Designers hold direct responsibility to control the features this paper identifies as most appealing to vulnerable children, such as constant availability, non-judgmental responsiveness, and unconditional engagement. This responsibility means building in reminders that the system is not human, setting age-appropriate limits on the conversational design of chatbots, and directing children toward trusted adults during real distress rather than positioning chatbots as sufficient comfort. Designers should also avoid interactions implying the chatbot genuinely loves, needs, or depends on the child, a design choice that risks anthropomorphizing chatbots and reinforcing attachment-seeking behavior in children prone to it. Additionally, when children are using AI supplementally, designers should ensure that the information they receive is accurate or otherwise provide a warning of the misinformation that AI might supply.

Policymakers are responsible for the systemic layer parents, schools, and designers cannot address alone, such as requiring child-sensitive risk assessments, regulating engagement designs that function as emotionally manipulative, enforcing stronger data safeguards specifically for children, and examining whether companion chatbots use engagement features that encourage dependency.

5.2 Theoretical Contribution

This review's central contribution is to connect childhood attachment theory, a decades-old framework, with the comparatively recent literature on conversational AI chatbots, a widely unexplored field, especially regarding children. In doing so, this paper expands beyond the existing tendency to categorize attachment as just insecure and secure, exploring all four types to distinguish each distinct pattern of AI reliance rather than a single generalized consensus of dependency.

This distinction carries a broader theoretical shift, redirecting attention to the emotional function that conversational chatbot serves rather than evaluating children's AI use and reliance solely by how much time they spend with a chatbot. Depending on each child's needs, they can spend the same amount of time doing something entirely different. One may be receiving educational guidance while the other is using it to compensate for unmet emotional needs. This is why the same usage does not translate to the same risks but lies in the interaction between the chatbot and tendencies a child brings to it based on their attachment.

5.3 Limitations

This paper is subject to several limitations, largely because this is a literature review rather than an empirical study. Therefore, the limitations are stated clearly to contextualize the framework proposed and guide future research. *Limited child-specific evidence.* Very few studies have applied an attachment framework directly to children's AI use. Much of the reasoning connecting attachment style to AI reliance patterns relies on synthesizing adult-focused literature on AI connection with child-focused attachment literature, rather than drawing from studies that examine both.

Causality cannot be established. The relationships proposed in this framework are correlational and theoretical, not causal. Experiments necessary for establishing causation remain difficult to perform due to ethical guidelines. Manipulating a child's attachment security or AI exposure to test for harm would violate research guidelines around avoiding harm to participants. As a result, the patterns proposed should be treated as hypotheses for future research.

Attachment remains relatively stable, but not necessarily static in every case. The literature reviewed, particularly Ding et al., indicates that attachment is highly consistent over time, with roughly 90% of securely attached infants and 85% of insecurely attached infants having retained the classification into early childhood. This supports treating attachment as a relatively stable trait, which is the underlying assumption of the framework proposed in this paper. However, this paper does not examine the subset of cases where attachment does shift, nor the specific conditions (such as major changes in caregiving or environment) that might account for that instability. As a result, the framework proposed should be understood as most applicable to children whose attachment patterns remain consistent and may be less predictive for those who experience a shift in attachment over time.

Individual and contextual differences. This study's framework centers attachment style as the primary explanatory factor, but several other individual and contextual variables likely shape children's AI reliance:

1) *Age*: This paper does not clearly define the specific age ranges for "infancy" versus "childhood," instead relying on the standard classifications used within the cited literature.

2) *Personality/temperament*: This paper does not examine how temperament might alter the proposed attachment-based patterns.

3) *Loneliness*: While loneliness appears as a contributing factor in several cited studies, it is not treated as an independent variable in this paper's framework and is only focused on attachment styles.

4) *Previous technology experience*: Prior exposure to AI or other technologies, which may shape a child's expectations and behavior, is not addressed.

5) *Chatbot design*: This paper does not methodically compare design types and treats conversational AI as a baseline category.

6) *Socioeconomic conditions*: This paper does not address how financial or socioeconomic factors might affect access to AI, human support, or attachment security.

Publication selection limitations. This paper is subject to the limitations of its own inclusion/exclusion criteria. The decisions regarding these criteria narrow the scope of evidence considered and may introduce selection bias by excluding relevant findings that fell outside these boundaries.

5.4 Future Research

The framework proposed suggests several directions for future research. Surveys measuring attachment style alongside chatbot reliance in children could test the four proposed patterns against real data, rather than inferred literature. Interviews with children and parents could capture the emotional reasoning behind chatbot use and how AI is perceived.

Since causality could not be established here, longitudinal research could supplementally be used to test whether attachment predicts AI reliance over time and to capture cases where attachment itself shifts. Comparisons between instrumental and companion-based chatbot designs would also test the extent to which chatbot design could impact reliance, including differences across voice-based, text-based, companion-branded, and general-purpose systems.

Future studies should examine children's reactions when the chatbot becomes unavailable, proposed here as an indicator of dependence but not yet tested directly, and whether AI supplements or replaces human support over time. Finally, testing any of these directions would require age-appropriate measures of emotional AI reliance, since existing studies were largely designed for adults, not children.

6. Conclusion

Children are increasingly engaging in responsive AI systems during a critical period of development consisting of the formation of attachment and emotional regulation. This paper argues that attachment theory offers a perspective for understanding this engagement. Children do not engage with the same chatbots in the same ways but bring distinct emotional needs and behavioral tendencies shaped by their early caregiving experiences, predicting different forms of

AI reliance. Securely attached children tend to use AI instrumentally. Anxiously attached children interact hyperactively, seeking reassurance. Avoidantly attached children rely on chatbots for vulnerable emotion disclosure. Disorganized attached children interact in intense, inconsistent manners. The central contribution of this paper is that it synthesized the previous findings to come up with a framework that incorporates all four attachment types and their influence on AI chatbot reliance. Another key contribution is the proposal that these four patterns of attachment regarding conversational AI chatbots should be further explored moving forward. Researchers, educators, designers, and policymakers should therefore examine the psychological function chatbots serve for different children, rather than treating all chatbot engagement as equally beneficial or harmful, a distinction that will grow more consequential as AI becomes further embedded in childhood.

Works Cited

Abd-Alrazaq, Alaa A., et al. "An Overview of the Features of Chatbots in Mental Health: A Scoping Review." International Journal of Medical Informatics, vol. 132, 2019, p. 103978.

Bae, Seoyeon, Yoon Kyung Lee, and Sowon Hahn. "Friendly-Bot: The Impact of Chatbot Appearance and Relationship Style on User Trust." Proceedings of the Annual Meeting of the Cognitive Science Society, vol. 45, no. 45, 2023.

Benoit, Diane. "Infant-Parent Attachment: Definition, Types, Antecedents, Measurement and Outcome." Paediatrics & Child Health, vol. 9, no. 8, 2004, pp. 541-545.

Bretherton, Inge. "The origins of attachment theory: John Bowlby and Mary Ainsworth." Developmental psychology 28.5 (1992): 759.

Brumariu, Laura E., and Kathryn A. Kerns. "Mother–Child Attachment Patterns and Different Types of Anxiety Symptoms: Is There Specificity of Relations?" Child Psychiatry & Human Development, vol. 41, no. 6, 2010, pp. 663-674.

Buttazzo, Giorgio. "Rise of Artificial General Intelligence: Risks and Opportunities." Frontiers in Artificial Intelligence, vol. 6, 2023, p. 1226990.

Chambers, Joanna. "The neurobiology of attachment: from infancy to clinical outcomes." Psychodynamic psychiatry 45.4 (2017): 542-563.

Cho, Won Ik, et al. "Assessing How Users Display Self-Disclosure and Authenticity in Conversation with Human-Like Agents: A Case Study of Luda Lee." Findings of the Association for Computational Linguistics: AACL-IJCNLP 2022, 2022, pp. 145-152.

Colonnesi, Cristina, et al. "The relation between insecure attachment and child anxiety: A meta-analytic review." Journal of Clinical Child & Adolescent Psychology 40.4 (2011): 630-645.

Cooke, Jessica E., et al. "Parent–Child Attachment and Children's Experience and Regulation of Emotion: A Meta-Analytic Review." Emotion, vol. 19, no. 6, 2019, p. 1103.

Coyne, Sarah M., et al. "Chatbots and Childhood: A Research Brief on the Associations Between Artificial Intelligence Use, Problematic Media Use, and Socioemotional Problems in Children from the United States." Journal of Children and Media, 2026, pp. 1-12.

Crittenden, Patricia M. "Children's strategies for coping with adverse home environments: An interpretation using attachment theory." Child Abuse & Neglect 16.3 (1992): 329-343.

Ding, Yan-hua, et al. "The Relation of Infant Attachment to Attachment and Cognitive and Behavioural Outcomes in Early Childhood." Early Human Development, vol. 90, no. 9, 2014, pp. 459-464.

Doinita, Nanu Elena, and Nijloveanu Dorina Maria. "Attachment and Parenting Styles." Procedia-Social and Behavioral Sciences, vol. 203, 2015, pp. 199-204.

Følstad, Asbjørn, Marita Skjuve, and Petter Bae Brandtzaeg. "Different Chatbots for Different Purposes: Towards a Typology of Chatbots to Understand Interaction Design." International Conference on Internet Science, Springer International Publishing, 2018, pp. 145-156.

Groh, Ashley M., et al. "The significance of insecure and disorganized attachment for children's internalizing symptoms: A meta-analytic study." Child development 83.2 (2012): 591-610.

Heng, Shupeng, and Ziwan Zhang. "Attachment Anxiety and Problematic Use of Conversational Artificial Intelligence: Mediation of Emotional Attachment and Moderation of Anthropomorphic Tendencies." Psychology Research and Behavior Management, 2025, pp. 1775-1785.

Holstein, Kenneth, Bruce M. McLaren, and Vincent Aleven. "Student Learning Benefits of a Mixed-Reality Teacher Awareness Tool in AI-Enhanced Classrooms." International Conference on Artificial Intelligence in Education, Springer International Publishing, 2018, pp. 154-168.

Hong, Yoo Rha, and Jae Sun Park. "Impact of Attachment, Temperament and Parenting on Human Development." Korean Journal of Pediatrics, vol. 55, no. 12, 2012, p. 449.

Johnson, Susan C., Carol S. Dweck, and Frances S. Chen. "Evidence for Infants' Internal Working Models of Attachment." Psychological Science, vol. 18, no. 6, 2007, p. 501.

Kim, Pilyoung, et al. "Young Children's Anthropomorphism of an AI Chatbot: Brain Activation and the Role of Parent Co-Presence." arXiv preprint arXiv:2512.02179, 2025.

Kurian, Nomisha. "AI's Empathy Gap: The Risks of Conversational Artificial Intelligence for Young Children's Well-Being and Key Ethical Considerations for Early Childhood Education and Care." Contemporary Issues in Early Childhood, vol. 26, no. 1, 2025, pp. 132-139.

Kwon, Yubeen, and Sungook Hong. "The Fall and Rise of Iruda: Reassembling AI Through Ethics-in-Action." Social Studies of Science, vol. 56, no. 1, 2026, pp. 53-74.

Li, Yuhao, and Yixuan Liu. "The Influence of Attachment Style Variations on Problematic Use of AI Chatbots: A Mediation Study of Social Anxiety and Human-Robot Empathy." 2025.

Lin, Ziqi, and Taiyu Hou. "Attachment Styles and AI Chatbot Interactions Among College Students." arXiv preprint arXiv:2601.04217, 2025.

Liu, Auren R., Pat Pataranutaporn, and Pattie Maes. "Chatbot companionship: a mixed-methods study of companion chatbot usage patterns and their relationship to loneliness in active users." arXiv preprint arXiv:2410.21596 (2024).

Movahed, Saniya Vahedian, and Fred Martin. "Ask Me Anything: Exploring Children's Attitudes Toward an Age-Tailored AI-Powered Chatbot." arXiv preprint arXiv:2502.14217, 2025.

Mukhopadhyay, Srija, et al. "PrivacyBench: A Conversational Benchmark for Evaluating Privacy in Personalized AI." arXiv preprint arXiv:2512.24848 (2025).

Raees, Muhammad, et al. "Do People Appropriately Rely on AI-Advice? An Analytical Review of HCI Research on Human-AI Decision-Making." Proceedings of the 2026 CHI Conference on Human Factors in Computing Systems. 2026.

Redshaw, Maggie, and Colin Martin. "Babies, 'Bonding' and Ideas About Parental 'Attachment.'" Journal of Reproductive and Infant Psychology, vol. 31, no. 3, 2013, pp. 219-221.

Siegel, Daniel J. "Toward an interpersonal neurobiology of the developing mind: Attachment relationships,“mindsight,” and neural integration." Infant Mental Health Journal: official publication of the world association for infant mental health 22.1‐2 (2001): 67-94.

Skjuve, Marita, et al. "A Longitudinal Study of Human–Chatbot Relationships." International Journal of Human-Computer Studies, vol. 168, 2022, p. 102903.

Smeekens, Sanny, J. Marianne Riksen-Walraven, and Hedwig J. A. Van Bakel. "The Predictive Value of Different Infant Attachment Measures for Socioemotional Development at Age 5 Years." Infant Mental Health Journal, vol. 30, no. 4, 2009, pp. 366-383.

Tottenham, Nim, and Margaret A. Sheridan. "A review of adversity, the amygdala and the hippocampus: a consideration of developmental timing." Frontiers in human neuroscience 3 (2010): 1019.

Wang, Marx, et al. "Do Attachment Styles Shape ChatGPT Usage?" The 2026 ACM Conference on Fairness, Accountability, and Transparency, 2026.

Xie, Tianling, and Iryna Pentina. "Attachment Theory as a Framework to Understand Relationships with Social Chatbots: A Case Study of Replika." 2022.

Yang, Fan, and Atsushi Oshio. "Using Attachment Theory to Conceptualize and Measure the Experiences in Human-AI Relationships." Current Psychology, vol. 44, no. 11, 2025, pp. 10658-10669.

Ying, Jasper F. The Relationship Between Internalizing Symptoms and Chat Artificial Intelligence Usage: Examining Insecure Adult Attachment Styles as Moderators. Diss. California State University, Northridge, 2025.

Zhang, Qiyang, et al. "Chatbots for Children and Adolescents: A Meta-Analysis of Chatbots for Mental Health Issues and Psychosocial Well-Being Outcomes." Adolescent Research Review, vol. 11, no. 2, 2026, pp. 249-271.

Zhang, Yutong, et al. "The Rise of AI Companions: How Human-Chatbot Relationships Influence Well-Being." arXiv preprint arXiv:2506.12605, 2025.

Zhou, Jiawei, et al. "Synthetic lies: Understanding ai-generated misinformation and evaluating algorithmic and human solutions." Proceedings of the 2023 CHI conference on human factors in computing systems. 2023.

Zimmer-Gembeck, Melanie J., et al. "Is Parent–Child Attachment a Correlate of Children's Emotion Regulation and Coping?" International Journal of Behavioral Development, vol. 41, no. 1, 2017, pp. 74-93.

Zimmerman, Anne, Joel Janhonen, and Emily Beer. "Human/AI Relationships: Challenges, Downsides, and Impacts on Human/Human Relationships." AI and Ethics, vol. 4, no. 4, 2024, pp. 1555-1567.

The Influence of Suggestive Questioning On Reconstructive Memory
By Mahathi Karthikeyan

Introduction

Memory is a fundamental cognitive process that is involved in encoding, storing, and retrieving information about past experiences. However, memory is not always a perfect record of events. In 1974, Loftus and Palmer proposed the theory of reconstructive memory to explain how memory can be influenced by external information and leading questions. The theory proposes that when an individual recalls an event, their memories can be altered by the way questions are phrased or by other post-event information. This has a significant impact in the real world, as eyewitness testimony can be inaccurate, and memories may not be retrieved exactly as how they occurred (Loftus & Palmer, 1974).

Loftus and Palmer's (1974) original study aimed to investigate how the wording of leading questions with regards to witnessing a car crash can distort memory. The key question, which asked participants about the speed of the cars when they crashed, varied in the verbs that were used to describe the collision (e.g., "smashed," "collided," "bumped," "hit," or contacted"). The researchers found out that the participants who were asked using more intense verbs, such as "smashed," estimated higher speeds for the cars. These results suggested that memory is reconstructive and can be influenced by the phrasing of questions (Loftus & Palmer, 1974).

Our experiment aims to investigate how the use of three specific verbs (contacted, bumped, or crashed) affects the participants' estimation of the vehicle's speed during a video of a car crash. By replicating and adapting Loftus and Palmer's (1974) research, our study explores how verb choice affects participants' perception of severity and memory recall. This research is relevant because it has important real-world implications in legal and forensic contexts as it evaluates the accuracy of eyewitness accounts.

The aim of this study is to investigate how the use of three specific verbs influences the participants' memory of a car crash video in a population of 16-17 year olds in a public high school. The independent variable is the intensity of the verb used in the critical question about the car crash. This variable has three different levels: contacted (least intense), bumped, and crashed (most intense). The dependent variable is the estimated speed of the car (in mph) given by the participants after watching the car crash video.

Null Hypothesis (H_0): The verb used in the question (contacted, bumped, or crashed) will have no effect on the participant's estimated speed of the vehicles.

Research Hypothesis (H_1): If participants are asked about a car crash video using the more intense words such as "crashed," then they will likely estimate higher speeds for the vehicles than the participants that were asked using the milder verbs such as "bumped" or "contacted". This is because stronger verbs lead to greater perceptions of severity, which influences memory reconstruction.

Exploration

This experiment used an independent samples design with each participant only being in one of three conditions which helped to avoid demand characteristics by reflecting the influence of one verb without the interference from other conditions.

The sample was drawn from the 16 to 17 year old population as part of an IB Theory of Knowledge class, so differences in memory recall due to age was avoided in the duration of this experiment. Furthermore none of the participants had taken a psychology class so they were not likely to know anything about reconstructive memory theory and therefore their response had less likelihood of being susceptible to demand characteristics. The sample consisted of 36 participants (15 males, 21 females). In order to control participant variability, participants were randomly assigned to one of the three verb groups with a minimum of 10 per group.

Participants were recruited from one classroom using convenience sampling. This was due to availability constraints and allowed us to easily select participants fitting our target population.

Researchers spun a wheel labeled Version A, B, or C, which corresponded to the three verb conditions, allowing each participant to be randomly assigned.

Participants first watched a short video of a car crash, afterwards, they were then given a questionnaire (Appendix D) with five questions, with speed-estimate question and four distractor questions. Participants were not told that the speed question was the one that mattered for the data collection but rather instructed to answer all questions to the best of their knowledge. The materials included were: the video clip and three versions of the questionnaire. The procedure was based on Loftus and Palmer's (1974) study. A pilot study was conducted before the experiment began with a small group of students to ensure that the video was clear, the questions were understandable, and that participants could provide speed estimates without confusion. Then adjustments to the wording of the questionnaire and video choice were made based on the feedback given by the pilot study.

Ethical considerations of this experiment included informed consent, the right to withdraw, and debriefing. The consent form (Appendix A) clearly stated the purpose of the study and informed participants of the rights they held. The debriefing notes (Appendix C) explained the true aim of the experiment following completion. Additionally the video chosen for this experiment (Appendix G) was made sure beforehand to not cause any undue stress or harm to the participants.

Three controls were put in place in order to avoid confounding variables. Each participant watched the same video and was given the same instructions. Then, the experiment was conducted in an IB Theory of Knowledge class with the participants all aged 16-17, so all shared similar academic backgrounds.. Lastly, there was a pilot study conducted before the experiment to refine materials and the procedure. This helped to reduce potential misunderstandings that could confound the results. These controls together ensured that the subjects' speed estimate of the cars was only affected by the manipulation of the verb in the question. This allowed valid conclusions to be drawn about the effect of different verbs (contacted, bumped, and crashed) in a question on reconstruction of memory.

Analysis

	Version A (Contacted)	Version B (Bumped)	Version C (Crashed)
Mean	43.08	40.82	45.2
Standard Deviation	10.9	16.74	13.39

Fig 1: Descriptive Statistics Regarding Estimated Speeds (mph)

The descriptive statistics from the table above include mean and standard deviation for all 3 conditions. It shows that the mean speed estimates appear similar across all conditions, with Version A (contacted) at 43.08, Version B (Bumped) at 40.82, and Version C (Crashed) at 45.2. The standard deviations show some variation, with Version B having the greatest variation in responses (16.74), Version A at the lowest variation in responses (10.90), and Version C in the middle (13.39). The bar graph below visually reflects all conditions showing around the same height though, Version C being the highest while Version B at the lowest. Version A results were higher than Version B, even though Version A (contacted) was predicted to be lowest and Version B to be higher according to the research hypothesis. Additionally, there weren't any outliers from the results of the experiment because all the participants were given a range of 15-70 mph in their questionnaires (Appendices D, E, F), so all estimates stayed within that range as seen in the raw data (Appendix H).

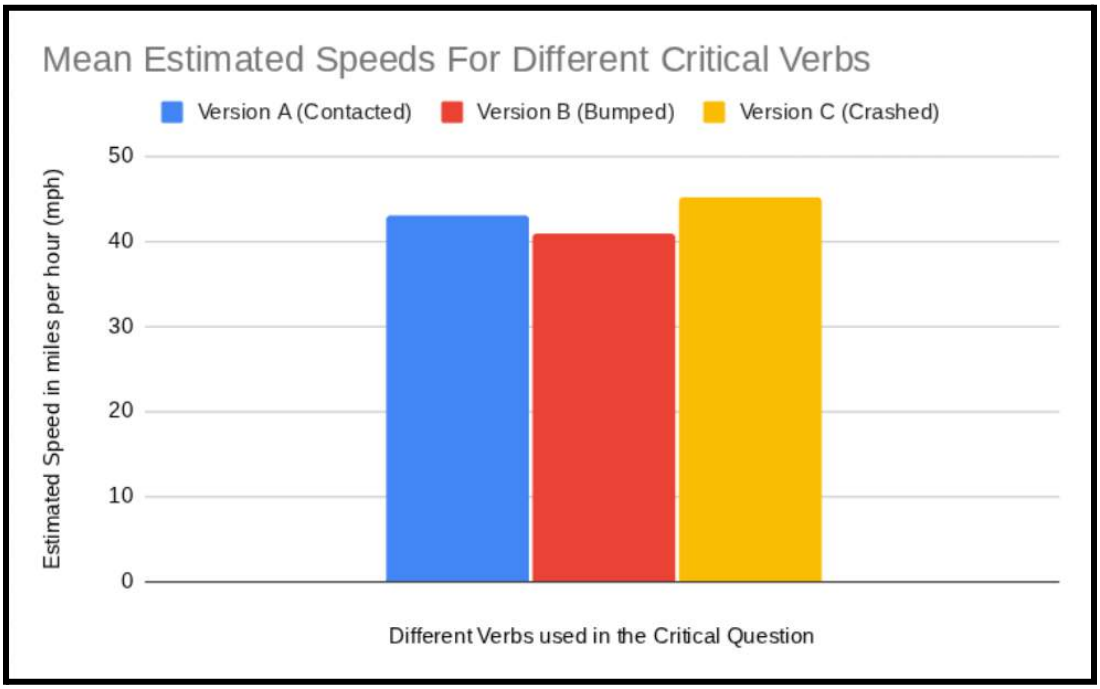


Fig 2: Graph of Mean Estimated Speeds for Different Critical Verbs

As an independent sample design along with ratio data was implemented in this experiment, the Mann Whitney U test was used to determine the significance of the data collected. The p-values were: Version A & B (U_a=63) p=0.32, Version B & C- (U_a=66) p=0.23, and Version A & C (U_a=75.5) p=0.27 (Appendix I) Since all p-values are greater than 0.05, the null hypothesis is retained, indicating that the verb used in the question (contacted, bumped, or crashed) has no effect on the participants' estimated speed of the vehicles.

Evaluation

The results from the present study were different from the original study. The original Loftus and Palmer (1974) was able to support the hypothesis that the wording of questions can influence eyewitness memory. This study on the other hand had failed to reject the null hypothesis and concluded that the wording of a question had no effect on the participants' estimated speed of the vehicles. The results of this study may have been different from the original due to several factors such as; The type of video shown to the participants might have altered the results as the one used in this study might have been less realistic or less emotionally engaging than the original study's crash footage, therefore reducing the impact of the verbs used. Additionally, the replication was not carried out in a controlled laboratory setting such as the original, so distractions and other outside factors may have affected the participants' attention. These factors combined would explain why the present study did not produce results similar to the original study, despite it following the same general procedure.

The underlying theory of this study was the reconstructive memory theory, which suggests that memories are not exact copies of events but are rather reconstructed using prior knowledge, expectations and information received. This means that the way questions are worded can influence how people remember and report what they saw. In this study, however, the verb in the critical question did not affect the participants' speed estimates. This could have been due to various factors such as age, experience, general knowledge, and skills which differ from one participant to another. Therefore, even though reconstructive memory theory predicts that wording of a question influences memory, the conditions of the experiment may have reduced the effect of the independent variable.

The research design chosen for this experiment was independent samples. A strength of this design is that it reduces the likelihood of order effects and demand characteristics as each participant was only exposed to one verb condition. This increases internal validity because then participants are less likely to compare different verbs or guess the aim of the study which would affect the results of the experiment. On the other hand, a limitation of this design is participant variability. Though all of the participants are aged between 16-17 and have around the same level of knowledge, their responses would have variation due to individual differences in how they perceive and interpret the video. Some have differences in skills such as driving, their attention to the video (especially in a large classroom environment) or their ability to estimate speed which could have influenced how they responded rather than the wording of the question. In the future, this limitation could be addressed by using a more controlled environment by selecting

participants who have similar levels of driving experience. This would reduce differences in their driving skills as well as attention between different groups, which lowers participant variability while still using an independent samples design.

One strength of the sample is that all participants were aged between 16-17 with similar academic backgrounds. This reduced age-related differences in memory ability and cognitive development which increased internal validity because the differences in their speed estimates were less likely to be caused by differences in their age. Additionally, none of the participants had taken psychology classes before which reduces the likelihood of demand characteristics affecting the results. One limitation of the sample is that it was obtained using convenience sampling from a single IB Theory of Knowledge class at one public high school. Although this increases internal validity, it limits population generalizability as the sample may not be representative of the wider population of eyewitnesses, such as adults or individuals from different educational/cultural backgrounds. In the future, this limitation could be addressed by recruiting older participants from a more diverse educational and cultural background. This would improve population validity by allowing the findings to be generalized beyond students at a high school setting.

The strength of the procedure is that all participants followed the same standardized steps. Everyone watched the same video, received the same instructions, and completed the questionnaire in the same order (with only the verb in the critical question changing). This increased internal validity because it ensured that any differences in speed estimates were due to the wording of the question rather than any procedural differences. One limitation of the procedure is that the experiment was conducted in a classroom setting rather than a controlled laboratory environment. This may have allowed extraneous variables (such as background noise/movement, peers all sitting together, etc..) to influence the participants' focus during the video/questionnaire. In the future, this limitation could be addressed by conducting the experiment one participant at a time in a quiet, controlled room with minimal distractions. This would help reduce the influence of extraneous variables, and would strengthen the reliability and validity of the results.

Overall, the results of this study indicate that the verb used in the critical question (contacted, bumped, or crashed) did not have a significant effect on the participants' speed estimates. This suggests that in the experiment, the independent variable (the verb used) did not induce the dependent variable (estimated speed of the vehicles).

Works Cited

McLeod, Saul. “Loftus and Palmer 1974 | Car Crash Experiment.” Simply Psychology, https://www.simplypsychology.org/loftus-palmer.html. Accessed 30 July 2026.

“YouTube.” YouTube, https://www.youtube.com/watch?v=Rg5bBJQOL74. Accessed 30 July 2026.

Doomscrolling and Self-Perceived Attention Span Among High School Students
By Rhythm Ramkumar

Abstract

This study set out to explore the relationship between doomscrolling and self-perceived attention span among high school students, addressing a gap in a literature that has, up to this point, concerned itself largely with the emotional fallout of doomscrolling rather than its potential effects on cognition. A survey was administered to 55 ninth and tenth graders at Monta Vista High School in Cupertino, California in January 2026, and what was discovered was widespread awareness of doomscrolling paired with high levels of weekly screen time and a prevalent sense among students that their attention spans had shortened, even though most did not connect these habits to any decline in their grades. Because the study is preliminary, single-site, and built entirely on self-report, its findings should be read descriptively rather than conclusively, and future work employing validated cognitive measures and longitudinal designs is recommended.

Introduction

Doomscrolling refers to the repetitive act of continuously scrolling through negative or distressing content on social media or news platforms (Cassidy), and this behavior has grown increasingly common among adolescents as digital media consumption climbs. Among U.S. teenagers specifically, adoption of these platforms is close to universal: roughly nine in ten use YouTube, and about six in ten use TikTok and Instagram (Faverio and Sidoti). As smartphones have folded themselves into nearly every hour of the day, teenage screen time has reached record levels (Rideout et al. 3). As adolescents spend more of their waking lives online, many fall into patterns like doomscrolling that may carry subtle but significant cognitive and emotional consequences (Wiederhold 279).

Doomscrolling tends to surface late at night or in moments of stress, when a person feels the pull to stay informed, or simply to be distracted for a while (Elhai et al. 252). Yet the steady diet of negative or emotionally charged content that results can heighten anxiety and dampen mood (Wheaton et al.), in part because social media algorithms are built to capture and hold attention, often by amplifying whatever is most sensational or emotionally provocative (Brady et al. 979). Over time, this kind of engagement may feed into elevated stress and information fatigue, and has been linked to impairments in attention, working memory, and task persistence (Kross et al. 56). For adolescents, whose brains are still developing the machinery of self-regulation and focus, these effects may land with particular force (Casey et al. 111).

While social media's relationship to mental health has been studied at length, doomscrolling itself remains a comparatively new and underexplored concept (Vanden Abeele 932). The term took hold during the COVID-19 pandemic, when people turned to their devices more than ever for information and connection (Sundar and Limperos 505). Existing research has tied doomscrolling to stress, anxiety, and depressive symptoms (Boukes and Vliegenthart 142; Bendau et al. 283), but has said comparatively little about its possible relationship to attention

span and academic performance in teenagers, a gap worth closing, given that attention is a foundational skill underlying learning, productivity, and emotional wellbeing (Steinmayr et al. 14).

This study investigates the relationship between doomscrolling and self-perceived attention among high school students at one school in the United States. A survey was distributed to students in grades 9 through 12 at Monta Vista High School, structured around four parts: an informed consent form, demographic questions, behavioral questions about social media habits, and a modified attention span assessment adapted from Psychology Today. The aim is not to settle the question but to offer a preliminary, descriptive account of how these emerging online behaviors relate to how adolescents experience their own cognition (Twenge and Campbell 311), and, if a consistent pattern emerges, to lend some support to the case for healthier digital literacy practices and more mindful media consumption among teenagers (UNICEF).

Methodology

This study relied on a survey-based design to examine the association between self-reported doomscrolling habits and self-perceived attentional change among high school students. The survey, distributed to students in grades 9 through 12 at Monta Vista High School, was organized into four sections: informed consent, demographic information, social media and doomscrolling habits, and a modified attention span assessment.

Participants and Consent

The first section laid out the purpose of the research, the expected duration of the survey, and participants' rights, including confidentiality and voluntary participation (American Psychological Association). Participation was voluntary throughout, and because every participant was a minor, parental or guardian consent was secured before any data were collected.

Demographic Information

The second section gathered age, gender, grade level, and school affiliation, information that would later allow for comparison between subgroups and provide context for interpreting the results.

Social Media and Doomscrolling Habits

The third section asked participants to report their weekly time spent on TikTok, Instagram, Snapchat, and YouTube, whether they kept a screen time limit, and whether they recognized the term "doomscrolling" (Elhai et al. 253). Those who said they did were also asked to describe it in their own words, which offered a qualitative window into how well they actually understood the behavior

Attention Span Assessment

The fourth section presented a 16-item Likert-scale instrument, adapted from the Attention Span Test developed by Psychology Today, scored from 0 (Never) to 5 (Always).

Items such as “Social media interferes with my grades,” “I am able to complete my homework without checking my phone,” and “I often leave tasks unfinished” were grouped into four domains: attention and focus, memory and recall, behavioral patterns, and self-perceived academic and cognitive impact.

Data Analysis

The data were analyzed descriptively, with means and frequency distributions calculated for every Likert-scale item and for screen time across platforms, in order to see whether a pattern connected reported doomscrolling duration to self-perceived attention difficulties. Because every measure was self-reported and the design was cross-sectional, what follows should be read as correlational rather than causal (Valkenburg and Piotrowski; Ophir et al. 15583), and given that the sample was drawn from a single site and skewed heavily toward 9th graders, its findings should not be generalized to the broader high school population without further replication. To test this association directly rather than relying on the co-occurrence of separately reported patterns, Spearman rank-order correlations were computed between weekly platform-specific screen time (TikTok and total device use) and two Likert items most directly tied to the study's research question: “I often get distracted when I'm supposed to be studying or doing homework” and “I believe my attention span is shorter than it used to be.” Spearman's coefficient was used rather than Pearson's given the ordinal, bounded, and non-normally distributed nature of Likert-scale responses; no correction for multiple comparisons was applied, and these tests should accordingly be treated as exploratory.

Results

Participant Overview

Fifty-five students from Monta Vista High School completed the survey on January 29, 2026. The sample leaned heavily toward 9th graders (n = 52; 94.5%), with a small number of 10th-grade participants (n = 2; 3.6%), and ranged in age from 13 to 15 (M = 14.3), with 14-year-olds forming the largest group (58.2%). Slightly more participants identified as female (56.4%, n = 31) than male (43.6%, n = 24). Table 1 summarizes these characteristics.

Characteristic	n	%
Total Participants	55	100%
Age		
Age 13	1	1.8%
Age 14	32	58.2%
Age 15	22	40.0%
Gender		
Female	31	56.4%
Male	24	43.6%
Grade		
9th Grade	52	94.5%
10th Grade	2	3.6%

Table 1: Demographic characteristics of participants. One participant did not report grade level.

Digital Media Consumption Patterns

Nearly every participant (98.2%) owned a smartphone, and the single student without one used a laptop to reach social media instead. Most students, about 67%, kept no set screen time limit, while roughly a third had one in place. Weekly device screen time varied enormously, from as little as 1 hour to as much as 120 hours (M = 22.3 hrs). Among the platforms surveyed, TikTok claimed the most time (M = 5.8 hrs), trailed by Snapchat (M = 5.1 hrs) and Instagram (M = 4.7 hrs), with YouTube pulling up the rear (M = 1.8 hrs). Figure 1 illustrates this breakdown.

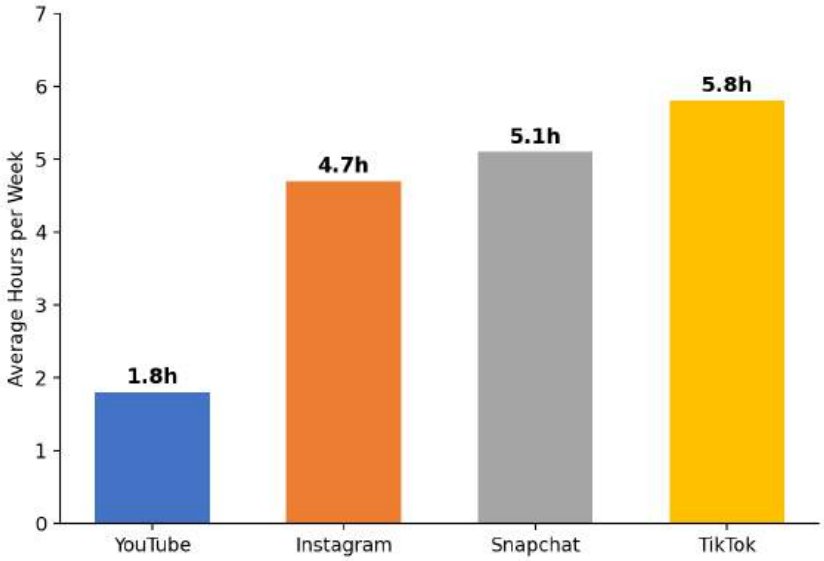


Fig 1: Mean self-reported weekly platform screen time in hours. Platform values exclude extreme outliers likely entered in minutes rather than hours.

Awareness of Doomscrolling

Doomscrolling, it turns out, is not a foreign concept to this population. When asked whether they knew the term, the overwhelming majority answered “Yes” or “To an extent,” and only 2 students (3.6%) said “No.” In their own words, most described it as scrolling through social media for long stretches without any real purpose, often continuing well past the point of enjoyment. A handful of students went further still, invoking dopamine reward systems and habitual compulsion to explain why the behavior is so hard to break.

Self-Perceived Cognitive and Behavioral Effects

Across the 16-item Likert scale, students' answers clustered into four domains: attention and focus, memory and recall, behavioral patterns, and self-perceived impact. Table 2 reports the means for every item, and Figure 2 highlights the endorsement rates for the impact statements that stood out most.

Attention and focus items produced moderate scores overall. Students reported a moderate-to-high ability to stay focused on a single task (M = 3.15) and to finish assignments without checking their phones (M = 3.06) and yet these same students also admitted to real distraction: 62.3% said they are often distracted while studying (M = 2.91), and 52.8% reported frequently switching between apps or tabs while trying to concentrate (M = 2.63).

Memory told a quieter story. The average score for quickly forgetting recently learned information stayed relatively low (M = 2.24), and students reported a moderate-to-high ability to recall material studied earlier in the day (M = 3.02). Of the four domains, memory and recall showed the least sign of self-perceived impact.

The self-perceived impact domain, however, is where the study's central tension surfaces: 61.2% of students felt that their attention span had gotten shorter over time (M = 2.70), and 54.0% reported feeling more distracted after long scrolling sessions (M = 2.69). Yet only 18.9% believed social media hurt their grades (M = 1.46), and just 34.0% felt their ability to concentrate in class had worsened (M = 1.96).

Domain	Survey Item	Mean	% Score ≥ 3
Attention and Focus	I can stay focused on a single task for a long period of time	3.15	—
	I often get distracted when studying or doing homework	2.91	62.3%
	I find myself switching between apps or tabs when trying to focus	2.63	52.8%
	I can complete assignments without checking my phone	3.06	—
Memory and Recall	I quickly forget information I just learned	2.24	—
	I can easily recall what I studied or read earlier in the day	3.02	—
Behavioral Patterns	I find it difficult to resist checking social media while doing homework	2.31	47.2%

	I often leave tasks unfinished because I get distracted by my phone	1.74	28.3%
	I use my phone while doing other activities (eating, studying, talking)	2.65	51.2%
Self-Perceived Impact	I feel more distracted after spending a long time scrolling on my phone	2.69	54.0%
	I believe my attention span is shorter than it used to be	2.70	61.2%
	My ability to concentrate in class is getting worse over time	1.96	34.0%
	Social media use interferes with my grades or school performance	1.46	18.9%
	I feel anxious or restless if I try to stay off my phone	1.85	31.2%

Table 2: Mean scores and endorsement rates on Likert-scale items by domain (0 = Never, 5 = Always). "% Score ≥ 3" shown only for items with meaningful endorsement rates.

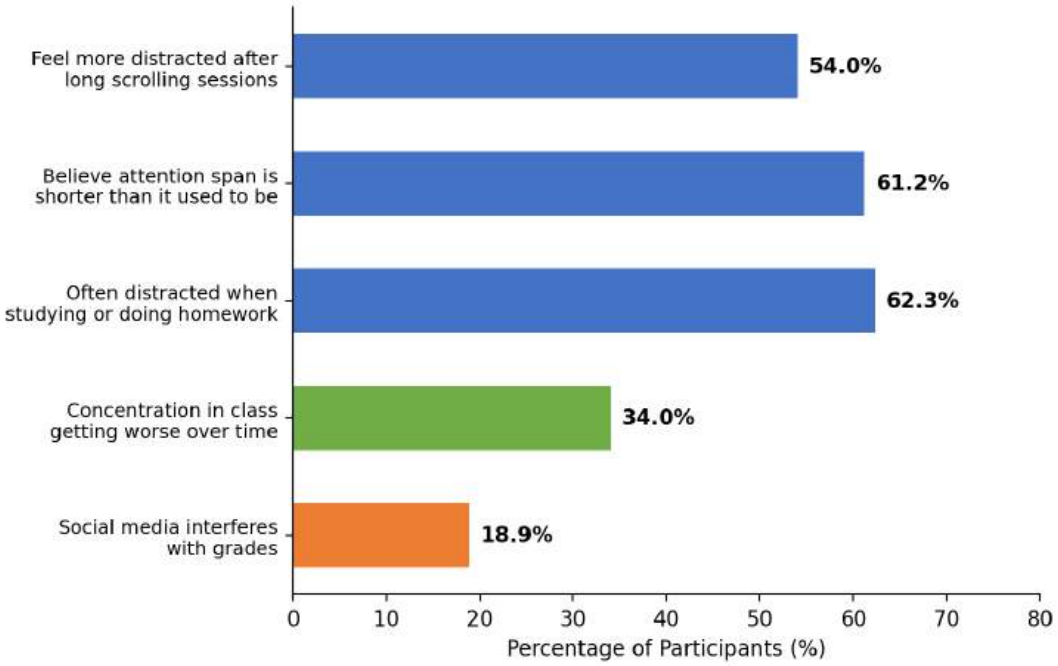


Fig 2: Percentage of participants endorsing key self-perceived impact statements (score ≥ 3).

Association Between Screen Time and Self-Perceived Attention

The descriptive patterns above establish that doomscrolling awareness, screen time, and self-perceived attentional difficulty co-occur in this sample, but co-occurrence alone does not establish that they are related to one another within individuals. To test this directly, Spearman rank-order correlations were computed between weekly TikTok hours, total weekly screen time, and the two Likert items most closely tied to the study's central question. Table 3 reports these results.

Comparison	n	Spearman ρ	p	Sig.
TikTok hrs/week × “attention span is shorter than it used to be”	49	.25	.089	ns
TikTok hrs/week × “distracted while studying/doing homework”	49	.31	.028	*
Total weekly screen time × “attention span is shorter than it used to be”	54	.17	.228	ns

Table 3: Spearman correlations between screen time measures and self-perceived attention items. * $p < .05$; ns = not significant. Correlations computed on complete cases for each pairing (n varies due to item-level missing data); no correction for multiple comparisons was applied.

TikTok use showed a small, statistically significant positive correlation with self-reported distraction while studying ($\rho = .31$, $p = .028$), consistent with the platform's short-form, high-frequency-switching format. Its correlation with the broader, more subjective item “my attention span is shorter than it used to be” was smaller and did not reach conventional significance ($\rho = .25$, $p = .089$), and total weekly screen time, which consists of in schoolwork, entertainment, and communication use, showed no significant relationship with perceived attention-span decline at all ($\rho = .17$, $p = .228$). Taken together, these results offer modest, platform-specific support for the study's central premise rather than a broad-based one: the strongest signal in this sample links a specific short-form platform to a concrete behavioral outcome (studying distraction), while the more diffuse, retrospective judgment that one's attention span has “gotten shorter” is not statistically distinguishable from chance variation once total screen time or even TikTok use is accounted for. Given the modest sample size and small effect sizes (all $\rho \leq .31$, meaning screen time measures explain at most roughly 10% of the variance in these items), these findings are best treated as hypothesis-generating rather than confirmatory.

Discussion

Overview of Findings

This study set out to examine how digital media consumption, doomscrolling in particular, relates to the attention habits of high school students at Monta Vista High School, and the 55 responses gathered here trace several descriptive patterns: heavy overall screen time, familiarity with doomscrolling, moderate self-reported distraction while studying, and a majority sense that attention spans have shortened. The sections that follow support these patterns within the existing literature, though given the limits of the sample and method, they are best read as preliminary rather than definitive.

Screen Time and Platform Usage

The screen time reported here tracks closely with national trends among teenagers (Rideout et al. 3). TikTok emerged as the most-used platform in this sample, with Snapchat and Instagram close behind, a pattern broadly consistent with national data showing these three platforms dominating U.S. teens' media diets (University of Minnesota Extension).

The fact that short-form video sits at the center of participants' media habits matters, given what the literature suggests about its cognitive footprint. Alghamdi and Aljabr found a negative correlation between TikTok use and self-reported attention span (e05144), and Haliti-Sylaj and Sadiku found that students who consumed high volumes of short-form video daily reported lower GPAs (65). These studies, like this one, rest on self-report and correlational design, so no causal claim can be drawn from them, but the coexistence of heavy TikTok use and widespread self-reported attentional difficulty in this sample fits neatly within that body of work, even as it calls for more controlled research to sort out cause from correlation.

Doomscrolling Awareness and Metacognition

What stands out most is that nearly all participants (96.4%) not only recognized the term doomscrolling but could describe it with real accuracy, often invoking its purposeless, compulsive quality, and sometimes even naming dopamine reward cycles by name. This is not a population unaware of its own habits.

And yet awareness did not translate into change. Despite recognizing the behavior for what it is, most participants continued to report high screen time and frequent distraction, a pattern that lines up with research suggesting digital wellness awareness rarely predicts reduced usage on its own (Saindon). Social media platforms are, after all, built to exploit reward-seeking behavior, which makes disengagement difficult even for users who see clearly what is happening to them (Wiederhold 279).

Attention, Focus, and Fragmented Digital Habits

An interesting point was how participants judged their own attention. Students expressed moderate-to-high confidence in their ability to stay focused ($M = 3.15$), even as they reported frequent distraction and app-switching in the same breath. This kind of self-perception gap has precedent: Ophir et al. found that heavy media multitaskers performed worse at filtering out distraction, all while likely overestimating their own multitasking ability (15584).

This self-perception gap is echoed, in a more limited way, by the correlational results reported above: TikTok use was significantly associated with studying distraction ($\rho = .31$, $p = .028$), a concrete behavioral item, but not with the more global, retrospective item asking whether attention span has "gotten shorter" ($\rho = .25$, $p = .089$). One reading of this pattern is that students may be more accurate reporters of specific, situational distraction than of a judgment about their own cognitive change over time, a distinction consistent with self-report literature more broadly, in which specific behavioral items tend to correlate with external measures more reliably than global self-assessments do (Ophir et al. 15585).

These findings echo broader concerns about the fragmented attention that chronic digital overstimulation can produce. Researcher David Levy has used the term "popcorn brain" to describe the restless, scattered mental state that habitual rapid content consumption may leave behind (as discussed in Levy 237), and the symptoms associated with it, short attention span, impulsivity, difficulty settling into slower tasks, overlap considerably with what participants described here. It is worth noting that "popcorn brain" remains a popular-science term rather than

a clinically validated construct, and the rigor of research behind it varies. Still, longitudinal work by Achterberg et al. found that heavier social media users showed greater thinning of the lateral prefrontal cortex over time, suggesting that habitual fragmented attention may leave a measurable trace on the developing brain, even if causality here remains an open question (101088).

Memory and Cognition

Memory fared better in this survey, with participants reporting relatively low rates of quickly forgetting information and moderate recall of earlier studying. Even so, self-assessments of memory deserve some skepticism. A review by Firth et al. found that increased internet use, especially for multitasking, is linked to diminished memory and attention in some studies, though effect sizes and methodological rigor vary considerably across that literature (119). Given how much time most participants spend on their devices daily, their self-reported memory functioning may not tell the whole story.

Self-Perceived Academic Impact

Perhaps the most interesting pattern to emerge from this study is the gap between how students perceived their attention and how they perceived its academic consequences. Most believed their attention span had shortened and said they felt more distracted after scrolling, and yet fewer than one in five thought social media was hurting their grades. Students, it seems, are not always connecting the attentional changes they notice to how they perform in school.

The broader literature has observed something similar. Haliti-Sylaj and Sadiku found that students with heavy short-form video consumption posted lower average academic scores, yet many such students may never trace the connection back to their media habits (65). A systematic review of adolescents aged 12 to 18 likewise found that heavier social media use tracks with higher anxiety, depression, and poorer sleep, even as the causal pathways to academic outcomes go largely unrecognized by the users themselves (Valkenburg and Piotrowski). This points to real value in media literacy education that helps students draw the line between their digital habits and their cognitive functioning, though this study, on its own, cannot establish that such a line is causal.

Anxiety and Behavioral Patterns

Beyond attention, the results also gesture toward a pattern of phone-related behavioral dependency. Roughly 47.2% of participants said they struggle to resist social media while doing homework, 51.2% admitted to using their phones during other activities, and 31.2% said they feel anxious or restless when trying to stay off their phones. These patterns sit comfortably within the doomscrolling literature.

Shabahang et al. found doomscrolling linked to heightened existential anxiety among the populations they surveyed (100438), and Yang et al. found that doomscrolling helped explain the bidirectional relationship between insomnia and depression, linking the behavior to poorer sleep and worse mood among the students surveyed (565). Soraci et al., in a psychometric validation study, examined how doomscrolling relates to broader patterns of problematic social media use,

psychological distress, and mental well-being. That nearly a third of this sample reported phone-related anxiety fits within that pattern, though it bears repeating that this study used no validated clinical anxiety measure. Canoğullari went further, showing that doomscrolling can mediate the relationship between social media addiction and psychological stress, though the cross-sectional designs common to this literature still limit how firmly causal claims can be made (491).

Implications for Education and Practice

These findings, preliminary as they are, suggest a few areas worth the attention of schools, parents, and policymakers. That so many students already recognize doomscrolling for what it is suggests that awareness alone will not be enough; interventions likely need to hand students concrete strategies for managing their habits. The broader literature points to structured focus techniques such as the Pomodoro method, designated phone-free study spaces, and mindfulness practices as evidence-informed places to start (Levy 237; Mark et al. 107).

A multidisciplinary approach, one that brings together educators, parents, policymakers, and students, appears to be the most promising path forward according to existing research (Valkenburg and Piotrowski). Digital literacy education that explains how social media algorithms function, how doomscrolling takes hold psychologically, and what the research says about screen time and attention could help students make more deliberate choices. A meta-analysis by Wu et al. found that structured screen time reduction programs worked, particularly when paired with health promotion curricula and kept under seven months, which offers a workable model for school-based programs (e4029).

It is also worth noting that most participants in this sample had no screen time limit in place, which may well be feeding the high usage rates observed here. Research suggests that parents who model healthy digital habits themselves are among the more effective levers for reducing problematic media use in adolescents (Valkenburg and Piotrowski).

Limitations

Several limitations temper these findings. Most significantly, the sample was drawn from a single school and consisted almost entirely of 9th graders (94.5%), which sharply limits how far these results can be generalized to other grades, schools, or regions; they should be read as descriptive of this particular sample and nothing more. That said, Monta Vista High School serves a large and academically engaged student population, and the thoughtfulness with which students reflected on their own habits is itself a meaningful signal, one that other schools, especially those serving similar populations, might build on by running comparable surveys of their own and developing digital wellness programs grounded in their own students' experiences.

Every measure here was also self-reported, which opens the door to response bias, particularly around screen time estimates, which may be inaccurate. The survey further relied on an adapted Likert-scale measure of attention rather than a validated objective instrument; a clinically validated tool such as the Continuous Performance Test would offer more reliable data on attentional functioning and deserves consideration in future iterations of this work, though it

was not used here due to the licensing fee required, which fell outside the scope of a school-based project. Even so, the adapted instrument still yields useful self-report data capable of pointing future researchers toward constructs worth investigating with more rigorous tools.

Finally, the cross-sectional design means only correlational patterns can be identified here, and causality remains out of reach: it is impossible to say from this data whether doomscrolling causes shorter attention spans, or whether students with shorter attention spans are simply more drawn to doomscrolling in the first place. Longitudinal or experimental designs would be needed to settle that question. Still, descriptive studies like this one serve a purpose of their own. They map the terrain, generate hypotheses, and motivate the more controlled investigations that should follow, and this study offers a foundation that future researchers can build on with larger samples, validated instruments, and longitudinal tracking.

The correlational analysis added to this revision carries its own limitations and should be weighed accordingly. It is exploratory: three comparisons were run without correction for multiple comparisons, which increases the chance of a false positive, and the one significant result (TikTok × studying distraction, $p = .028$) would not survive a conservative correction such as Bonferroni. Effect sizes throughout are small ($\rho \leq .31$), meaning screen time measures account for a modest share of the variance in these attention items at best, and self-reported weekly screen time is itself a noisy measure. Several responses in this dataset appeared to be entered in minutes rather than hours and required exclusion, which likely disregards any true underlying correlation further. These results should therefore be read as an initial, hypothesis-generating signal rather than as evidence of a robust or generalizable relationship between doomscrolling-adjacent behavior and attention span decline.

Conclusion

This study set out to ask whether doomscrolling is associated with self-perceived attentional difficulties among high school students, and the answer, at least in this sample, appears to be a qualified and platform-specific yes rather than a broad one. Across a group of predominantly 9th graders, heavy digital media consumption sat alongside widespread reports of distraction, a shrinking sense of attention span, and behavioral patterns consistent with compulsive phone use, and a supplementary correlational analysis found that TikTok use specifically, though not total screen time, was significantly related to self-reported distraction while studying. The relationship between screen time and students' broader sense that their attention span has declined over time, however, did not reach statistical significance in this sample, and effect sizes throughout were small. Awareness of doomscrolling did nothing to curb it, a reminder of just how deliberately platform design is built to sustain engagement, even among users who understand fully well what is happening to them.

The most striking thread running through these findings is the disconnect between what students recognize about their own attentional decline and what they fail to connect to their academic lives. Most acknowledged that their focus had suffered, yet the majority never linked this to how they were doing in school, a gap that represents real opportunity for digital literacy education aimed at helping adolescents draw that connection themselves.

These findings align with the broader literature on short-form media and attentional fragmentation, and they point toward the need for interventions at both the school and family level. The study's limitations, particularly its small, non-representative sample and its reliance on self-report, mean its conclusions must be held loosely, but even so, it offers a meaningful starting point. Future work using larger, more diverse samples, validated attention measures, and longitudinal designs will be essential to understanding the true nature and direction of the relationship between doomscrolling and attention. In the meantime, this study adds to a growing awareness among students, educators, and families that habitual digital media use is never a neutral act, and that learning to use it mindfully may be one of the more important skills a young person can develop today.

Works Cited

Achterberg, Michelle, et al. "Longitudinal Associations Between Social Media Use, Mental Well-Being and Structural Brain Development Across Adolescence." Developmental Cognitive Neuroscience, vol. 54, 2022, article 101088.

Alghamdi, A., and A. Aljabr. "The Impact of TikTok on Employees' Attention Span." International Journal of Professional Business Review, vol. 9, no. 11, 2024, article e05144.

American Psychological Association. Publication Manual of the American Psychological Association. 7th ed., American Psychological Association, 2020.

Bendau, A., et al. "Associations between COVID-19 Related Media Consumption and Symptoms of Anxiety, Depression and COVID-19 Related Fear in the General Population in Germany." European Archives of Psychiatry and Clinical Neuroscience, vol. 271, no. 2, 2021, pp. 283-91.

Boukes, M., and R. Vliegenthart. "News Consumption and Its Unpleasant Side Effect: Studying the Effect of Hard and Soft News Exposure on Mental Well-Being Over Time." Journal of Media Psychology, vol. 29, no. 3, 2017, pp. 137-47.

Brady, William J., et al. "The MAD Model of Moral Contagion: The Role of Motivation, Attention, and Design in the Spread of Moralized Content Online." Perspectives on Psychological Science, vol. 15, no. 4, 2020, pp. 978-1010.

Canoğullari, Özge. "The Effect of Social Media Addiction on Psychological Stress: The Indirect Role of Doomscrolling." Journal of Theoretical Educational Sciences, vol. 18, no. 3, 2025, pp. 491-508.

Casey, B. J., Rebecca M. Jones, and Todd A. Hare. "The Adolescent Brain." Annals of the New York Academy of Sciences, vol. 1124, 2008, pp. 111-26.

Cassidy, Caitlin. "Doomscrolling Linked to Poor Physical and Mental Health, Study Finds." The Guardian, 5 Sept. 2022, https://www.theguardian.com/society/2022/sep/06/doomscrolling-linked-to-poor-physical-and-mental-health-study-finds

Elhai, Jon D., et al. "Problematic Smartphone Use: A Conceptual Overview and Systematic Review of Relations with Anxiety and Depression Psychopathology." Journal of Affective Disorders, vol. 207, 2017, pp. 251-59.

Faverio, Michelle, and Olivia Sidoti. "Teens, Social Media and Technology 2024." Pew Research Center, 12 Dec. 2024, www.pewresearch.org/internet/2024/12/12/teens-social-media-and-technology-2024/.

Firth, Joseph, et al. "The 'Online Brain': How the Internet May Be Changing Our Cognition." World Psychiatry, vol. 18, no. 2, 2019, pp. 119-29.

Haliti-Sylaj, M., and M. Sadiku. "Impact of Short Reels on Attention Span and Academic Performance of Undergraduate Students." Eurasian Journal of Applied Linguistics, vol. 10, no. 3, 2024, pp. 60-68.

Kross, Ethan, et al. "Social Media and Well-Being: Pitfalls, Progress, and Next Steps." Trends in Cognitive Sciences, vol. 25, no. 1, 2021, pp. 55-66.
Levy, D. M. "No Time to Think: Reflections on Information Technology and Contemplative Scholarship." Ethics and Information Technology, vol. 9, no. 4, 2007, pp. 237-49.
Mark, Gloria, Daniela Gudith, and Ulrich Klocke. "The Cost of Interrupted Work: More Speed and Stress." Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '08), Association for Computing Machinery, 2008, pp. 107-10.
Ophir, E., et al. "Cognitive Control in Media Multitaskers." Proceedings of the National Academy of Sciences, vol. 106, no. 37, 2009, pp. 15583-87.
Psychology Today. "Attention Span Test." Psychology Today, 2024, www.psychologytoday.com/us/tests/personality/attention-span-test.
Rideout, V., et al. The Common Sense Census: Media Use by Tweens and Teens, 2021. Common Sense, 2022.
Saindon, C. "Beyond Screen Time: Rethinking How We Talk about Digital Wellness." Journal of Children and Media, vol. 15, no. 1, 2021, pp. 10-14.
Shabahang, Reza, et al. "Doomscrolling Evokes Existential Anxiety and Fosters Pessimism about Human Nature? Evidence from Iran and the United States." Computers in Human Behavior Reports, vol. 15, 2024, article 100438.
Soraci, Paolo, et al. "Psychometric Analysis of the Italian Doomscrolling Scale: Associations with Problematic Social Media Use, Psychological Distress, and Mental Well-Being." Current Psychology, 2025.
Steinmayr, Ricarda, Matthias Ziegler, and Birgit Träuble. "Do Intelligence and Sustained Attention Interact in Predicting Academic Achievement?" Learning and Individual Differences, vol. 20, no. 1, 2010, pp. 14-18.
Sundar, S. S., and A. M. Limperos. "Uses and Grants 2.0: New Gratifications for New Media." Journal of Broadcasting & Electronic Media, vol. 57, no. 4, 2013, pp. 504-25.
Twenge, Jean M., and W. Keith Campbell. "Media Use Is Linked to Lower Psychological Well-Being: Evidence from Three Datasets." Psychiatric Quarterly, vol. 90, no. 2, 2019, pp. 311-31.
UNICEF. The State of the World's Children 2017: Children in a Digital World. UNICEF, Dec. 2017.
University of Minnesota Extension. "Talking with Your Teen about Social Media." University of Minnesota Extension, 2023, https://extension.umn.edu/teen-development/teens-and-social-media
Valkenburg, P. M., and J. T. Piotrowski. Plugged In: How Media Attract and Affect Youth. Yale University Press, 2017.
Vanden Abeele, Mariek M. P. "Digital Wellbeing as a Dynamic Construct." Communication Theory, vol. 31, no. 4, 2021, pp. 932-55.

Wheaton, M. G., et al. "Is Fear of COVID-19 Contagious? The Effects of Emotion Contagion and Social Media Use on Anxiety in Response to the Coronavirus Pandemic." Frontiers in Psychology, vol. 11, 2021, article 567379.

Wiederhold, Brenda K. "Stop Scrolling, Start Living: The Growing Reality of Internet Addiction Disorder." Cyberpsychology, Behavior, and Social Networking, vol. 21, no. 5, 2018, pp. 279-80.

Wu, L., et al. "The Effect of Interventions Targeting Screen Time Reduction: A Systematic Review and Meta-Analysis." Medicine, vol. 95, no. 27, 2016, article e4029.

Yang, Le, et al. "Reliability and Validity of the Chinese Version of the Doomscrolling Scale and the Mediating Role of Doomscrolling in the Bidirectional Relationship between Insomnia and Depression." BMC Psychiatry, vol. 24, 2024, article 565.

Navigating Dual Cultures: Parental Racial-Ethnic Socialization, Acculturative Family Distancing, and Biculturalism on Asian American Adolescent Mental Health

By Maddie Park

Abstract

The recent deterioration in the mental health of Asian American (AA) adolescents points to a critical need to analyze the existing literature surrounding internal psychological risk factors. Of these, parental racial-ethnic socialization and Acculturative Family Distancing (AFD) remain underexamined in synthesized form. Parental racial-ethnic socialization refers to parents communicating messages about race and ethnicity to their children. It can take three forms: cultural socialization (i.e., teaching racial history, culture, and heritage), preparation for bias (i.e., preparing for ethnic or racial discrimination), and promotion of mistrust (i.e., encouraging racial mistrust). AFD points to the distance that develops between parents and their children as a result of acculturative gaps. Drawing together 44 peer-reviewed studies, this narrative review analyzes how both key mechanisms impact the mental health of AA adolescents. In terms of parental racial-ethnic socialization, while cultural socialization protects against the link between discrimination and distress, supporting adolescent mental health, promotion of mistrust exacerbates it, thus contributing to mental health challenges. Literature surrounding preparation for bias remains inconclusive. AFD contributes to mental health challenges and decreased help-seeking via intergenerational family conflict, reduced family cohesion/satisfaction, emotional distance between parent and child, and the expectation to conform to Asian culture. Literature involving both mechanisms further suggests that a strong ethnic identity supports adolescent mental health. At the same time, sole identification with the ethnic culture—and, conversely, American culture—has also been shown to harm mental health. Thus, the present review suggests that developing a strong bicultural identity may be beneficial for adolescents to successfully navigate their ethnic and American identities. Bicultural identities may vary depending on the distance and amount of conflict between an individual's cultural identities. It has been shown to decrease AFD, encourage help-seeking behavior, combat mental health stigma, and increase self-esteem.

Introduction

The declining mental health of Asian American (AA) adolescents is a grave and urgent issue. In 2022, suicide was the leading cause of death for AAs aged 15 to 24 (Office of Minority Health). In 2024, 45-49% of AA adolescents reported moderate to severe depressive symptoms, and 24-35% of these adolescents reported having attempted suicide (The Asian American Foundation). While adolescents may face external (e.g., racism, model minority myth) and internal (e.g., negotiating dual cultures, acculturation gaps) barriers to mental well-being (Benet-Martinez and Haritatos; Gee et al.; Hwang et al.; Kiang et al., "Model Minority Stereotyping"), the present review examines internal psychological risk factors because they remain undersynthesized in the literature, with many researchers synthesizing external factors

instead (e.g., Ibrahim et al.; Qi et al.). Specifically, Asian cultures stress filial piety and close family bonds, thus family dynamics may influence adolescents' mental health (e.g., Leung et al.). Roughly four-in-ten AA adolescents feel a sense of duty towards their family or are afraid of causing them shame, and slightly over half of surveyed adolescents report that different beliefs about mental health contributed to discomfort around talking to parents about emotional or mental health challenges (The Asian American Foundation).

These trends underscore how intergenerational factors are critical to understanding and addressing mental health vulnerability in this population. Thus, there is a pressing need to synthesize existing literature on the specific intergenerational factors that increase adolescents' psychological risk.

One psychological risk factor for AA adolescents is parental racial-ethnic socialization—parents relaying messages surrounding race and ethnicity to their children (Atkin et al.; Huynh and Fuligni). The most common conceptualization of parental racial-ethnic socialization is a model proposed by Hughes and Chen in 1997 (Atkin et al.). Though Hughes and Chen's model was originally proposed to study racial socialization in Black families, it has since been used in studies involving AA adolescents (e.g., Daga and Raval; Kim and Lee; Woo et al.). Hughes and Chen outlined three forms of parental racial-ethnic socialization—cultural socialization, preparation for bias, and promotion of mistrust—which are discussed in the subsequent sections.[1] Cultural socialization may buffer the detrimental impacts of discrimination on adolescent mental health and help-seeking behavior (Gartner et al.; Huynh et al.; Tran and Lee; Umaña-Taylor et al.). The literature on preparation for bias is mixed (e.g., Atkin et al.), while promotion of mistrust may be associated with increased depression because it impedes the ability of adolescents to develop healthy relationships with teachers and peers (Atkin and Yoo; Huynh and Fuligni; Kiang et al., "Latent Profiles"; Tran and Lee).

Another risk factor is Acculturative Family Distancing (AFD), which is the distance that occurs between immigrant parents and their children due to acculturative gaps (Hwang; Hwang et al.). AFD has two dimensions: breakdowns in communication and incongruent cultural values. Breakdowns in communication result from differing linguistic fluencies between immigrant parents and their children; incongruent cultural values result from parents and children adhering differently to Asian and American cultures. AFD is associated with an increased risk of depression and decreased help-seeking behavior in AA adolescents (Guo et al.; Hwang et al.; Park and Park; Qi et al.; Yu et al.). While there may be other intergenerational factors affecting adolescent mental health, these factors are often discussed in the literature.

Both psychological risk factors bring forward the tensions inherent to balancing ethnic and dominant cultures. Existing literature on parental racial-ethnic socialization indicates the importance of developing adolescents' ethnic identity to support mental health (Gartner et al.; Huynh et al.; Tran and Lee; Umaña-Taylor et al.). AFD has been shown to stem from acculturation gaps, in which adolescents often have a weaker ethnic identity and stronger

[1] Despite theoretical differences, cultural socialization and pluralism are often measured with items indistinguishable from each other (e.g., Tran and Lee). They are grouped together under cultural socialization for the purpose of the present review.

American one (Hwang; Hwang et al.). I argue that successfully navigating both cultures through developing a strong bicultural identity may support adolescent mental health.

The present review is composed of three sections. The first and second sections present the impacts of parental racial-ethnic socialization and AFD, respectively, on AA adolescent mental health, illustrating the relationship between parental messaging, ethnic identity, and adolescent mental health. The last section expands on the previous two—suggesting the harms of solely strengthening an ethnic or American identity and illustrating the benefits of biculturalism in promoting AA mental health. While there is existing literature on the relationship between intergenerational factors and AA adolescent mental health, no study, to my knowledge, has brought together AFD, parental racial-ethnic socialization, and biculturalism, which this work intends to do. Because these frameworks tend to be studied independently of each other, the present review aims to highlight connections across the literature, illustrating, more broadly, how parental socialization may interact with identity-building, and in turn adolescent mental health.

Methods

Records were identified on Google Scholar, based on combinations of keywords relating to ethnicity, parental racial-ethnic socialization, Acculturative Family Distancing, and biculturalism frameworks. Keywords included "Asian American," "adolescent," "Acculturative Family Distancing," "cultural socialization," "mental health," "biculturalism," "promotion of mistrust," "preparation for bias," "acculturation," and "enculturation." In the first phase of screening, abstracts were screened until results were no longer relevant to the topic. Roughly 20 abstracts were retained for full-text analysis. They were examined for relevance and quality—consisting of meta-analyses, literature reviews, and individual studies—and included in the final review. Records were excluded if their abstracts did not explicitly mention mental health (e.g., naming a mental health challenge, including the words "mental health," "psychological outcomes," or "psychological distress") or if researchers studied Asian adolescents living outside of the U.S., individuals older than 18, adolescents of a different racial/ethnic group (i.e., Black, Latinx), or AA adolescents who experienced socialization from individuals other than their parents. Records sampling Asian American adolescents, rather than a specific Asian subgroup, were prioritized to ensure that findings of the present review applied, as closely as possible, to all individuals identifying as "Asian American." That being said, studies that examined early adolescents, late adolescents, and specific Asian ethnic groups were included if there were no studies more comprehensive. Studies on specific Asian ethnic groups were also included if they studied an underrepresented population within Asian American samples (e.g., Filipino adolescents).

Forward and backward searches were then conducted to strengthen, support, or add nuance to findings already present in the review. Abstracts were evaluated against the same criteria above; if they made it past the first phase, they were then retained for full-text analysis. A total of 44 full-text papers were used to compile the final narrative review. Records were mostly

quantitative ($k = 29$), with smaller numbers of qualitative ($k = 2$), reviews/meta-analyses ($k = 5$), theoretical/conceptual ($k = 5$), reports ($k = 2$), and mixed-methods ($k = 1$) studies.

Citation	Sample Size and Ethnicity Breakdown	Main Findings
Atkin, A. L., et al. "What Types of Racial Messages Protect Asian American Adolescents from Discrimination? A Latent Interaction Model." *Journal of Counseling Psychology*, vol. 66, no. 2, 2019, pp. 247-254. https://doi.org/10.1037/cou0000297	187 Asian American adolescents (149 Chinese, 14 multiethnic, 7 multiracial, 6 Filipino/a, 6 Vietnamese, 4 Asian Indian, 1 Thai)	Researchers found a positive relationship between racial discrimination and distress. Cultural socialization/pluralism buffered against discrimination-distress link, whereas promotion of mistrust was a risk factor for increased psychological distress.
Atkin, A., and H. Yoo. "Patterns of Racial-Ethnic Socialization in Asian American Families: Associations with Racial-Ethnic Identity and Social Connectedness." *Journal of Counseling Psychology*, vol. 68, 2020, pp. 17-26. https://doi.org/10.1037/cou0000435	228 Asian American emerging adults (21.5% Chinese, 12.7% Vietnamese, 11.8% Filipino, 9.6% Indian, 5.7% Korean, 3.5% Japanese, 12.3% Multiracial, 11.4% multiethnic; <2% combined: Bengali, Cambodian, Laotian, Thai, Pakistani, Bangladeshi, Taiwanese, Hmong, and Sri Lankan).	Individuals under the active integration profile (socialized with messages about equality, cultural respect, and becoming American) reported greater cognitive clarity and racial-ethnic pride. Individuals under the active and passive integration profile (socialized about maintaining heritage culture) experienced increased social connectedness.
Benet-Martínez, V., and J. Haritatos. "Bicultural Identity Integration (BII): Components and Psychosocial Antecedents." *Journal of Personality*, vol. 73, no. 4, 2005, pp. 1015-1049. https://doi.org/10.1111/j.1467-6494.2005.00337.x	133 first-generation Chinese Americans	Authors defined Bicultural Identity Integration (BII), which includes constructs of distance vs. overlap and conflict vs. harmony between cultural identities. Personality, acculturation, and sociodemographic may affect level of BII.
Chaudhry, T., and S. H. Chen. "Mental Illness Stigmas in South Asian Americans: A Cross-Cultural Investigation." *Asian American Journal of Psychology*, vol. 10, no. 2, 2019, pp. 154-165. https://doi.org/10.1037/aap0000141	104 Asian Americans (52 South Asian Americans, 52 East Asian Americans), 64 European Americans	South Asians endorsed courtesy stigma more than European Americans. Lower courtesy stigma in South Asians was associated with greater interdependent self-construal. Associations between traditional Asian values, onset responsibility, and courtesy stigma were moderated by ethnic groups.
Chiang, S., et al. "Asian American Adolescent Help-Seeking Pathways for Psychological Distress." *Asian American Journal of Psychology*, vol. 13, no. 2, 2022, pp. 194-206. https://doi.org/10.1037/aap0000241	Study 1: 759 Asian American and Caucasian students (511 East Asians, 119 Caucasian, 11 Indian, 75 Filipino, 31 mixed race Asian and White, 12 mixed race Asian and Hispanic) Study 2: 12 parents (9 Chinese, 2 Indian, 1 Korean), 12	Asian American (AA) and Caucasian students prefer seeking help from informal sources (e.g., teachers, peers). AA are less likely to confide in an adult and more likely to have no one to confide in. Stigma and lack of mental health knowledge, model minority stereotypes, and lack of emotional openness affect AA help-seeking

	adolescents (9 Chinese, 1 Korean, 1 Indian, 1 Vietnamese)	behavior.
Choi, Y., et al. "Explicating Acculturation Strategies among Asian American Youth: Subtypes and Correlates across Filipino and Korean Americans." *Journal of Youth and Adolescence*, vol. 47, no. 10, 2018, pp. 2181-2205. https://doi.org/10.1007/s10964-018-0862-1	1580 individuals (379 Filipino American youth and 377 parents, 410 Korean American youth and 414 parents)	Researchers identified three acculturation subtypes for Filipino American youth: High Assimilation with Ethnic Identity, Integrated Bicultural with Strongest Ethnic Identity, and Modest Bicultural with Strong Ethnic Identity. Researchers identified three acculturation subtypes for Korean American youth: Separation, Integrated Bicultural, Modest Bicultural with Strong Ethnic Identity. Favorable subtypes of biculturalism varied based on gender and ethnicity.
Choi, Y., et al. "Asian American Mental Health: Longitudinal Trend and Explanatory Factors among Young Filipino- and Korean Americans." *SSM - Population Health*, vol. 10, 2020, p. 100542. https://doi.org/10.1016/j.ssmph.2020.100542	1574 Asian American youth and parents (378 Filipino American youth and 376 parents, 408 Korean American youth and 412 parents)	Depression and suicidal ideation increased between 2014 and 2018. Intergenerational cultural conflict and racial discrimination were mental health risk factors. Strong peer relationships and ethnic identity buffered against depression and suicidal ideation.
Daga, S. S., and V. V. Raval. "Ethnic-Racial Socialization, Model Minority Experience, and Psychological Functioning among South Asian American Emerging Adults: A Preliminary Mixed-Methods Study." *Asian American Journal of Psychology*, vol. 9, no. 1, 2018, pp. 17-31. https://doi.org/10.1037/aap0000108	Phase 1: 54 South Asian American emerging adults Phase 2: 10 Indian American emerging adults	Phase 1: Cultural socialization was positively associated with ethnic identity. Preparation for bias and promotion of mistrust were positively associated with model minority pressures and adjustment problems. Promotion of mistrust was negatively associated with life satisfaction. Phase 2: Indian parents prepared their children for racism.
Gartner, M., et al. "Prospective Links between Ethnic Socialization, Ethnic and American Identity, and Well-Being among Asian-American Adolescents." *Journal of Youth and Adolescence*, vol. 43, no. 10, 2014, pp. 1715-1727. https://doi.org/10.1007/s10964-013-0044-0	180 Asian American adolescents (28% Hmong, 22% multiethnic, 11% South Asian, 8% Chinese, 8% pan-ethnic; 23% combined: Montagnard, Laotian, Vietnamese, Filipino/a, Japanese, Korean, Thai)	Cultural socialization was positively associated with ethnic identity (and American identity for girls). Ethnic identity was positively associated with self-esteem. Promotion of mistrust was positively associated with self-esteem and negatively associated with ethnic identity for foreign-born youth only.
Gee, G. C., et al. "Racial Discrimination and Health among Asian Americans: Evidence, Assessment, and Directions for Future Research." *Epidemiologic Reviews*, vol. 31, no. 1, 2009, pp. 130-151.	62 empirical articles	Discrimination was associated with poor mental health. Studies on racial discrimination and health in Asian Americans mostly focused on mental health, followed by physical and behavioral problems.

https://doi.org/10.1093/epirev/mxp009		
Grossman, J. M., and B. Liang. "Discrimination Distress among Chinese American Adolescents." *Journal of Youth and Adolescence*, vol. 37, no. 1, 2008, pp. 1-11. https://doi.org/10.1007/s10964-007-9215-1	158 Chinese American youth	Distress from discrimination was linked to depression and cooperation. Peer support protected against harmful impacts of discrimination on cooperation.
Guo, S., et al. "Linkages between Mental Health Need and Help-Seeking Behavior among Adolescents: Moderating Role of Ethnicity and Cultural Values." *Journal of Counseling Psychology*, vol. 62, no. 4, 2015, pp. 682-693. https://doi.org/10.1037/cou0000094	169 Vietnamese American and European American youth	Mental health need, cultural values, and ethnicity affected help-seeking behavior. Vietnamese Americans and adolescents with strong family obligations were less likely to seek help when facing stressful life events.
Gupta, A., et al. "The 'Model Minority Myth': Internalized Racialism of Positive Stereotypes as Correlates of Psychological Distress, and Attitudes toward Help-Seeking." *Asian American Journal of Psychology*, vol. 2, no. 2, 2011, pp. 101-114. https://doi.org/10.1037/a0024183	291 Asian Americans (27% Chinese, 6% Filipino, 31% Indian, 8% Japanese, 11% Korean, 3% Pakistani, 7% Taiwanese, 7% Vietnamese, 16% "other")	Internalization of positive Asian stereotypes was positively linked to increased psychological distress and decreased help-seeking.
Harrison, A. O., et al. "Family Ecologies of Ethnic Minority Children." *Child Development*, vol. 61, no. 2, 1990, pp. 347-362. https://doi.org/10.2307/1131097		Biculturalism emerged from ethnic stratification and fostered interdependence and positive orientation to ethnic group, which increased cognitive flexibility.
Hughes, D., and L. Chen. "When and What Parents Tell Children about Race: An Examination of Race-Related Socialization among African American Families." *Applied Developmental Science*, vol. 1, no. 4, 1997, pp. 200-214. https://doi.org/10.1207/s1532480xads0104_4		Reviewed literature on racial and ethnic socialization, covering its frequency and impacts on ethnic identity, self-esteem, coping with discrimination, academic achievement, and psychosocial well-being.
Hughes, D., et al. "Parents' Ethnic-Racial Socialization Practices: A Review of Research and Directions for Future Study." *Developmental Psychology*, vol. 42, no. 5, 2006, pp. 747-770. https://doi.org/10.1037/0012-1649.42.5.747	157 African American parents with children 4 to 14 years old	Cultural socialization occurred more frequently than preparation for bias, which occurred more frequently than promotion of mistrust. Frequency of preparation for bias and promotion of mistrust increased with age. Parents' perceptions of racism in the workplace were positively linked to racial socialization. Racial socialization was

		positively linked to racial socialization parents had received while growing up.
Huynh, K. D., et al. "Ethnic-Racial Socialization, Psychological Distress, and Identity Pride for LGBTQ+ Black, Indigenous, People of Color." *Journal of Counseling Psychology*, vol. 73, no. 2, 2026, pp. 143-155. https://doi.org/10.1037/cou0000854	605 LGBTQ+ BIPOC individuals (156 Asian/Pacific Islander, 147 Black, 144 Latinx, 102 multiracial, 33 American Indian/Alaska Native, 13 "other")	Cultural socialization was negatively linked to psychological distress. It supports mental health and positive identity formation. Preparation for bias was negatively linked to psychological distress.
Huynh, V. W., and A. J. Fuligni. "Ethnic Socialization and the Academic Adjustment of Adolescents from Mexican, Chinese, and European Backgrounds." *Developmental Psychology*, vol. 44, no. 4, 2008, pp. 1202-1208. https://doi.org/10.1037/0012-1649.44.4.1202	524 Mexican, Chinese, and European American adolescents (approximately equally represented)	Chinese adolescents perceived an increased frequency of promotion of mistrust, which negatively predicted academic achievement. Cultural socialization was positively linked to increased motivation in Chinese and Mexican American adolescents.
Hwang, W.-C. "Acculturative Family Distancing: Theory, Research, and Clinical Practice." *Psychotherapy: Theory, Research, Practice, Training*, vol. 43, no. 4, 2006, pp. 397-409. https://doi.org/10.1037/0033-3204.43.4.397		Authors define Acculturative Family Distancing, which includes two dimensions: communication and cultural values. Both dimensions are hypothesized to increase over time, putting families at risk of mental health challenges and family dysfunction.
Hwang, W.-C., and J. J. Wood. "Acculturative Family Distancing: Links with Self-Reported Symptomatology among Asian Americans and Latinos." *Child Psychiatry and Human Development*, vol. 40, no. 1, 2009, pp. 123-138. https://doi.org/10.1007/s10578-008-0115-8	186 Asian American and Latino undergraduates (107 Asian American, 79 Latinos)	Higher levels of AFD were positively linked to greater psychological distress and risk for clinical depression. Link was mediated by family conflict.
Hwang, W.-C., et al. "Acculturative Family Distancing (AFD) and Depression in Chinese American Families." *Journal of Consulting and Clinical Psychology*, vol. 78, no. 5, 2010, pp. 655-667. https://doi.org/10.1037/a0020542	105 Chinese American high school students and mothers	Increased AFD was positively linked to increased depression. Greater AFD was associated with greater mother-child heritage enculturation gaps.
Kiang, L., et al. "Latent Profiles of Discrimination and Socialization Predicting Ethnic Identity and Well-Being among Asian American	154 Asian American adolescents (28% Hmong, 22% multiethnic, 11% South Asian, 8% Chinese, 8% panethnic;	Adolescents categorized under the Culturally Prepared with Low Mistrust profile reported increased ethnic belonging and decreased negative

Adolescents." *Journal of Research on Adolescence*, vol. 29, no. 2, 2019, pp. 523-538. https://doi.org/10.1111/jora.12403	23% combined: Montagnard, Laotian, Vietnamese, Filipino/a, Japanese, Korean, Thai)	emotions.
Kiang, L., et al. "Model Minority Stereotyping, Perceived Discrimination, and Adjustment among Adolescents from Asian American Backgrounds." *Journal of Youth and Adolescence*, vol. 45, no. 7, 2016, pp. 1366-1379. https://doi.org/10.1007/s10964-015-0336-7	159 Asian American adolescents (28% Hmong, 22% multiethnic, 11% South Asian, 8% Chinese, 8% panethnic; 23% combined: Montagnard, Laotian, Vietnamese, Filipino/a, Japanese, Korean, Thai)	Perceptions of model minority stereotyping increased while perceptions of discrimination decreased over high school years. Model minority myth may buffer against harmful impacts of discrimination.
Kim, A. Y., and R. M. Lee. "A Critical Adoption Studies and Asian Americanist Integrative Perspective on the Psychology of Korean Adoption." *The Routledge Handbook of Adoption*, 1st ed., Routledge, 2020, p. 15.		Authors examined how adopted Koreans navigate cultural, ethnic, and racial experiences during childhood, adolescence, and adulthood while integrating critical adoption studies framework and Asian Americanist perspective.
Kim, B., and M. Omizo. "Behavioral Acculturation and Enculturation and Psychological Functioning among Asian American College Students." *Cultural Diversity & Ethnic Minority Psychology*, vol. 12, 2006, pp. 245-258. https://doi.org/10.1037/1099-9809.12.2.245	156 Asian American college students (46 Chinese, 30 Koreans, 22 Filipinos, 18 multiethnic, 13 Taiwanese, 12 Japanese, 6 Vietnamese, 3 Cambodian, 1 Asian Indian, 1 Hmong, 1 Indonesian, and 3 "other")	Acculturation contributed to greater cognitive flexibility, general self-efficacy, and the public dimension of collective self-esteem. Enculturation was positively linked to the private dimension and importance of identity dimension of collective self-esteem.
Kim, B. S. K. "Adherence to Asian and European American Cultural Values and Attitudes toward Seeking Professional Psychological Help among Asian American College Students." *Journal of Counseling Psychology*, vol. 54, no. 4, 2007, pp. 474-480. https://doi.org/10.1037/0022-0167.54.4.474	146 Asian American college students (34 Chinese, 27 Asian Indians, 27 Koreans, 14 Filipinos, 11 Japanese, 7 multiethnic, 5 Taiwanese, 4 Vietnamese, 3 Indonesian, 1 Cambodian, 1 Malaysian, 1 Pakistani, 1 Thai, and 10 "other")	Greater enculturation to Asian values was negatively associated with positive attitudes towards professional help-seeking attitudes. Values may include collectivism, emotional self-control, and humility.
Lee, S. Y., et al. "Mental Disorders and Mental Health Service Use across Asian American Subethnic Groups in the United States." *Community Mental Health Journal*, vol. 51, no. 2, 2015, pp. 153-160. https://doi.org/10.1007/s10597-014-9749-0	1,431 Asian Americans (648 East Asians, 485 Southeast Asians, 298 South Asians)	Asian American subethnic groups varied in prevalence of psychiatric disorders. Southeast Asians had a greater prevalence of substance use disorders, yet fewer Southeast Asians used mental health services. East Asians had reduced odds of mental health help-seeking for substance use disorders.
Leong, F. T. L., et al. "Attitudes	134 Asian American college	Acculturation, conceptions of mental

toward Professional Counseling among Asian-American College Students: Acculturation, Conceptions of Mental Illness, and Loss of Face." *Asian American Journal of Psychology*, vol. 2, no. 2, 2011, pp. 140-153. https://doi.org/10.1037/a0024172	students (44 Chinese, 36 Southeast Asian, 20 Korean, 16 Japanese, 17 "other")	health, and loss of face are linked to help-seeking behavior.
Leung, A. N., et al. "Filial Piety and Psychosocial Adjustment in Hong Kong Chinese Early Adolescents." *The Journal of Early Adolescence*, vol. 30, no. 5, 2010, pp. 651-667. https://doi.org/10.1177/0272431609341046	231 Hong Kong Chinese early adolescents	Reciprocal filial piety was positively associated with life satisfaction and social competence. Authoritarian reciprocal filial piety was negatively associated with self-esteem and social competence.
Luo, E. "Understanding Adolescent Ethnic-Racial Identity: A Latent Profile Approach." *D-Lab, University of California, Berkeley*, 24 Sept. 2024, https://dlab.berkeley.edu/news/understanding-adolescent-ethnic-racial-identity-latent-profile-approach	1,797 adolescents	Identified profiles of ethnic-racial identity (Strongly Diffused, Moderately Diffused, Balanced, and Achieved). Emphasized the importance of family members helping adolescents develop ethnic-racial pride and commitment, as well as schools in engaging respectful discussions on ethnic-racial identity and racial/ethnic discrimination.
Neblett, E. W., et al. "Racial Socialization and Racial Identity: African American Parents' Messages about Race as Precursors to Identity." *Journal of Youth and Adolescence*, vol. 38, no. 2, 2009, pp. 189-203. https://doi.org/10.1007/s10964-008-9359-7	358 African American adolescents	Identified three patterns of socialization: High Positive, Moderate Positive, and Low Frequency. High Positive and Low Frequency racial socialization were linked to perceptions of race (i.e., racial centrality, assimilationist ideology, nationalist ideology).
Nguyen, A.-M., and V. Benet-Martínez. "Biculturalism and Adjustment: A Meta-Analysis." *Journal of Cross-Cultural Psychology*, vol. 44, 2013, pp. 122-159. https://doi.org/10.1177/0022022111435097	83 studies (23,197 participants total)	Significant, strong, and positive association between biculturalism and adjustment.
Park, Y., and S.-Y. Park. "Acculturative Family Distancing and Depressive Symptoms among Korean American Adolescents: The Mediating Role of Family Conflicts." *Child & Adolescent Social Work Journal*, 2024. https://doi.org/10.1007/s10560-024-00999-4	339 Korean American adolescents	Acculturative Family Distancing may be positively associated with depression and negatively associated with strong family relationships.

Qi, H. V., et al. "Barriers to Mental Health Help-Seeking among Asian American Adolescents: A Systematic Review." *Asian American Journal of Psychology*, vol. 16, no. 3, 2025, pp. 213-230. https://doi.org/10.1037/aap0000373	15 empirical articles	Authors detailed barriers to mental health help-seeking, which included mental health stigma, lack of mental health literacy, lack of emotionally validating home environment, Model Minority Myth, and "practical" barriers (e.g., financial instability).
Rahim, H. F., et al. "Cultural Identity Conflict and Psychological Well-Being in Bicultural Young Adults: Do Self-Concept Clarity and Self-Esteem Matter?" *The Journal of Nervous and Mental Disease*, vol. 209, no. 7, 2021, pp. 525-532. https://doi.org/10.1097/NMD.0000000000001332	473 bicultural young adults from 73 countries (e.g., China, Morocco, Iran)	Cultural identity conflict lowered self-concept clarity and self-esteem, which contributed to emotional distress, psychopathological symptoms, and reduced life satisfaction.
Rivas-Drake, D. "Ethnic-Racial Socialization and Adjustment among Latino College Students: The Mediating Roles of Ethnic Centrality, Public Regard, and Perceived Barriers to Opportunity." *Journal of Youth and Adolescence*, vol. 40, no. 5, 2011, pp. 606-619. https://doi.org/10.1007/s10964-010-9564-z	227 Latino university students	Cultural socialization was positively linked to self-esteem, depression, and physical symptoms. Preparation for bias affected public regard and perceived language barriers to upward mobility, which affected self-esteem.
Root, M. P. P. "Guidelines for Facilitating Therapy with Asian-American Clients." *Psychotherapy: Theory, Research, Practice, Training*, vol. 22, no. 2S, 1985, pp. 349-356. https://doi.org/10.1037/h0085514		The author emphasized the importance of cultural and ethnic sensitivity for professional therapists when treating the mental health challenges of Asian and Pacific Americans.
Sheu, H.-B., and W. H. Sedlacek. "An Exploratory Study of Help-Seeking Attitudes and Coping Strategies among College Students by Race and Gender." *Measurement and Evaluation in Counseling and Development*, vol. 37, no. 3, 2004, pp. 130-143. https://doi.org/10.1080/07481756.2004.11909755	2,678 first-year undergraduates (2,062 White American, 348 Asian American, 268 African American). Within Asian Americans, there were 122 Asian Indian Americans, 117 Chinese Americans, and 80 Korean Americans (multi-ethnic AA were excluded so sample size was smaller than for interracial differences).	African Americans were more likely to seek help; Asian Americans were more likely to use avoidant coping methods (i.e., focusing away from sources of and reactions to stress).
Supple, A. J., et al. "Parental Influences on Hmong University Students' Success." *Hmong Studies Journal*, vol. 11, 2010, pp. 1-37.	13 Hmong college students	Reported results of discussions within focus groups related to parental socialization, gendered socialization, and ethnic identification.

Tracey, T. J., et al. "Help Seeking and Problem Perception among Asian Americans." *Journal of Counseling Psychology*, vol. 33, no. 3, 1986, pp. 331-336. https://doi.org/10.1037/0022-0167.33.3.331	3,050 undergraduates (1,300 White, 332 Chinese American, 102 Filipino American, 126 part-Hawaiian, 47 Korean American, 980 Japanese American, 131 Asian American-White mix, 104 Asian-Asian mix, 442 "other or unmarked").	Asian American clients were more likely to have educational/vocational concerns (rather than personal/emotional concerns). Filipino-American and Asian American-White mix clients were more likely to share personal/emotional concerns than other Asian American groups.
Tran, A. G. T. T., and R. M. Lee. "Perceived Ethnic-Racial Socialization, Ethnic Identity, and Social Competence among Asian American Late Adolescents." *Cultural Diversity & Ethnic Minority Psychology*, vol. 16, no. 2, 2010, pp. 169-178. https://doi.org/10.1037/a0016400	166 Asian American late adolescents (60.8% Hmong, 8.4% Vietnamese, 8.4% Chinese, 3.6% Korean, 3.0% Indian, 15.8% other Asian ethnicities or multiethnic)	Promotion of mistrust was negatively linked to social competence. Cultural socialization was positively related to social competence because it strengthened ethnic identity.
Umaña-Taylor, A. J., et al. "Ethnic and Racial Identity during Adolescence and into Young Adulthood: An Integrated Conceptualization." *Child Development*, vol. 85, no. 1, 2014, pp. 21-39. https://doi.org/10.1111/cdev.12196		Authors proposed a metaconstruct that reflects individuals' sociohistorical context and experiences because of ethnic and racial background.
Woo, B., et al. "Racial Discrimination, Ethnic-Racial Socialization, and Cultural Identities among Asian American Youths." *Cultural Diversity & Ethnic Minority Psychology*, vol. 26, no. 4, 2020, pp. 447-459. https://doi.org/10.1037/cdp0000327	1580 Asian Americans (379 Filipino American youth and 377 parents, 410 Korean American youth and 414 parents)	Racial discrimination was linked to a weaker American identity in youth (concurrent and longitudinal models), as well as increased preparation for bias (concurrent models) and promotion of mistrust (longitudinal models). Preparation for bias contributed to a stronger ethnic identity in Filipino youth. Promotion of mistrust contributed to a weaker ethnic identity in Filipino youth and stronger American identity in Korean youth.
Yu, T., et al. "Asian American Parenting and Youth Mental Health Outcomes: A Literature Review." *Mental Health Science*, vol. 3, no. 1, 2025, p. e101. https://doi.org/10.1002/mhs2.101	44 articles	Intergenerational acculturation gaps and family conflicts contributed to increased mental health risk in AA youth. Parental warmth/support and family cohesion supported adolescent mental health.

Table 1: Characteristics and Main Findings of Reviewed Studies

Results/Discussion

Parental Racial-Ethnic Socialization and AA Adolescent Mental Health

Parental racial-ethnic socialization is a practice in which parents relay messages to their children about their ethnic and racial status (Hughes and Chen). This practice is important to Asian American families; messages have varying purposes, ranging from developing a personal and group identity to functioning in an ethnically and racially diverse society (Tran and Lee). Hughes and Chen proposed a model for parental racial-ethnic socialization that outlined three constructs: cultural socialization, preparation for bias, and promotion of mistrust. Their model is most commonly used to conceptualize parental racial-ethnic socialization in existing literature. Cultural socialization conveys mental health benefits through the strengthening of ethnic identity (Gartner et al.; Huynh et al.; Tran and Lee; Umaña-Taylor et al.), whereas promotion of mistrust conveys mental health risk by inhibiting the development of healthy relationships (Huynh and Fuligni; Tran and Lee), aggravating the link between discrimination and distress (Atkin et al.; Hughes et al.), and pushing adolescents away from their racial-ethnic identity (Atkin and Yoo; Kiang et al., "Latent Profiles"; Woo et al.). Existing literature on the link between preparation for bias and mental health are tenuous (e.g., Atkin et al.; Gartner et al.; Woo et al.).

Cultural Socialization

Cultural socialization is the teaching of racial history, culture, and heritage in order to build ethnic pride, instill belief in oneself in accomplishing important life goals, and create awareness of other ethnic groups (Hughes and Chen; Hughes et al.). Cultural socialization reduces depression, anxiety, and stress in adolescents by strengthening ethnic identity (Gartner et al.; Huynh et al.; Tran and Lee; Umaña-Taylor et al.). This means adolescents were actively trying to learn about their racial/ethnic group and felt a secure sense of belonging to that group (Luo). A strong ethnic identity has been shown to protect against the negative impacts of discrimination: increased substance abuse, depression, and suicidal ideation, and decreased utilization of mental health services (Atkin et al.; Choi et al., "Asian American Mental Health"; Gee et al.; Grossman et al.; Kiang et al., "Model Minority Stereotyping"). Given that AA adolescents experience a greater number of discriminatory experiences compared to peers of other races (Gee et al.), I argue that developing a strong ethnic identity is particularly important. Altogether, cultural socialization buffers the mental health challenges caused by discrimination (e.g., Atkin et al.) by strengthening adolescents' ethnic identity (e.g., Gartner et al.).

Notably, some studies suggest that boys receive less cultural socialization than girls (e.g., Huynh and Fuligni). Reduced exposure to these messages may contribute to inhibited development of the ethnic identity. In turn, boys would be more vulnerable to the negative impacts of discrimination and thereby at an increased risk for developing depression, anxiety, and/or stress (Choi et al., "Asian American Mental Health"; Gartner et al.). Conversely, cultural socialization messages conveying cultural knowledge and pride developed girls' ethnic and American identities (Gartner et al.). By sharing Asian cultural beliefs and practices, parents set the foundation for their children to actively consider and develop other identities (Supple et al.). This is particularly salient for girls: since they are perceived as "primary transmitters" of cultural

values and are socialized to remain close to home, they experience more direct cultural messages than boys (Supple et al.). Because girls simultaneously developed dominant and ethnic culture identities, their mental health was likely better supported than boys' (Atkin and Yoo; Kim and Omizo).

These patterns indicate the importance of developing a strong ethnic identity through the promotion of cultural socialization, which then uplifts adolescent mental health. They further suggest that AA boys should be exposed to more cultural socialization, so that they may be at a decreased risk for developing depression and anxiety.

Preparation for Bias

Preparation for bias is defined as preparing children for future encounters with ethnic or racial discrimination (Hughes and Chen; Tran and Lee; Woo et al.). Existing literature characterizes preparation for bias as both protective and a potential mental health risk factor. On the one hand, by strengthening knowledge of ethnic traditions, preparation for bias develops a strong ethnic identity, thus supporting adolescent mental health, similar to cultural socialization (e.g., Woo et al.). On the other hand, the link between preparation for bias and a stronger ethnic identity did not always hold (e.g., Atkin et al.; Gartner et al.; longitudinal models in Woo et al.), and Huynh et al. even revealed that preparation for bias was negatively associated with psychological distress in LGBTQ+ BIPOC adults. Thus, the inconclusive literature indicates research on the effects of preparation for bias are tenuous and necessary.

Promotion of Mistrust

Promotion of mistrust refers to parental messages that encourage racial mistrust; parents may spread these messages to protect their children from individuals of negatively stereotyped social groups (Hughes and Chen; Tran and Lee; Woo et al.). Promotion of mistrust contributed to worse mental health (Atkin and Yoo; Kiang et al., "Latent Profiles") by impeding the development of healthy relationships with teachers and peers, thus decreasing social competence (Huynh and Fuligni; Tran and Lee). These messages also exacerbated the relationship between discrimination and distress in AA adolescents, which may be due to promotion of mistrust increasing interethnic-racial hostility (prejudice against other Asian ethnic groups or racial minorities, potentially endorsed by stereotypes) or providing inadequate coping mechanisms for discrimination (Atkin et al.; Hughes et al.).

Promotion of mistrust was also related to lower racial-ethnic identity (Atkin and Yoo; Kiang et al., "Latent Profiles"; Woo et al.). This may stem from a desire to decrease the possibility of experiencing discrimination, as promotion of mistrust led youth to believe that other racial groups held negative attitudes about them (Neblett et al.; Rivas-Drake). Additionally, while this finding was not directly tested, it may be explained by adolescents' disagreement and frustration with their parents' messaging.

Altogether, cultural socialization buffers the discrimination-distress link, thus protecting AA adolescent mental health; the effects of preparation for bias are mixed; and promotion of

mistrust exacerbates the discrimination-distress link, thus contributing to mental health challenges. Notably, existing literature on preparation for bias and promotion of mistrust are limited. Future research on these constructs of parental racial-ethnic socialization would be beneficial towards understanding their impact on adolescent mental health. While this section synthesized how different types of parental messaging affected adolescent mental health, the following section consolidates existing literature on the parent-child distance that may affect parents' ability to socialize their children.

Acculturative Family Distancing and AA Adolescent Mental Health

Another notable intergenerational factor that influences AA adolescents' mental health is Acculturative Family Distancing (AFD), which is the distancing that occurs between immigrant parents and children due to acculturation processes and cultural changes (Hwang; Hwang et al.). Acculturation is the process in which immigrants adopt the behavior and attitude of their host culture, while relinquishing their culture of origin (Hwang et al.). Conversely, enculturation is the process of immigrants retaining and passing down their culture and language (Hwang et al.). AFD has two dimensions: breakdowns in communication and incongruent cultural values (Hwang; Hwang et al.). Communication difficulties may result from differing linguistic fluencies between parents and children (Hwang; Hwang and Wood). Misaligned cultural values result from acculturation and heritage enculturation gaps; these gaps often stem from parents and adolescents adhering differently to collectivist (Asian) and individualist (American) cultures (Hwang et al.).[2] AA adolescents tend to acculturate faster than their parents, thus strengthening their American identities (Hwang).

Impacts on Mental Health

AFD is associated with an increased risk for depressive symptoms in AA adolescents (Hwang et al.; Park and Park; Yu et al.). Distance between parents and children increases the risk of intergenerational family conflict, which, in turn, increases the risk of depression and suicidal ideation (Choi et al., "Asian American Mental Health"; Hwang et al.; Yu et al.). AFD also decreases family cohesion and satisfaction, which is a protective factor for adolescent mental health (Yu et al.). Taken together, AFD leads to greater intergenerational family conflict and less family cohesion/satisfaction, which may contribute to poor mental health.

Impacts on Help-Seeking

AFD is negatively associated with AA adolescents' help-seeking behavior. First, the parent-child distance makes it difficult for adolescents to approach parents or guardians when facing a mental health challenge (Qi et al.). As a result, adolescents may be unable to seek professional help (Qi et al.). Second, parents expect their children to conform to Asian culture, which often promotes the maintenance of group harmony and the inhibition of one's emotions (Chiang et al.). Many Asians also believe that mental health challenges can be prevented by

[2] Going forward, for the present review, heritage enculturation will be referred to as "enculturation."

adopting wishful thinking while avoiding morbid thinking (Sheu and Sedlacek). In turn, seeking help may be perceived as a sign of weakness and may bring disgrace upon their family (Gupta et al.; Root). Altogether, AFD is harmful to adolescent mental health as it not only contributes to poor mental health, but also prevents adolescents from seeking professional mental health support. By creating distance between parents and children, I argue that it may inhibit parental racial-ethnic socialization. Specifically, decreased cultural socialization may translate to a weaker ethnic identity, which may reinforce AFD (e.g., enculturation gap stays the same or widens) and contribute to a greater inability to cope with discrimination.

Developing a Bicultural Identity to Promote Adolescent Mental Health

So far, I have argued the importance of adolescents developing an ethnic identity in order to combat the harmful effects of discrimination and AFD. Yet, that is only half the picture. Solely developing an ethnic identity may, in fact, decrease the likelihood of adolescents seeking help (Kim). Because mental health is often stigmatized in Asian cultures, signaling failure and bringing shame upon family members, admitting poor mental health and/or seeking help could alienate adolescents from their ethnic culture (Chiang et al.). American culture may be more facilitative of accepting mental health challenges and seeking help (Leong et al.). However, if adolescents had already distanced themselves from American culture through the sole development of their ethnic identity, then they may not believe in western attitudes (Leong et al.). Thereby, they would still be less likely to seek help (Leong et al.).

Developing an American identity could address some of these negative effects. AA adolescents may be more tolerant of mental health stigma; they were more likely to seek and recognize a need for professional mental health services (Tracey et al.). Nonetheless, as briefly mentioned earlier, if adolescents only developed an American identity, they could be at a greater risk of experiencing AFD, and thereby family conflict and mental health challenges (Choi et al., "Asian American Mental Health"; Hwang et al.; Park and Park; Yu et al.). For instance, an adolescent may experience distance from their parent(s) due to differing values—the more acculturated child may value western ideas of individuality, whereas the less acculturated parent may value Asian ideas of collectivity. This may lead to family conflict, which negatively impacts adolescent mental health. At this point, despite being open to seeking help (because of their adoption of western attitudes), the adolescent may feel too distant from their parents to voice their concerns. Thus, they would continue to struggle with a mental health challenge.

Because the sole development of an ethnic or American identity is harmful, I argue that the development of a bicultural identity—also referred to as biculturalism or integration—may decrease the risk of an adolescent developing mental health challenges (Atkin and Yoo; Kim and Omizo). Benet-Martinez & Haritatos' Bicultural Identity Integration (BII) names cultural distance (vs. overlap) and cultural conflict (vs. harmony) as formative indicators, creating variance in BII for biculturals (Benet-Martinez and Haritatos). These formative indicators may be independent of each other (Benet-Martinez and Haritatos). For instance, some adolescents' cultural identities may overlap and conflict, while other adolescents' cultural identities may

overlap and be in harmony. High BII biculturals refer to adolescents who perceive their ethnic and American identities as compatible and easy to integrate, whereas low BII biculturals refer to adolescents who perceive these cultural identities as incompatible (Benet-Martinez and Haritatos). Existing literature suggests the emotional benefits of developing a high BII identity: increased self-esteem, cognitive flexibility, and positive family relationships compared to individuals who were oriented with either the ethnic or the dominant culture (e.g., Harrison et al.; Nguyen and Benet-Martínez). Bicultural individuals with high BII perceive their ethnic and American identities as compatible and easy to integrate (Benet-Martinez and Haritatos). Further, I argue that strengthening adolescents' ethnic identities may decrease the parent-child enculturation gap, thus minimizing AFD (and its associated mental health impacts) and encouraging help-seeking behavior in AA adolescents.

Developing a high BII identity often involves high acculturation and enculturation (Choi et al., "Explicating Acculturation Strategies"). Exposure to cultural socialization messages may allow AA adolescents to understand their ethnic culture and identity as a source of resilience and strength (Gartner et al.; Huynh et al.; Tran and Lee; Umaña-Taylor et al.). Cultural socialization buffers the discrimination-distress link and decreases enculturation gaps contributing to AFD (Atkin et al.; Choi et al., "Asian American Mental Health"; Grossman et al.). Simultaneously developing an American identity may combat the harmful attitudes and behaviors surrounding mental health within Asian culture (e.g., decreased help-seeking, belief that mental health challenges may be resolved through wishful thinking) and support help-seeking behavior (Leong et al.).

Notably, low BII biculturals—individuals who find difficulty in integrating their dual cultural identities—may experience psychological risk factors. Clashing cultural identities may contribute to emotional distress and decreased satisfaction with life, as it may undermine self-concept clarity and self-esteem (e.g., Rahim et al.). This suggests the importance of adolescents developing high BII to support their mental health.

Finally, it may also be of interest to consider how to support boys in developing their ethnic and American identities through cultural socialization; as represented in the present literature, only AA girls simultaneously develop both identities through cultural socialization (Gartner et al.). Investigating this topic may suggest whether cultural socialization is a mechanism for biculturalism, and specifically, a high BII identity. Conversely, mixed results and less scholarship make it difficult to predict whether preparation for bias and promotion of mistrust contribute to the development of biculturalism. Inconclusive evidence may be due to difficulties discerning preparation for bias from promotion of mistrust, and vice versa, as well as parents infrequently socializing their children with these types of messages (Hughes et al.; Huynh and Fuligni).

Limitations

While this narrative review is a comprehensive overview of the current body of parental racial-ethnic socialization, AFD, and biculturalism literature, there are likely three limiting

factors. First, the findings of this review may be more relevant to East Asian adolescents (than adolescents of other Asian ethnicities) because of the overrepresentation of East Asian adolescents in the current literature. Second, as with other narrative reviews, there is subjectivity inherent to selecting the studies to be included. To mitigate this limitation, I ensured that I only used peer-reviewed studies and deliberately included meta-analyses, literature reviews, theoretical papers, and quantitative studies. Third, this review only examined two intergenerational factors affecting adolescent mental health, despite there being numerous others represented in the literature. This was due to my belief that parental racial-ethnic socialization and AFD are notable, all-encompassing subjects in the literature.

Overrepresentation of East Asian Adolescents

Because this narrative review draws on the existing body of literature, the overrepresentation of East Asian adolescents in those studies carries over into this review. Specifically, most studies had a majority of Chinese American adolescents. Thus, it is possible that these conclusions may not extend to underrepresented populations, such as Southeast Asian or South Asian adolescents (Chaudhry and Chen; Lee et al.). For instance, onset responsibility and courtesy stigma may be psychological risks unique to South Asian adolescents (Chaudhry and Chen). It is my hope that the present review spurs research in underrepresented samples by increasing awareness around this issue.

Subjectivity of the Literature Selected for Review

Similar to other narrative reviews, the studies selected for review may have been influenced by bias, despite steps in the methodology to create objectivity, such as deliberate efforts to include meta-analyses and literature reviews (among other highly-powered studies). As a result, I hope readers will apply their critical thinking to the studies presented in this review. While they may not arrive at the same conclusions as me, it is still my hope that this review will generate necessary discussion on the mental health impacts of parental racial-ethnic socialization and AFD, as well as the kinds of socialization that may be used to mitigate mental health challenges.

Targeted Review of Two Intergenerational Factors

This review focuses on the impacts of two intergenerational factors on adolescent mental health among a wide breadth of intergenerational mental health risk factors in the literature (e.g., parenting, high familial expectations). This decision was because of the following reasons. First, parental racial-ethnic socialization and AFD are both notable intergenerational factors in the current body of literature, and to my extent of knowledge, have not yet been synthesized in a narrative review. Second, I believe parental racial-ethnic socialization and AFD may encompass other intergenerational mental health risk factors. For instance, the two dimensions of AFD are proximal mechanisms of the acculturation gap, thus findings on AFD may include implications of acculturation and enculturation at home (Hwang). Conversely, parental racial-ethnic

socialization may relate and cover the implications of parenting—parents decide how they want to socialize their children (e.g., cultural socialization, preparation for bias, promotion of mistrust). Because the selected psychological risk factors are connected to other intergenerational factors, this review may still have implications for a larger body of literature on the impacts of intergenerational factors on AA adolescent mental health.

Conclusion

The present work provides evidence to support the view that high BII biculturalism supports AA adolescent mental health. Only developing an ethnic or American identity may lead to alienation from dominant and ethnic cultures and AFD, respectively. Cultural socialization may contribute to the development of biculturalism, though it is unclear whether adolescents would develop a high or low BII identity. The tenuous state of preparation for bias and promotion of mistrust literature does not allow me to confidently state whether each type of socialization supports or undermines biculturalism. All in all, my hope is that the present work promotes greater understanding of how intergenerational interactions shape adolescent mental health, as well as how AA parents can best support the identity development of their adolescents. Finally, I hope this narrative review may encourage future research to examine the interactions between parental racial-ethnic socialization, AFD, and biculturalism, introducing researchers who have specialized in one framework (e.g., parental racial-ethnic socialization) to another (e.g., AFD).

Works Cited

The Asian American Foundation. Beyond the Surface: Understanding Mental Health among Asian American, Native Hawaiian, and Pacific Islander Youth. The Asian American Foundation, 2024, p. 37. https://beyond-the-surface.s3.amazonaws.com/beyond-the-surface-youth-mental-health-report-2024.pdf

Atkin, A. L., et al. "What Types of Racial Messages Protect Asian American Adolescents from Discrimination? A Latent Interaction Model." Journal of Counseling Psychology, vol. 66, no. 2, 2019, pp. 247-254. https://doi.org/10.1037/cou0000297

Atkin, A., and H. Yoo. "Patterns of Racial-Ethnic Socialization in Asian American Families: Associations with Racial-Ethnic Identity and Social Connectedness." Journal of Counseling Psychology, vol. 68, 2020, pp. 17-26. https://doi.org/10.1037/cou0000435

Benet-Martínez, V., and J. Haritatos. "Bicultural Identity Integration (BII): Components and Psychosocial Antecedents." Journal of Personality, vol. 73, no. 4, 2005, pp. 1015-1049. https://doi.org/10.1111/j.1467-6494.2005.00337.x

Chaudhry, T., and S. H. Chen. "Mental Illness Stigmas in South Asian Americans: A Cross-Cultural Investigation." Asian American Journal of Psychology, vol. 10, no. 2, 2019, pp. 154-165. https://doi.org/10.1037/aap0000141

Chiang, S., et al. "Asian American Adolescent Help-Seeking Pathways for Psychological Distress." Asian American Journal of Psychology, vol. 13, no. 2, 2022, pp. 194-206. https://doi.org/10.1037/aap0000241

Choi, Y., et al. "Asian American Mental Health: Longitudinal Trend and Explanatory Factors among Young Filipino- and Korean Americans." SSM - Population Health, vol. 10, 2020, p. 100542. https://doi.org/10.1016/j.ssmph.2020.100542

Choi, Y., et al. "Explicating Acculturation Strategies among Asian American Youth: Subtypes and Correlates across Filipino and Korean Americans." Journal of Youth and Adolescence, vol. 47, no. 10, 2018, pp. 2181-2205. https://doi.org/10.1007/s10964-018-0862-1

Daga, S. S., and V. V. Raval. "Ethnic-Racial Socialization, Model Minority Experience, and Psychological Functioning among South Asian American Emerging Adults: A Preliminary Mixed-Methods Study." Asian American Journal of Psychology, vol. 9, no. 1, 2018, pp. 17-31. https://doi.org/10.1037/aap0000108

Gartner, M., et al. "Prospective Links between Ethnic Socialization, Ethnic and American Identity, and Well-Being among Asian-American Adolescents." Journal of Youth and Adolescence, vol. 43, no. 10, 2014, pp. 1715-1727. https://doi.org/10.1007/s10964-013-0044-0

Gee, G. C., et al. "Racial Discrimination and Health among Asian Americans: Evidence, Assessment, and Directions for Future Research." Epidemiologic Reviews, vol. 31, no. 1, 2009, pp. 130-151. https://doi.org/10.1093/epirev/mxp009

Grossman, J. M., and B. Liang. "Discrimination Distress among Chinese American Adolescents." Journal of Youth and Adolescence, vol. 37, no. 1, 2008, pp. 1-11. https://doi.org/10.1007/s10964-007-9215-1

Guo, S., et al. “Linkages between Mental Health Need and Help-Seeking Behavior among Adolescents: Moderating Role of Ethnicity and Cultural Values.” Journal of Counseling Psychology, vol. 62, no. 4, 2015, pp. 682-693. https://doi.org/10.1037/cou0000094

Gupta, A., et al. “The ‘Model Minority Myth’: Internalized Racialism of Positive Stereotypes as Correlates of Psychological Distress, and Attitudes toward Help-Seeking.” Asian American Journal of Psychology, vol. 2, no. 2, 2011, pp. 101-114. https://doi.org/10.1037/a0024183

Harrison, A. O., et al. “Family Ecologies of Ethnic Minority Children.” Child Development, vol. 61, no. 2, 1990, pp. 347-362. https://doi.org/10.2307/1131097

Hughes, D., and L. Chen. “When and What Parents Tell Children about Race: An Examination of Race-Related Socialization among African American Families.” Applied Developmental Science, vol. 1, no. 4, 1997, pp. 200-214. https://doi.org/10.1207/s1532480xads0104_4

Hughes, D., et al. “Parents’ Ethnic-Racial Socialization Practices: A Review of Research and Directions for Future Study.” Developmental Psychology, vol. 42, no. 5, 2006, pp. 747-770. https://doi.org/10.1037/0012-1649.42.5.747

Huynh, K. D., et al. “Ethnic-Racial Socialization, Psychological Distress, and Identity Pride for LGBTQ+ Black, Indigenous, People of Color.” Journal of Counseling Psychology, vol. 73, no. 2, 2026, pp. 143-155. https://doi.org/10.1037/cou0000854

Huynh, V. W., and A. J. Fuligni. “Ethnic Socialization and the Academic Adjustment of Adolescents from Mexican, Chinese, and European Backgrounds.” Developmental Psychology, vol. 44, no. 4, 2008, pp. 1202-1208. https://doi.org/10.1037/0012-1649.44.4.1202

Hwang, W.-C. “Acculturative Family Distancing: Theory, Research, and Clinical Practice.” Psychotherapy: Theory, Research, Practice, Training, vol. 43, no. 4, 2006, pp. 397-409. https://doi.org/10.1037/0033-3204.43.4.397

Hwang, W.-C., and J. J. Wood. “Acculturative Family Distancing: Links with Self-Reported Symptomatology among Asian Americans and Latinos.” Child Psychiatry and Human Development, vol. 40, no. 1, 2009, pp. 123-138. https://doi.org/10.1007/s10578-008-0115-8

Hwang, W.-C., et al. “Acculturative Family Distancing (AFD) and Depression in Chinese American Families.” Journal of Consulting and Clinical Psychology, vol. 78, no. 5, 2010, pp. 655-667. https://doi.org/10.1037/a0020542

Ibrahim, A., et al. “A Scoping Review of Mental Health and Discrimination of Asian Americans and Pacific Islanders in the United States during the COVID-19 Pandemic.” Nature Mental Health, vol. 2, 2024, pp. 244-253. https://doi.org/10.1038/s44220-023-00177-y

Kiang, L., et al. “Latent Profiles of Discrimination and Socialization Predicting Ethnic Identity and Well-Being among Asian American Adolescents.” Journal of Research on Adolescence, vol. 29, no. 2, 2019, pp. 523-538. https://doi.org/10.1111/jora.12403

Kiang, L., et al. “Model Minority Stereotyping, Perceived Discrimination, and Adjustment among Adolescents from Asian American Backgrounds.” Journal of Youth and

Adolescence, vol. 45, no. 7, 2016, pp. 1366-1379. https://doi.org/10.1007/s10964-015-0336-7

Kim, A. Y., and R. M. Lee. “A Critical Adoption Studies and Asian Americanist Integrative Perspective on the Psychology of Korean Adoption.” The Routledge Handbook of Adoption, 1st ed., Routledge, 2020, p. 15.

Kim, B., and M. Omizo. “Behavioral Acculturation and Enculturation and Psychological Functioning among Asian American College Students.” Cultural Diversity & Ethnic Minority Psychology, vol. 12, 2006, pp. 245-258. https://doi.org/10.1037/1099-9809.12.2.245

Kim, B. S. K. “Adherence to Asian and European American Cultural Values and Attitudes toward Seeking Professional Psychological Help among Asian American College Students.” Journal of Counseling Psychology, vol. 54, no. 4, 2007, pp. 474-480. https://doi.org/10.1037/0022-0167.54.4.474

Lee, S. Y., et al. “Mental Disorders and Mental Health Service Use across Asian American Subethnic Groups in the United States.” Community Mental Health Journal, vol. 51, no. 2, 2015, pp. 153-160. https://doi.org/10.1007/s10597-014-9749-0

Leong, F. T. L., et al. “Attitudes toward Professional Counseling among Asian-American College Students: Acculturation, Conceptions of Mental Illness, and Loss of Face.” Asian American Journal of Psychology, vol. 2, no. 2, 2011, pp. 140-153. https://doi.org/10.1037/a0024172

Leung, A. N., et al. “Filial Piety and Psychosocial Adjustment in Hong Kong Chinese Early Adolescents.” The Journal of Early Adolescence, vol. 30, no. 5, 2010, pp. 651-667. https://doi.org/10.1177/0272431609341046

Luo, E. “Understanding Adolescent Ethnic-Racial Identity: A Latent Profile Approach.” D-Lab, University of California, Berkeley, 24 Sept. 2024, https://dlab.berkeley.edu/news/understanding-adolescent-ethnic-racial-identity-latent-profile-approach

Neblett, E. W., et al. “Racial Socialization and Racial Identity: African American Parents’ Messages about Race as Precursors to Identity.” Journal of Youth and Adolescence, vol. 38, no. 2, 2009, pp. 189-203. https://doi.org/10.1007/s10964-008-9359-7

Nguyen, A.-M., and V. Benet-Martínez. “Biculturalism and Adjustment: A Meta-Analysis.” Journal of Cross-Cultural Psychology, vol. 44, 2013, pp. 122-159. https://doi.org/10.1177/0022022111435097

Office of Minority Health. “Mental Health and Asian Americans.” U.S. Department of Health and Human Services, Mar. 2026, https://minorityhealth.hhs.gov/mental-and-behavioral-health-asian-americans

Park, Y., and S.-Y. Park. “Acculturative Family Distancing and Depressive Symptoms among Korean American Adolescents: The Mediating Role of Family Conflicts.” Child & Adolescent Social Work Journal, 2024. https://doi.org/10.1007/s10560-024-00999-4

Qi, H. V., et al. “Barriers to Mental Health Help-Seeking among Asian American Adolescents: A Systematic Review.” Asian American Journal of Psychology, vol. 16, no. 3, 2025, pp. 213-230. https://doi.org/10.1037/aap0000373

Rahim, H. F., et al. “Cultural Identity Conflict and Psychological Well-Being in Bicultural Young Adults: Do Self-Concept Clarity and Self-Esteem Matter?” The Journal of Nervous and Mental Disease, vol. 209, no. 7, 2021, pp. 525-532. https://doi.org/10.1097/NMD.0000000000001332

Rivas-Drake, D. “Ethnic-Racial Socialization and Adjustment among Latino College Students: The Mediating Roles of Ethnic Centrality, Public Regard, and Perceived Barriers to Opportunity.” Journal of Youth and Adolescence, vol. 40, no. 5, 2011, pp. 606-619. https://doi.org/10.1007/s10964-010-9564-z

Root, M. P. P. “Guidelines for Facilitating Therapy with Asian-American Clients.” Psychotherapy: Theory, Research, Practice, Training, vol. 22, no. 2S, 1985, pp. 349-356. https://doi.org/10.1037/h0085514

Sheu, H.-B., and W. H. Sedlacek. “An Exploratory Study of Help-Seeking Attitudes and Coping Strategies among College Students by Race and Gender.” Measurement and Evaluation in Counseling and Development, vol. 37, no. 3, 2004, pp. 130-143. https://doi.org/10.1080/07481756.2004.11909755

Supple, A. J., et al. “Parental Influences on Hmong University Students’ Success.” Hmong Studies Journal, vol. 11, 2010, pp. 1-37.

Tracey, T. J., et al. “Help Seeking and Problem Perception among Asian Americans.” Journal of Counseling Psychology, vol. 33, no. 3, 1986, pp. 331-336. https://doi.org/10.1037/0022-0167.33.3.331

Tran, A. G. T. T., and R. M. Lee. “Perceived Ethnic-Racial Socialization, Ethnic Identity, and Social Competence among Asian American Late Adolescents.” Cultural Diversity & Ethnic Minority Psychology, vol. 16, no. 2, 2010, pp. 169-178. https://doi.org/10.1037/a0016400

Umaña-Taylor, A. J., et al. “Ethnic and Racial Identity during Adolescence and into Young Adulthood: An Integrated Conceptualization.” Child Development, vol. 85, no. 1, 2014, pp. 21-39. https://doi.org/10.1111/cdev.12196

Woo, B., et al. “Racial Discrimination, Ethnic-Racial Socialization, and Cultural Identities among Asian American Youths.” Cultural Diversity & Ethnic Minority Psychology, vol. 26, no. 4, 2020, pp. 447-459. https://doi.org/10.1037/cdp0000327

Yu, T., et al. “Asian American Parenting and Youth Mental Health Outcomes: A Literature Review.” Mental Health Science, vol. 3, no. 1, 2025, p. e101. https://doi.org/10.1002/mhs2.101

Patterns of Pedagogical Repetition in Children's Educational Television By Sarah Du

Abstract

Educational television is one of the most widely used resources for early childhood learning. This study examines how pedagogical strategies are repeated across educational television programs and whether repetition patterns differ according to the developmental stage of their intended audiences. This study analyzed transcripts from 30 episodes across six educational television series (*CoComelon, Dora the Explorer, Sesame Street, Puffin Rock, Sarah & Duck,* and *Tumble Leaf*) using a structured coding framework consisting of fifteen pedagogical strategy categories. The analysis identified pedagogical frames by matching transcript dialogue to a predefined coding dictionary and normalized frame counts by transcript length to allow comparisons across programs. The results show that repetition is not distributed uniformly across educational television. Instead, programs emphasize different pedagogical strategies to support different age groups and learning goals. These findings suggest that repetition functions as a flexible pedagogical strategy that is intentionally adapted to children's developmental needs and the educational objectives of individual programs across different stages of development.

1. Introduction

Watching television and online video remains the dominant form of media consumption among young children (Common Sense 20). Children aged zero to eight spend an average of one hour and 28 minutes per day watching television and online video, accounting for 64% of their daily screen time (Common Sense 20). Given the substantial amount of time children spend engaging with screen media, educational television has become one of the most widespread and accessible resources for early learning (Fisch). Unlike entertainment programming, which is generally not designed to prompt children's cognitive development, educational television is intentionally created to teach specific skills and other concepts (Schryer 23). The educational value of children's television has also been well documented. A meta-analysis of *Sesame Street* found that children can learn a wide range of concepts and skills – including language, literacy, and early academic abilities – from educational television (Mares and Pan). Unlike traditional classroom instruction, these programs rely on audiovisual storytelling, music, movement, and direct interaction with the audience to maintain children's attention while introducing new concepts.

Educational children's television frequently relies on repetition to reinforce learning, consistent with developmental research demonstrating that repetition plays a fundamental role in young children's learning (Fisch; Horst et al.). Children rarely master new knowledge after a single encounter. Instead, learning typically emerges through repeated opportunities to hear, see, practice, and retrieve information across multiple contexts. To reinforce learning, educational television repeats instructional commands, physical actions, social interactions, memory prompts, guided participation, and viewer engagement techniques. Rather than asking whether educational television uses lexical repetition, this study explores how frequently different

pedagogical strategies are repeated and whether those patterns differ systematically across programs targeting separate age groups. By comparing six educational television series using a structured pedagogical coding framework, this paper argues that educational television programs do not repeat pedagogical strategies uniformly. Instead, patterns of repetition reflect both the developmental stage of the intended audience and the specific educational goals of individual programs.

2. Methodology

2.1 Dataset

This study analyzed transcripts from six educational children's television series: *CoComelon, Dora the Explorer, Sesame Street, Puffin Rock, Sarah & Duck,* and *Tumble Leaf.* These programs were chosen to capture a wide range of widely recognized and less widely studied series with different educational goals, teaching styles, and target audiences spanning infancy through the preschool years.

Educational Television Programs Included in the Study and Their Intended Age Groups

Educational Show	Age Group
CoComelon	Infants and Toddlers (0-3 years)
Dora the Explorer	Preschoolers (2-5 years)
Sesame Street	Preschoolers (2-5 years)
Puffin Rock	Preschoolers (2-5 years)
Sarah & Duck	Preschoolers (2-5 years)
Tumble Leaf	Preschoolers (2-5 years)

Table 1: Intended age groups were determined from official program descriptions and broadcaster or producer information.

Five episodes were randomly selected from each series, resulting in a collection of 30 episodes. Episode transcripts served as the primary unit of textual data because they capture the verbal instructional content presented throughout each program. Prior to analysis, transcripts were cleaned to remove non-dialogue elements, including sound effects and production cues, and standardized to ensure consistent text processing across all programs.

2.2 Coding Framework

The analysis was based on a predefined coding framework consisting of 15 pedagogical strategy categories. Rather than coding dialogue according to broad themes after viewing the programs, each category was operationalized before analysis using a dictionary of representative keywords and short phrases. This approach allowed pedagogical strategies to be identified

consistently across all transcripts using the same objective criteria. The categories are listed below in Table 2.

Pedagogical Strategy Coding Framework Used to Classify Repeated Educational Content

Category	Definition	Example Keywords / Phrases
Viewer Engagement	Captures and maintains children's attention by encouraging them to observe, recall, or respond to the program.	"Can you," "will you," "would you like to," "do you see"
Guided Participation	Encourages children to actively participate alongside the characters throughout the learning activity.	"Let's…," "come on," "join me," "your turn"
Instruction Command	Directs children to perform a specific action that reinforces the concept being taught.	"Say it with me," "repeat after me," "take a look," "listen to…," "find the…"
Procedural Guidance	Breaks tasks into sequential steps to scaffold children's understanding of processes and routines.	"First we," "next we," "then we," "now we," "last we," "before", "after"
Vocabulary Teaching	Introduces and reinforces new words, labels, and basic concepts to support language development.	"This is called," "this is…," "another word for," "the name of"
Counting & Numeracy	Reinforces early mathematical concepts such as counting, quantity, ordering, and comparison.	"Count with me," "how many/much," "first second third," "more than," "less than"
Reasoning & Prediction	Encourages children to think critically, make predictions, solve problems, and explain their reasoning.	"What do you think," "why do you think," "what will happen"
Positive Reinforcement	Reinforces participation and correct response through praise and encouragement, promoting confidence and continued engagement.	"Good job," "excellent," "hooray" "you did it," "fantastic"
Social Communication	Models the language and conversational skills children use in everyday social interactions.	"Nice to meet you," "see you later," "good afternoon," "hello," "thank you," "please," "excuse me," "let's be friends,"
Emotional Learning	Helps children recognize, express, and regulate emotions while developing emotional understanding.	"How do you feel," "are you okay," "don't worry," "It's okay"
Imaginative Play	Encourage creativity and pretend play to support imaginative thinking and exploration.	"Let's pretend," "imagine," "we're going to be"
Daily Routines	Reinforces everyday habits and self-care routines that support children's independence and daily functioning.	"It's time to," "brush your teeth," "wash your hands," "clean up,"
Celebration & Music	Using songs, rhythm, and celebrity cues to encourage participation and reinforce learning.	"Let's sing," "sing along," "everybody sing," "let's dance," "move your body"

Help & Collaboration	Promotes cooperation, helping behaviors, and collaborative problem-solving with others.	"I need your help," "work together," "we can help"
Physical Engagement	Encourages movement and gestures that actively reinforce learning through physical participation.	"Jump," "clap your hands," "stomp your feet," "wave your hands," "raise your hands," "shake," "touch your nose/toes/ears/shoulders"

Table 2: Pedagogical strategy coding framework used for transcript analysis

This coding framework was developed by the author to identify and classify repeated pedagogical strategies in educational television. Definitions summarize each category, and the example keywords represent only a small subset of the complete coding vocabulary used during transcript analysis.

2.3 Coding Procedure

Transcript analysis was conducted using Python through a Jupyter notebook. A custom script processed each transcript line by line, comparing the text against a predefined coding dictionary containing keywords and short phrases representing each pedagogical strategy category. Whenever a dialogue line contained a keyword or phrase corresponding to a pedagogical category, the script recorded an occurrence of that category.

The unit of analysis was defined as a pedagogical frame: a single occurrence of a pedagogical strategy identified whenever a line of dialogue contained one or more trigger phrases associated with a predefined category. For example, a phrase such as "*Say it with me"* was classified as an Instruction Command frame, whereas "*Jump up high"* was classified as a Physical Engagement frame. The coding framework remained unchanged throughout the study to ensure methodological consistency across all programs.

2.4 Repetition Measurement

For each television program, the total number of pedagogical frames identified within each category was calculated. Since transcript lengths differed across programs, raw frame counts were normalized using frames per 1000 words. This metric controlled for differences in episode length and dialogue density**,** allowing repetition frequencies to be compared directly across programs.

Repetition density was calculated as:

$Frames\ per\ 1000\ words\ = \frac{Number\ of\ pedagogical\ frames}{Total\ transcript\ words} \times\ 1000$. This normalized measure served as the primary indicator of the frequency with which each pedagogical strategy was repeated.

2.5 Data Visualization

Graphical visualizations were programmatically generated within the same Jupyter notebook using Python. Heatmaps were used to compare repetition density across pedagogical

categories, while stacked bar charts illustrated the relative distribution of pedagogical strategies across the six educational programs.

2.6 Limitations

Experimental research involving young children required Institutional Review Board (IRB) approval, limiting the scope and design of interventions that could be conducted. As a result, this study was limited to pure transcript analysis. Additionally, the coding framework relied on a predefined dictionary of keywords and phrases. Although developed to capture a broad range of pedagogical strategies, synonymous expressions, alternative wording, or contextual variations may not have been captured.

3. Results and Discussion

Distribution of Pedagogical Strategy Use Across Educational Television Programs

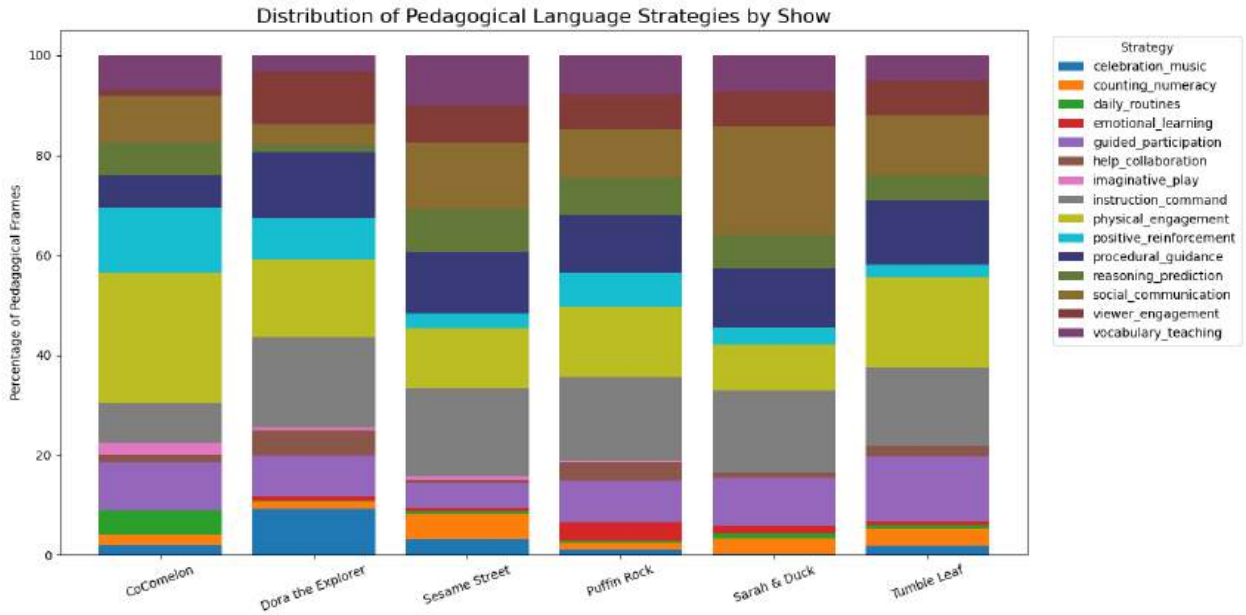


Fig 1: Each stacked bar represents one educational television program. Each colored segment corresponds to a pedagogical strategy, and its height indicates the percentage of total coded pedagogical frames assigned to that strategy within the program. Percentages were normalized by the total number of pedagogical frames identified in each program, allowing comparisons across programs of different transcript lengths.

Figure 1 shows that while all of the educational programs employed a variety of pedagogical strategies, they did not emphasize them equally. Instead, each program placed greater emphasis on particular strategies through repetition, reflecting its specific educational goals and intended audience.

Heatmap of Pedagogical Strategy Density Across Educational Television Programs.

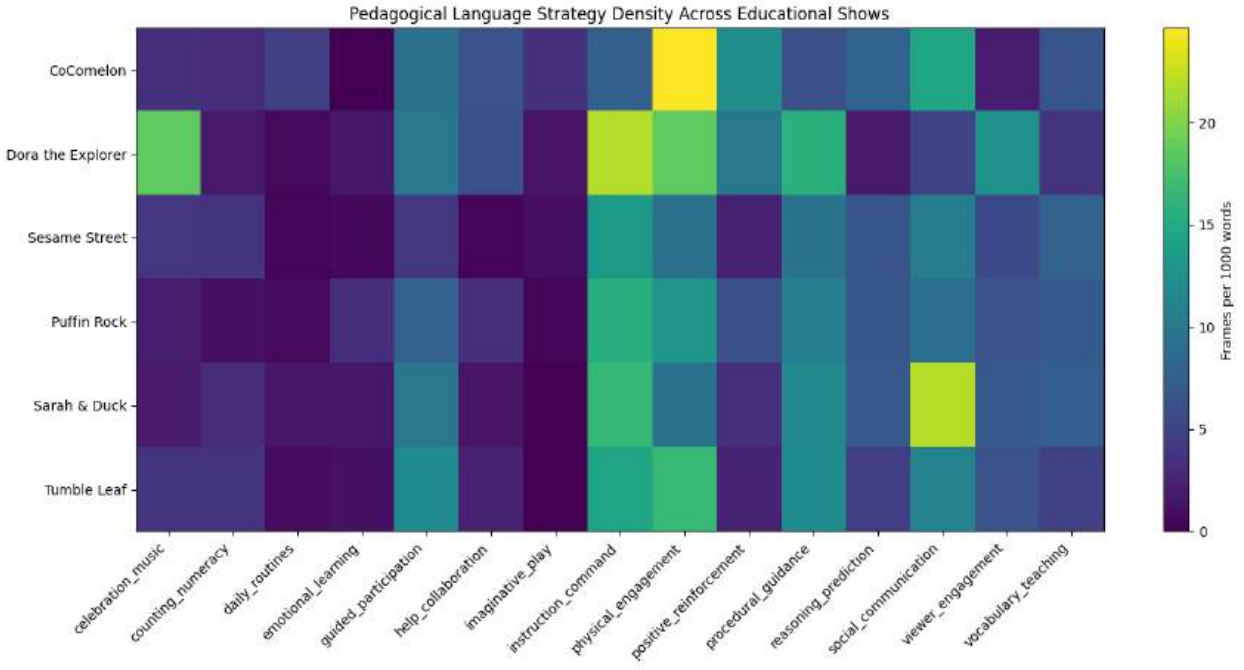


Fig 2: Each row represents an educational television program, and each column represents one pedagogical strategy. Cell color indicates the density of coded pedagogical frames for that strategy, expressed as the number of pedagogical frames per 1,000 words. Warmer colors indicate higher densities, whereas cooler colors indicate lower densities. Values were normalized by transcript length to facilitate comparisons across programs.

3.1 Preschool-targeted shows repeat verbal and instructional strategies most heavily

One of the clearest patterns observed across the six educational programs was that preschool-targeted shows relied most heavily on repeated verbal and instructional strategies. In particular, *Dora the Explorer* exhibits the highest repetition density of instruction_command frames of any program in the dataset. These instructional repetitions appeared consistently throughout episodes, with phrases such as "*Can you help me?"* and "*Say it with me!"* repeatedly inviting viewers to respond aloud and actively engage with the content.

This pattern closely aligns with the findings of Krcmar and Cingel in their study, *Do Children Really Learn Best From the Use of Direct Address in Children's Television?,* which examined whether direct address enhances young children's learning from educational television. In a controlled experiment involving 73 children between 18 and 46 months (approximately 1.5-3.8 years) of age, the researchers compared two nearly identical educational videos in which four objects were presented repeatedly. One of the objects, the target object, was consistently labeled with the novel word *toma,* while the remaining objects served as distractors. The only difference between the videos was whether the character addressed the child directly by looking into the camera or instead spoke to another character while the child observed. After viewing, children were shown four unfamiliar objects, including the object labeled in the video, and were asked to identify the target object (e.g. "Can you show me the *toma?*"). In the direct address condition, 15 of the 38 children (39.5%) correctly selected the target object when asked to

identify the *toma.* In contrast, in the third-party condition, where the character spoke to another character rather than directly to the viewer, only 7 of the 35 children (20.0%) correctly identified the target object.

Importantly, the benefits of direct address were not consistent across all age groups. The effect was strongest among children between 28 and 41 months of age (approximately 2.3-3.4 years). Within this developmental window, 10 of 15 children (66.7%) in the direct address condition correctly identified the target object, compared with only 4 of 17 children (23.5%) in the third party condition, a statistically significant difference. Outside that age window, children aged 18 to 28 months (approximately 1.5-2.3 years) showed low learning rates regardless of condition (15.0% vs 7.7%), while children aged 41 to 48 months (approximately 3.4-4.0 years) performed well in both conditions (100.0% vs. 50.0%), though this difference was not statistically significant given the small sample size for this older group (n=4) (Krcmar and Cingel).

This age-boundedness is worth noting. It means that direct address is effective only within a relatively narrow developmental window, rather than across all ages. *Dora*'s target audience is consistently described as roughly 2 to 5 years old (Villarreal), which places it almost exactly on top of the age range where the experiment found the effect.

The repeated use of instruction_command throughout *Dora the Explorer* means that children are continuously encouraged to take part in the lesson rather than simply watch it. Each prompt provides another opportunity to respond to the program and reinforce the target vocabulary or concept being taught. This pattern is not unique to *Dora*. The other preschool-targeted programs in the present dataset also relied heavily on repeated instruction_command frames, suggesting that direct instructional prompting is a common pedagogical strategy in preschool educational television. *Dora,* however, places particular emphasis on this approach, making it the defining feature of its instructional style.

This sets up a direct comparison for Section 3.2: if instruction_command repetition is tied to this particular age window, a show aimed at a younger audience would show a different dominant repetition pattern instead, which is exactly what *CoComelon* physical_engagement data shows.

3.2 Infant- and toddler-targeted shows repeat physical and embodied strategies most heavily

A second major pattern observed across the dataset was that educational programs targeting infants and toddlers relied most heavily on repeated physical and embodied strategies. In particular, *CoComelon* exhibited the highest repetition density of physical_engagement frames of any category in the entire dataset. These repetitions appeared consistently throughout episodes through repeated prompts such as "*Clap your hands," "Jump,"* and *"Stomp your feet,"* which repeatedly encouraged children to move alongside the characters. This concentration of physical_engagement frames is considerably greater than the emphasis any other program places

on a single pedagogical strategy, suggesting that physical repetition serves as the structural foundation of *CoComelon's* educational approach.

Unlike *Dora the Explorer,* whose dominant repetition strategy centers on repeated verbal instruction, *CoComelon's* primary strategy relies on repeated movement. This distinction is particularly meaningful because previous research suggests that direct verbal interaction alone may not be equally effective across all stages of early childhood development. As discussed in Section 3.1, Krcmar and Cingel found that children younger than approximately 28 months (2.3 years) did not benefit significantly from either direct verbal address or third-person observation, with both groups performing similarly poorly on measures of word learning (Krcmar and Cingel). This suggests that below a certain developmental window, modifying the verbal delivery alone may not be sufficient to support learning from educational video.

Research on early language development offers a possible explanation for this difference. Rather than relying primarily on spoken language, young children initially communicate through physical actions and gestures. Iverson and Goldin-Meadow explain that children often use gestures before they produce words, demonstrating that gesture plays a fundamental role in early language development. In this same longitudinal study, Iverson and Goldin-Meadow followed children as they progressed from single words to two-word combinations. The researchers found that gesture was closely related to both vocabulary and syntactic development and that changes in gesture thus preceded and predicted subsequent changes in language development, leading the authors to conclude that gesture contributes directly to the early development of language (Iverson and Goldin-Meadow 367). Rather than merely preceding spoken language by coincidence, gesture appears to actively support its development.

This developmental relationship is further reinforced by research on embodied cognition, which suggests that learning is strengthened when cognitive processes are paired with physical movement. Shapiro and Stolz argue that physical interaction with the environment can enhance higher-order cognitive processes such as thinking, learning, and problem solving. Likewise, producing gestures during learning supports cognitive processing by extending children's limited working memory into the external world through the use of their hands (Pouw et al.). Together, these findings suggest that physical actions actively support the cognitive processes involved in learning for children.

Collectively, these findings help explain why *CoComelon* relies so heavily on repeated physical engagement. If very young children have not yet reached the developmental window at which direct verbal interaction alone reliably supports learning from video, repeatedly pairing language with actions such as clapping and jumping provides an alternative pathway for reinforcing new concepts. Rather than simply repeating words, *CoComelon* repeatedly encourages children to physically enact what they hear, aligning closely with developmental research. Physical engagement was also present across the preschool-targeted programs in the dataset, suggesting that embodied learning remains beneficial throughout early childhood, even if it is no longer the dominant pedagogical strategy.

3.3 Pedagogical repetition as a tool for improving social communication

Sarah & Duck has a high repetition density of social_communication relative to other categories in the dataset, shown directly in recurring phrases like "hello," "thank you," "sorry," and "let's be friends." Rather than introducing new vocabulary or directing children to complete a task, these repeated interactions consistently model the language children use in everyday social situations.

This pattern closely aligns with Lau's description of the preschool years as a critical period for the development of language and social competence. Lau explains that during this stage, children use language to engage with peers and familiar adults, learn how to initiate interactions, maintain turn-taking in conversations, and participate successfully in social settings (405). Lau further argues that children with weaker language or social skills may be less able to adapt to new social environments and peer interactions, placing them at greater risk for later difficulties in school (406).

The importance of these everyday social interactions is further supported by research examining children's social competence through observable behaviours. Using data from the Social and Physical Development, Interventions and Adaptation (SOFIA) study, Frogner et al. assessed children's social skills through behaviours including saying hello and goodbye, responding politely when spoken to, maintaining eye contact, saying "thank you," and helping others. Many of these behaviours closely resemble the repeated social phrases found throughout *Sarah & Duck.* Frogner et al. found that consistently strong social skills in early childhood were associated with better primary school performance, whereas consistently poor social skills were associated with poorer school performance (Frogner et al.). Together, these findings suggest that simple social behaviours, including polite greetings and expressions of gratitude, play an important role in children's broader social development.

This provides a different interpretation of repetition from patterns observed in *Dora the Explorer* and *CoComelon.* Rather than placing emphasis on reinforcing instructional commands or physical actions, *Sarah & Duck* repeatedly models the language children use to communicate with others. Greetings, apologies, expressions of gratitude, and other everyday social exchanges appear throughout the show's episodes, giving children repeated exposure to the kinds of interactions that developmental research identifies as important for building social competence.

Conclusion

This study demonstrates that the use of repetition in educational television varies according to the developmental stage of the target audience and the educational objectives of each program. Across the six television series analyzed, different forms of repetition emerged as defining features of different programs.

Rather than relying on a single pattern of repetition, educational programs appear to tailor their pedagogical strategies to the developmental needs of their intended audience. Programs targeting infants and toddlers rely most heavily on repeated movement and embodied interaction, while those targeting preschool-aged children place greater emphasis on repeated verbal

instruction and commands. Other series prioritize repeated social exchange that model everyday communication and relationship building. These differences suggest that repetition serves to reinforce the specific skills each program is designed to develop, extending beyond simply increasing children's exposure to information.

Understanding repetition as a collection of distinct pedagogical strategies provides a more nuanced perspective on how children's educational media supports learning and highlights the intentional ways television programs align their instructional approaches with children's development.

Overall, these findings provide a more nuanced understanding of repetition as a flexible pedagogical strategy in educational television. They demonstrate how programs adapt repetition to support children's developmental needs and specific learning objectives.

Acknowledgements

The author would like to thank Dr. Ganesh Mani, a professor at Carnegie Mellon University, for his guidance and insightful feedback throughout the development of this research.

Works Cited

Common Sense. The Common Sense Census: Media Use by Kids Zero to Eight. 2025, https://www.commonsensemedia.org/sites/default/files/research/report/2025-common-sense-census-web-2.pdf.

Fisch, Shalom M. Children's Learning From Educational Television. Routledge, 2004, https://www.routledge.com/Childrens-Learning-From-Educational-Television-Sesame-Street-and-Beyond/Fisch/p/book/9780805839364.

Frogner, Louise, et al. "Stability and Change in Early Social Skills Development in Relation to Early School Performance: A Longitudinal Study of a Swedish Cohort." Early Education and Development, vol. 33, no. 1, Jan. 2021, pp. 17–37, https://doi.org/10.1080/10409289.2020.1857989.

Horst, Jessica S., et al. "Get the Story Straight: Contextual Repetition Promotes Word Learning From Storybooks." Frontiers in Psychology, vol. 2, no. 17, 2011, https://doi.org/10.3389/fpsyg.2011.00017.

Iverson, J. M., and S. Goldin-Meadow. "Gesture Paves the Way for Language Development." Psychological Science, vol. 16, no. 5, May 2005, pp. 367–71, https://doi.org/10.1111/j.0956-7976.2005.01542.x.

Krcmar, Marina, and Drew P. Cingel. "Do Young Children Really Learn Best From the Use of Direct Address in Children's Television?" Media Psychology, vol. 22, no. 1, Sept. 2017, pp. 152–71, https://doi.org/10.1080/15213269.2017.1361841.

Lau, Clarissa. "Inter-Relations of Core Language, Pragmatic Language, and Social Competence in Preschoolers." Research in Language, vol. 13, no. 4, Dec. 2015, pp. 404–25, https://doi.org/10.1515/rela-2015-0033.

Linebarger, Deborah L., and Jessica Taylor Piotrowski. "Structure and Strategies in Children's Educational Television: The Roles of Program Type and Learning Strategies in Children's Learning." Child Development, vol. 81, no. 5, Sept. 2010, pp. 1582–97, https://doi.org/10.1111/j.1467-8624.2010.01493.x.

Mares, Marie-Louise, and Zhongdang Pan. "Effects of Sesame Street: A Meta-Analysis of Children's Learning in 15 Countries." Journal of Applied Developmental Psychology, vol. 34, no. 3, May 2013, pp. 140–51, https://doi.org/10.1016/j.appdev.2013.01.001.

Pouw, Wim T. J. L., et al. "Toward a More Embedded/Extended Perspective on the Cognitive Function of Gestures." Frontiers in Psychology, vol. 5, Apr. 2014, https://doi.org/10.3389/fpsyg.2014.00359.

Pérez, Paloma, et al. "Behavior-Specific Praise: Empowering Teachers and Families to Support Students in Varied Learning Contexts." Preventing School Failure: Alternative Education for Children and Youth, vol. 67, no. 2, Feb. 2023, pp. 1–8, https://doi.org/10.1080/1045988x.2023.2181303.

Schryer, Erin A. "The Influence of Educational Television Programming on Preschoolers' Emergent Literacy: A Review of the Literature." Canadian Journal for New Scholars in Education, vol. 5, no. 2, Jan. 2014, pp. 21–30,

https://www.researchgate.net/publication/279924035_the_influence_of_educational_television_programming_on_preschoolers.
Shapiro, Lawrence, and Steven A. Stolz. “Embodied Cognition and Its Significance for Education.” Theory and Research in Education, vol. 17, no. 1, Dec. 2018, pp. 19–39, https://doi.org/10.1177/1477878518822149.
Villarreal, Yvonne. “Dora the Explorer Is Growing up and Getting a Spinoff Series.” Los Angeles Times, 18 Aug. 2014, https://www.latimes.com/entertainment/tv/la-et-st-aging-dora-20140818-story.html.

Attention Matters: The Effects of a Digital Literacy Intervention on Middle School Students' Understanding of Social Media's Business Model and Mental Health Effects

By Griffin Feinbloom

Abstract

This paper presents the results of a three-lesson digital literacy intervention—titled *Attention Matters*—delivered to 27 middle school students at a Southern California public school. The intervention was designed to teach students how "free" social media platforms generate revenue through attention and data, how engagement-driven design features affect adolescent mental health, and how students can think critically about their roles as consumers rather than passive users. A post-intervention survey instrument combining five multiple-choice questions and eight Likert-scale items assessed conceptual knowledge, attitudinal awareness, and self-reported behavioral intentions. Students demonstrated strong conceptual comprehension, with a mean quiz score of 4.52 out of 5 (90.4%) and mean Likert-scale ratings of 4.30 out of 5 for understanding of social media's business model and 4.41 out of 5 for belief that social media affects mental health. Behavioral intentions to change screen habits were notably lower (mean 3.63), suggesting a gap between knowledge acquisition and behavioral change. Open-ended responses revealed qualitative depth: students independently identified algorithmic targeting, infinite scroll, and social comparison as mechanisms of harm. These findings contribute to a growing body of research supporting the integration of structured digital literacy curricula into middle school education, while acknowledging the limitations of a single-group post-test-only design.

Keywords: digital literacy, attention economy, social media, middle school, mental health, intervention, adolescents, persuasive design

Introduction

Teenagers today spend an average of nearly five hours per day on social media platforms, yet most receive little to no formal education about how those platforms actually work (Rideout et al.). Apps like TikTok, Instagram, and Snapchat are not simply entertainment tools—they are sophisticated business systems engineered to capture and monetize user attention. While the consequences of excessive social media use, including increased rates of anxiety, depression, and disrupted sleep among adolescents, have been widely documented, the business logic driving these outcomes remains largely invisible to young users (Twenge). Middle schoolers, who are among the fastest-growing demographics of social media users, are especially vulnerable precisely because they are encountering these platforms before they have developed the critical frameworks to understand them.

Digital literacy education has emerged as a proposed solution, yet it remains inconsistently implemented across schools, and existing curricula often focus narrowly on online safety rather than the deeper economic and psychological mechanisms at play (Hobbs). This

paper examines the results of a three-lesson digital literacy intervention delivered to 27 middle school students at a Southern California public school. The intervention was designed to teach students how "free" apps generate revenue through attention and data, how engagement-driven design affects teen mental health, and how students can think critically about their roles as consumers rather than passive users. A post-intervention survey assessed students' conceptual understanding, self-reported awareness, and behavioral intentions. The findings suggest that even a brief, structured intervention can produce meaningful levels of comprehension and attitudinal awareness among middle school students, pointing to the value of integrating digital literacy education into standard curricula.

Literature Review

The Attention Economy and Social Media's Business Model

The concept of the attention economy holds that human attention is a scarce and therefore valuable resource, one that digital platforms commodify by selling access to it through advertising (Wu). Tim Wu's foundational analysis traces this model from its origins in nineteenth-century print media to the present era of algorithmically driven social media platforms. The core mechanism is simple: platforms offer free services in exchange for user attention, then sell that attention to advertisers. The more time a user spends on a platform, the more advertisements they see, and the more revenue the platform generates.

Social media companies have engineered their products to maximize this attention harvest. Features such as infinite scroll, autoplay video, personalized algorithmic feeds, push notifications, and streak-based engagement systems are not incidental—they are deliberate design choices intended to extend session duration (Wu). This model creates a structural misalignment between the interests of the platform and the interests of the user: what is profitable for the company (maximum engagement) is not necessarily beneficial for the user (healthy, intentional use).

Social Media and Adolescent Mental Health

The mental health consequences of heavy social media use among adolescents have received substantial attention from researchers and public health authorities. Jean Twenge's longitudinal analysis of generational survey data documents a pronounced increase in adolescent anxiety, depression, and loneliness coinciding with widespread smartphone and social media adoption after 2012. Twenge argues that social media has displaced in-person social interaction, reduced sleep duration, and created constant exposure to social comparison, all of which contribute to declining well-being.

The U.S. Surgeon General's 2023 advisory on social media and youth mental health formalized these concerns at the federal level, noting that social media use is associated with harm to young people's mental health and calling for immediate action from policymakers, technology companies, and parents. The advisory noted that nearly 40% of children ages

8–12—squarely within the middle school demographic—already use social media, despite minimum age requirements of 13 on most major platforms (Office of the Surgeon General).

The mechanisms of harm are multiple. Social comparison theory holds that individuals evaluate their own worth by comparing themselves to others; social media platforms, which systematically surface idealized, filtered, and curated content, create an environment of near-constant upward social comparison. Algorithmic systems that prioritize emotionally engaging content amplify this effect by preferentially surfacing content that provokes strong reactions, including envy, anxiety, and inadequacy. These emotional states, in turn, tend to increase engagement—creating a feedback loop that benefits the platform at the user's psychological expense.

Digital Literacy as Intervention

Digital literacy—defined as the capacity to access, analyze, evaluate, and create media in a variety of forms—has been proposed as a critical educational response to the challenges posed by the modern media environment (Hobbs). Hobbs argues that digital literacy education should go beyond technical skills to encompass critical analysis of the economic and ideological forces that shape digital content and platform design.

Despite broad consensus on its importance, digital literacy education remains inconsistently implemented in American K–12 schools. Where it exists, it tends to focus on cybersafety and online etiquette rather than the structural dynamics of the attention economy. Few curricula teach students to understand social media platforms as profit-driven businesses whose incentives may conflict with user well-being. This represents a significant gap: students who are daily users of these platforms are not equipped with the analytical tools to understand them.

Prior research on media literacy interventions in school settings has generally found positive effects on students' critical awareness of media content and their self-reported media consumption habits, though the evidence base for long-term behavioral change remains limited. The present study contributes to this literature by examining the immediate effects of a three-lesson intervention that specifically targets the business model and psychological design of social media platforms.

Methodology

Participants and Setting

Participants were 27 sixth-grade students enrolled in a guidance class at a Southern California public middle school. All 27 students provided both parental consent and personal assent to participate. The intervention was conducted in December 2025 and administered by the author, a high school student and former attendee of the school, under the title Attention Matters. The single-class setting and convenience sample reflect the exploratory nature of this study.

Intervention Design

The intervention consisted of three lessons delivered during consecutive class sessions, each structured around a core conceptual goal.

Lesson 1: The Business Behind "Free" Apps introduced students to the attention economy and the advertising-based revenue model of social media platforms. Students examined why platforms valued for billions of dollars are offered to users at no monetary cost, explored how personalized algorithms generate advertising revenue, and participated in a group activity analyzing the appeal of social media advertisements. The lesson's learning goals centered on understanding that students are consumers—and products—within these systems, not merely users.

Lesson 2: How Screen Time Affects People examines the psychological mechanisms through which social media platforms retain user attention and the mental health consequences of those mechanisms. Students researched specific engagement features—including notifications, autoplay, and streaks—and analyzed how each feature simultaneously benefits the company financially and harms teen users. The lesson used a California youth mental health report as an entry point for discussion about the relationship between screen time and emotional well-being.

Lesson 3: Taking Back Control—Smart Users, Smart Businesses asked students to apply their cumulative knowledge critically, examining what a healthier social media platform might look like and how business incentives and ethical design could be reconciled. Students discussed examples of platform features that could promote well-being rather than exploit engagement, and considered their own agency as future consumers and potential builders of technology.

Survey Instrument

Following the intervention, students completed a Google Form survey instrument comprising four sections.

Section 1: Informed consent, verified through both parental and student consent questions.

Section 2: Five multiple-choice knowledge questions assessed conceptual understanding of the attention economy, engagement design, and mental health effects. Questions targeted: (1) how social media companies generate revenue, (2) the definition of the attention economy, (3) identification of a hook feature designed to retain users, (4) why apps promote emotional content, and (5) mental health effects linked to heavy social media use.

Section 3: Four Likert-scale items (1–5) assessed self-reported awareness and behavioral intentions: understanding of how social media makes money, confidence in recognizing engagement features, likelihood of changing at least one screen habit, and belief in social media's effects on mental health.

Section 4: Four open-ended qualitative questions asked students to describe a specific engagement feature and its mechanisms, propose a redesign for a healthier app, identify their most surprising learning, and offer advice to peers about healthier social media use. Two additional open-ended items collected data on which emotions drive the longest scrolling sessions and who benefits most from extended online time.

Limitations

This study employs a single-group post-test-only design without a control group or pre-intervention baseline measurement. As such, it is not possible to establish a causal relationship between the intervention and student outcomes. The sample size of 27 students from a single class at a single school limits generalizability. Additionally, self-reported survey data are subject to social desirability bias, particularly given that the intervention was administered by a known figure to the school community. These limitations are addressed further in the Discussion.

Results

Multiple-Choice Quiz Performance

Students demonstrated strong conceptual knowledge following the intervention. The mean quiz score was 4.52 out of 5, corresponding to 90.4% accuracy. Score distribution was as follows: 16 students (59.3%) achieved a perfect score of 5/5; 9 students (33.3%) scored 4/5; and 2 students (7.4%) scored 3/5. No student scored below 3/5.

Question-level analysis revealed variation in item difficulty. The questions asking why apps push emotional content and what mental health effects are linked to heavy social media use were answered correctly by 100% of respondents, suggesting that these concepts were particularly well-internalized. The question asking students to identify an example of an engagement hook—specifically, infinite scroll or autoplay video—was the most challenging: 7 students (25.9%) selected "battery saver mode" as their answer, indicating that while the concept of hooks was understood, some students had difficulty applying it to specific examples.

All students correctly identified that social media platforms primarily generate revenue through selling advertisements, demonstrating mastery of the core business model concept introduced in Lesson 1.

Likert-Scale Results

Students' self-reported attitudinal responses on the four Likert-scale items (1 = lowest, 5 = highest) are summarized below.

Understanding of how social media companies make money: Mean = 4.30 (SD ≈ 0.67). The majority of students reported high confidence in this domain, with the modal response being 4 or 5. This result aligns with the strong multiple-choice performance on revenue-related questions.

Confidence in recognizing engagement features: Mean = 4.07 (SD ≈ 0.73). Students expressed moderately high confidence in identifying design features intended to keep them online, though this was the lowest-rated of the four awareness items.

Likelihood of changing at least one screen habit: Mean = 3.63 (SD ≈ 1.11). This item produced the most variance and the lowest mean across the four scales, with several students rating their likelihood as 1 or 2. This finding suggests a gap between conceptual knowledge and behavioral intention.

Belief that social media can affect mental health: Mean = 4.41 (SD ≈ 0.69). This was the highest-rated item and showed the least variance, indicating that students broadly agreed on the mental health stakes of social media use.

Qualitative Open-Ended Responses

Open-ended responses provided substantive qualitative evidence of student comprehension and critical thinking.

When asked to identify which emotion causes them to scroll the longest, boredom was by far the most common response, cited by 55.6% of students. Sadness (14.8%), happiness (11.1%), and surprise (11.1%) followed. One student noted that boredom and sadness often compound one another, creating extended scrolling sessions.

When asked who benefits more when a user stays online longer, 88.9% of students identified the app company as the primary beneficiary, with only three students (11.1%) selecting themselves. This represents strong alignment with the core thesis of the intervention.

In response to the question asking students to describe a feature that keeps them scrolling and explain its mechanisms, students demonstrated a range of sophistication. Several responses showed particularly strong analytical reasoning. One student wrote: “Targeting what you like to watch [...] makes you hooked and watch for hours. And if it’s someone who you like and they might be wealthy and then you compare your life to theirs.” Another noted: “The company can make money off the ads you make and the content that people put on there. And [the] feature can hurt mental health, for example, pretend you see someone go somewhere that you really want to go to but either you can’t because your parents said no or you can’t afford it—you become sad.” These responses demonstrate an understanding of the connection between algorithmic targeting, social comparison, emotional response, and platform profit.

Proposed platform redesigns reflected both practical thinking and ethical reasoning. Common themes included: mandatory screen time limits, removal of emotionally negative or comparison-inducing content, elimination of infinite scroll, content warnings on sensitive material, and algorithms that promote positive rather than dramatic content. One student proposed “removing infinite scrolling” directly, while another suggested the app should “actually care” when users feel stressed—a response that reveals an understanding of the gap between platform incentives and user welfare.

The most commonly cited surprising learning was that social media companies profit from user attention rather than from users directly. Several students expressed genuine surprise at the scale of this model. One student wrote: “Those companies mainly make money on ads, not you.” Another noted: “That social media companies make money when you scroll.”

Advice to peers about healthier social media use clustered around four themes: setting time limits, taking breaks, avoiding social comparison, and limiting overall use. No student advised peers to avoid social media entirely, suggesting that students view informed and intentional use—rather than abstinence—as the appropriate goal.

Discussion

Interpretation of Findings

The results of this study suggest that a brief, three-lesson digital literacy intervention can produce meaningful conceptual understanding among middle school students regarding the business model and psychological design of social media platforms. A mean quiz score of 90.4%, strong Likert-scale responses for knowledge and belief items, and substantive qualitative answers collectively indicate that students absorbed the core content of the intervention.

The most notable finding is the divergence between knowledge acquisition and behavioral intention. While students demonstrated strong understanding of how social media platforms work and strong belief in social media's mental health effects, their self-reported likelihood of changing screen habits was notably lower (mean 3.63 vs. 4.30 and 4.41 for knowledge and belief items, respectively). This gap is consistent with broader research in health education and behavioral economics: knowing the risks of a behavior does not automatically produce behavioral change. The literature on smoking cessation, dietary behavior, and financial decision-making all document analogous gaps between awareness and action (Twenge).

This finding has direct implications for how digital literacy curricula should be designed. Information-delivery alone—even when effective at producing comprehension—may be insufficient to change behavior. Future iterations of the Attention Matters curriculum should incorporate behavior-change components, such as goal-setting exercises, implementation intentions (concrete plans for when and how students will limit use), and accountability structures. Research in habit formation suggests that pairing knowledge with specific behavioral commitments substantially increases the likelihood of follow-through.

The finding that boredom is the emotion most associated with extended scrolling (cited by 55.6% of students) is theoretically significant. It suggests that social media use often functions as an emotional regulation strategy—a default response to low stimulation—rather than an active, intentional choice. This is consistent with the "variable reward" model of platform design, in which unpredictable content schedules maintain engagement in ways analogous to slot machine mechanics. Students who understand this mechanism are better positioned to recognize when they are being exploited by it.

The qualitative data also revealed an encouraging degree of agency and critical thinking. Students' proposed redesigns were not simply reactive but showed genuine ethical reasoning: they considered the interests of other users (especially younger children), the responsibilities of companies, and the role of regulation. One student's suggestion to require warnings on emotionally intense content mirrors actual policy debates currently occurring at the state and federal legislative levels. This suggests that even brief exposure to critical digital literacy frameworks can prompt students to engage with systemic questions beyond individual behavior.

Limitations and Future Directions

Several limitations of this study warrant explicit acknowledgment. First, the absence of a pre-intervention baseline measurement means it is not possible to determine how much students' knowledge or attitudes changed as a result of the intervention. Some degree of prior understanding—particularly regarding social media's mental health effects—may have existed before the lessons began, given the prominence of these issues in public discourse.

Second, the sample of 27 students from a single class at a single school is too small and homogeneous to support broad generalization. The school serves a specific demographic and geographic community, and results may differ meaningfully in other contexts.

Third, social desirability bias may have inflated self-reported knowledge and belief scores, particularly given that the intervention was delivered by a former student of the school—a figure with whom participants may have felt a social relationship.

Fourth, the survey did not capture actual behavioral data (e.g., screen time logs), relying instead on self-reported intentions. Behavioral intention is an imperfect proxy for behavioral change.

Future research should address these limitations through a pre/post design with a matched control group, a larger and more demographically diverse sample, and follow-up data collection at 30 and 90 days post-intervention to assess whether attitudinal changes translate into sustained behavioral change. It would also be valuable to test whether longer interventions—or curricula embedded across multiple subject areas—produce stronger effects on behavioral intention.

Conclusion

Middle school students live inside the attention economy every day, yet most have never been taught to understand it. The Attention Matters intervention was designed to close that gap: to give a group of sixth-graders the analytical tools to see social media platforms not just as entertainment, but as profit-driven systems whose design choices have real consequences for their well-being.

The results suggest that this goal is achievable in a short instructional timeframe. Students demonstrated strong conceptual understanding of how platforms generate revenue, showed high awareness of social media's mental health effects, and produced qualitative responses that revealed genuine critical thinking. The primary challenge—translating knowledge into behavioral change—remains, and it is one that requires more than information delivery alone.

As social media platforms grow more sophisticated in their use of artificial intelligence to maximize engagement, the urgency of digital literacy education grows correspondingly. The Surgeon General has declared youth social media use a public health concern. Schools are increasingly being asked to address the consequences of excessive social media use on student mental health. The data from this study suggest that structured, conceptually rigorous digital literacy curricula can equip students with the awareness they need to navigate these environments more intentionally—and that this work belongs inside the classroom.

Works Cited

Hobbs, Renee. Digital and Media Literacy: Connecting Culture and Classroom. Corwin Press, 2011.

Office of the Surgeon General. Social Media and Youth Mental Health: The U.S. Surgeon General's Advisory. US Department of Health and Human Services, 2023.

Rideout, Victoria, et al. Common Sense Census: Media Use by Tweens and Teens, 2021. Common Sense Media, 2022.

Twenge, Jean M. iGen: Why Today's Super-Connected Kids Are Growing Up Less Rebellious, More Tolerant, Less Happy—and Completely Unprepared for Adulthood. Atria Books, 2017.

Wu, Tim. The Attention Merchants: The Epic Scramble to Get Inside Our Heads. Alfred A. Knopf, 2016.

Mindfulness in Female Students and Female Student-Athletes:
A Comparative Review By Nia I. Orbé-Austin and Romi Mukherjee, Ph.D.

Abstract

Mindfulness, often described as paying attention to the present moment without judgment, has gained increasing attention in both educational and athletic settings. This review examines how mindfulness practices relate to academic performance, psychological well-being, and athletic outcomes, with a focus on differences between female students and female student-athletes. Drawing from research in educational psychology, sport psychology, and developmental science, the findings suggest that mindfulness is linked to reduced anxiety and burnout, along with improvements in emotional regulation and performance. At the same time, the way mindfulness is applied appears to differ across contexts. Female student-athletes often benefit from approaches that account for physically demanding and high-pressure environments, while female students tend to benefit more from strategies focused on attention and stress management. These differences highlight the need for mindfulness interventions that are adapted to the specific demands individuals face.

Embodied Cognition and Mindfulness in Sport

Embodied cognition offers an important perspective for understanding how mindfulness supports athletic performance. Traditional views of cognition often describe thinking as something that happens primarily in the brain. In contrast with this, embodied cognition emphasizes that thinking, perception, and decision-making are closely connected to the body and its movements (Wilson, 2002). From this perspective, cognitive processes are shaped by physical sensations, posture, movement, and interaction with the surrounding environment. Within the context of sports, where performance relies on the coordination of body and mind, this framework is particularly applicable.

Athletic performance requires athletes to process sensory information quickly while their bodies are physically strained. As they move, athletes must coordinate movement, maintain balance, regulate breathing, and respond to opponents or environmental changes in real time. Athletes often cannot afford to slow down and think too much. Research in sports psychology has shown that excessive self-monitoring or overthinking can impair performance by interfering with automatic motor processes athletes need to rely on (Beilock & Carr, 2001). Embodied cognition helps us explain why optimal performance often occurs when athletes trust their bodily awareness more than their conscious mind.

Mindfulness aligns well with embodied cognition because it encourages present-moment awareness of bodily sensations. When applied to athletic performance, mindfulness means paying attention to physical cues such as breathing rhythm, muscle tension, posture, balance, and fatigue. Rather than labeling these sensations as good or bad, mindfulness emphasizes observing them without judgment (Kabat-Zinn, 1994). Mindful attention to bodily sensing may enable

athletes to respond to what they sense instead of overreacting or ignoring important sensations when a reaction would be appropriate.

The literature on interoception, or awareness of internal bodily states, also helps to explain the relevance of mindfulness for athletic performance. The research has shown that greater interoceptive awareness has been associated with improved emotional regulation, stress tolerance, and self-control (Mehling et al., 2011). Specifically for athletic performance and sports, this awareness could lead to better regulation of arousal levels before and during competition. For instance, noticing shallow breathing or increased muscle tension may allow an athlete to adjust their focus, body posture and/or breathing before these sensations negatively affect performance.

Empirical research on mindfulness-based sport interventions suggests that mindfulness training can improve attentional control and reduce performance-based anxiety. Intervention programs such as Mindful Sport Performance Enhancement (MSPE) focus on awareness of bodily sensations and present moment focus during athletic tasks. Research evaluating MSPE has found that athletes reported improved concentration, reduced distraction from negative thoughts, and increased engagement performance (Kaufman et al., 2009). These findings suggest that mindfulness may help athletes maintain focus by anchoring attention in physical experience instead of outcome-based evaluation.

Embodied mindfulness may be particularly important for female student-athletes during adolescence. Adolescence is a period of rapid physical development, and female athletes experience increased risk of certain injuries as their bodies change like overuse injuries, stress fractures, and tendonitis, (e.g., Bunstine et al., 2024; DiFiori et al., 2014). At the same time, training demands and competitive expectations often increase due to factors such as college recruitment and higher-level competition (e.g., national and international). Mindfulness practices that emphasize bodily awareness may help athletes recognize early signs of physical stress, fatigue, discomfort, or overuse. This awareness can support better decisions about rest, recovery, and training intensity, potentially reducing injury risk especially since many adolescents return back to sports after an injury within a week, which increases the probability of reinjury or worsening the condition (Bunstine, 2024).

Furthermore, mindfulness may also influence how athletes experience physical discomfort. In many sports, athletes are encouraged to “push through the pain,” which can sometimes lead athletes to ignoring important injury-related signals from their bodies. Mindfulness does not encourage avoiding discomfort, but it does promote awareness of physical sensations without judgment. For example, studies indicate that mindfulness-based approaches may improve coping with pain and stress by reducing fear-based reactions and increasing acceptance (Gardner & Moore, 2007; Zeidan & Vago, 2016). Though there is a need for further research in this area, it seems promising that mindfulness could support healthier responses to physical strain and injury.

Another key area where embodied cognition is useful in sports is to help explain the relationship between mindfulness and flow states. Flow is a psychological state characterized by

deep focus, which produces a sense of effortlessness, and optimal performance (Csikszentmihalyi, 1990). Athletes often describe flow as being "in the zone," where actions feel automatic and attention is fully absorbed into the task. From an embodied perspective, flow states occur when attention is tightly paired with bodily movement and environmental feedback. Research has found positive correlations between mindfulness and flow experienced by athletes, suggesting that mindfulness training may increase the likelihood of experiencing flow during performance (Kee & Wang, 2008; Schutte & Malouff, 2023).

It is critical to recognize that the mindfulness practices used in sports differ from those used by students in academic settings. While mindfulness for students often targets stress reduction and concentration in quiet environments, mindfulness in sport must function during movement, physical exertion and loud environments. Athletic mindfulness practices typically involve mindful movement, breath awareness during exercise, and attention to bodily cues during competition (Baltzell & Summers, 2018). These differences highlight the importance of adapting mindfulness interventions to the specific demands of athletic performance.

In addition, mindfulness in sport tends to focus more on staying aware in fast-moving and unpredictable situations, which is different from the structured setting of a classroom. During competition, athletes have to constantly shift their attention between what is happening in their bodies and what is happening around them, such as an opponent's movement or changes in pace. This makes it difficult to rely on the kind of still, sustained focus that is often emphasized in academic mindfulness practices. Instead, sport-based approaches teach athletes how to notice distractions like stress, fatigue, or mistakes without getting stuck on them, so they can quickly return their attention to the task at hand (Gardner & Moore, 2007). Overall, this suggests that mindfulness in sport is less about eliminating distractions and more about learning how to function effectively alongside them, especially in high-pressure environments where constant change is unavoidable (Baltzell & Summers, 2018).

In summary, embodied cognition offers a valuable framework for understanding why mindfulness is effective in athletic contexts, particularly because it emphasizes the continuous interaction between mental processes and physical experience (Wilson, 2002). Rather than separating "mind" from "body," this perspective highlights how attention, perception, and decision-making are shaped by bodily sensations and movement. Mindfulness strengthens this connection by helping athletes become more aware of internal signals such as breathing patterns, muscle tension, and fatigue which are closely tied to interoceptive processes and self-regulation (Mehling et al., 2011; Dunn et al., 2015). This increased awareness allows athletes to make quicker, more adaptive adjustments during performance, especially in high-pressure situations where overthinking can disrupt automatic physical skills. In addition to improving focus and performance, embodied mindfulness may also support injury prevention and recovery by encouraging athletes to recognize early signs of physical strain and respond more appropriately for long term health. For female student-athletes in particular, who must navigate both academic and athletic demands with the possibility of greater incidences of injury, this integrated awareness can help manage stress across contexts while supporting a more balanced and

sustainable approach to performance. Embodied mindfulness is not only a performance tool, but also a way of developing greater self-awareness, long-term resilience, healthy adaptation to sport-related stress and maintenance of proper physical health.

Gendered Performance Pressure and Psychological Load

Gendered performance pressure plays a significant role in shaping how female students and female student-athletes experience stress, evaluation, and expectations. Performance pressure refers to the psychological strain associated with being evaluated on one's abilities or outcomes (Mellalieu et al., 2009). Psychological load refers to the overall cognitive (e.g., focus and decision-making), emotional (e.g., expectations, pressure, anxiety), and social demands (e.g., coaching, the context of the competition) experienced by an athlete, as well as how these demands are perceived and managed in relation to performance and well-being (Mellalieu et al., 2021). For girls and young women, this pressure is often influenced by gendered socialization that emphasizes achievement, self-monitoring, and external validation (Mensinger et al., 2007; Yu et al., 2021). It is worth noting that these expectations can intensify stress responses and increase vulnerability to anxiety, rumination, and burnout in academic and athletic settings (Hill et al., 2018).

From a young age, many girls are encouraged both directly and indirectly to be responsible, well-behaved, and focused on achievement. While these expectations can support success in school, they can also make girls more sensitive to how they are evaluated and more concerned about making mistakes. Over time, this can lead some female students to internalize academic pressure and tie their sense of self-worth closely to their performance. These patterns are associated with higher levels of academic anxiety and perfectionistic tendencies among adolescent girls compared to boys (Rice et al., 2011; Fletcher & Neumeister, 2017). As students move into high school and academic demands become more intense—especially in competitive environments—these pressures often increase, making it more difficult to separate achievement from self-worth.

For female student-athletes, performance pressure is often intensified by the need to manage success across multiple areas at once. In addition to keeping up with academic expectations, they are also constantly evaluated in training, competition, and team selection, often in ways that are both public and frequent. This ongoing visibility can make mistakes feel more significant and harder to move past. Beyond performance itself, female athletes may also face added pressures related to body image (e.g., level of muscularity), social expectations, and how they are expected to express emotions (e.g., ones that are perceived as off limits like anger), all of which can contribute to higher levels of stress and exhaustion (Gustafsson et al., 2017; Krane et al., 2004). Over time, these overlapping demands can build into what is often described as psychological load, which reflects the accumulation of cognitive and emotional strain rather than stress tied to a single event (Mellalieu et al., 2021).

Research in sports psychology suggests that female athletes often report higher levels of perceived stress and emotional exhaustion than male athletes, particularly during periods of

intense training or competition (Anshel et al., 2009; Gustafsson et al., 2017). One possible explanation is that gendered expectations tend to encourage greater emotional awareness, but also higher levels of self-criticism, which can create a feedback loop that makes the stress feel more persistent and harder to manage. For female student-athletes, this is often compounded by the challenge of balancing academic responsibilities with the demands of sports. When these pressures build without effective coping strategies, they can lead to ongoing or chronic stress rather than short-term struggle.

One psychological factor that helps explain gendered performance pressure is perfectionism, or the tendency to set very high standards and judge oneself harshly when those standards are not met. In academic settings, this often appears as a strong focus on grades, fear of making mistakes, and a tendency to tie achievement closely to self-worth. While this can sometimes motivate students, it can also contribute to anxiety and ongoing stress, particularly among high-achieving girls (Rice et al., 2011). In sport, however, perfectionism is often reinforced in ways that are less common in academic environments. Athletes train in systems where improvement is measured constantly—through scores, rankings, times, and selection decisions and where "perfect" execution is often treated as the goal. Feedback from coaches, judges, and competition outcomes can unintentionally reward flawless performance while highlighting mistakes, which may strengthen perfectionistic thinking over time. For female athletes, these pressures can be even more pronounced due to added expectations around consistency, composure, and appearance. In these highly evaluative and visible environments, athletes may be more vulnerable to maladaptive forms of perfectionism, where mistakes are not only internalized but also publicly exposed (Hill et al., 2018; Madigan et al., 2018). As a result, while both female students and female student-athletes experience perfectionistic pressure, sport settings may amplify it by continuously reinforcing the idea that performance must be precise, consistent, and error-free.

Mindfulness-based interventions can help reduce gendered performance pressure by changing how athletes respond to stress and self-evaluation. Instead of trying to eliminate difficult thoughts or emotions, mindfulness encourages athletes to notice them without immediately reacting, which can be especially useful during competition (Kabat-Zinn, 1994; Gardner & Moore, 2007). For example, after making a mistake, an athlete might recognize self-critical thoughts but still stay focused on the next play. This ability to reset attention quickly is important in sport, where performance unfolds in real time. Over time, this shift in awareness may help reduce patterns like overthinking and perfectionism, allowing athletes to stay more consistently engaged even in high-pressure situations (Noetel et al., 2019).

Mindfulness does not mean lowering expectations or caring less about performance. Instead, it changes how athletes and students respond to pressure. Rather than becoming overly focused on outcomes—such as winning, rankings, or grades—mindfulness helps individuals stay focused on the present moment and the task they are actually performing. In sports, this can be especially useful during competition, where thinking too much about results or past mistakes can quickly disrupt performance. For example, an athlete who makes an error can use mindfulness to

acknowledge the mistake without dwelling on it. This shift in attention can reduce stress and emotional exhaustion, which are key components of burnout in young athletes (Gustafsson et al., 2015; Li et al., 2019). Over time, by reducing over-identification with outcomes and encouraging a more balanced perspective, mindfulness may help lower overall psychological load and support more consistent engagement in both academics and sport. This is particularly important for adolescent girls, who may be more vulnerable to burnout when high expectations and self-criticism begin to accumulate without effective coping strategies.

In summary, gendered performance pressure contributes to increased psychological load among female students and female student-athletes. These pressures are shaped by socialization, evaluative environments, and individual cognitive patterns such as perfectionism and rumination. Mindfulness-based interventions offer a useful approach for reducing psychological load by promoting nonjudgmental awareness, emotional regulation, and adaptive coping. Understanding these gendered dynamics is essential for designing mindfulness programs that effectively support female students and athletes across academic and athletic contexts.

Athletic Identity Development in Adolescence

Athletic identity refers to the extent to which individuals define themselves through their role as athletes. During adolescence, identity development is a central psychological task, as young people explore values, roles, and sources of self-worth. For student-athletes, sports participation often becomes a highly salient part of identity formation, shaping daily routines, social relationships, and personal goals (Brewer et al., 1993). While a strong athletic identity can support motivation and commitment, it may also create vulnerabilities when performance or participation is disrupted.

Adolescence is an especially important time to look at athletic identity because this is when people are still figuring out who they are. Unlike adults, teenagers are actively developing their sense of self, including what they are good at and what matters to them. For student-athletes, this process often happens in environments where sports are a major focus of daily life. Feedback from coaches, recognition from peers, and success in competition can all reinforce the idea that being an athlete is a central part of who they are (Brewer et al., 1993). While this can build confidence and a sense of belonging, it can also make other aspects of identity such as academics or social roles, begin to feel less important over time. When athletic identity becomes too dominant, it may lead to a narrowing of self-concept, where individuals begin to see fewer alternative paths or sources of self-worth outside of sport (Miller & Kerr, 2003).

Strong athletic identity can be both protective and risky. On one hand, athletic identity is associated with increased persistence, discipline, and goal-directed behavior. Athletes, who strongly identify with their sport, often demonstrate higher levels of motivation and commitment. On the other hand, when athletic identity becomes primary, individuals may be more vulnerable to psychological distress following injury, performance setbacks, or changes in athletic role (Brewer et al., 1993).

This risk is particularly important during adolescence, when injuries, cuts, or difficult transitions between competitive levels are common. Research has shown that athletes with highly exclusive athletic identities may experience increased anxiety, depressive symptoms, and difficulty coping when their ability to participate in sport is threatened (Lally, 2007). These challenges may be intensified when alternative sources of identity, such as academic or social roles, have not been as developed or ignored.

For female student-athletes, athletic identity development occurs alongside gendered expectations that can make identity formation more complex. Female athletes often have to navigate conflicting messages about achievement, appearance, and emotional expression, especially in environments where athleticism and traditional femininity may not always align. In some contexts, success in sport can challenge traditional gender norms, while in others it may be encouraged, but still shaped by expectations about how female athletes should look or behave. Research has shown that female athletes frequently experience tension between being perceived as "feminine" and being recognized as strong, competitive athletes (Krane et al., 2004). These mixed messages can make it more difficult to develop a stable sense of self, as female student-athletes work to balance their athletic identity with academic roles and belonging (Brewer et al., 1993; Miller & Kerr, 2003).

Mindfulness-based interventions may support healthier athletic identity development by promoting what psychologists refer to as psychological flexibility, or the ability to adapt to challenges while maintaining a stable sense of self. In sport, this is especially important because performance is constantly changing, and athletes are regularly faced with both success and failure. Mindfulness helps athletes notice their thoughts and emotions—such as frustration after a mistake or pressure before competition—without immediately defining themselves by those experiences (Gardner & Moore, 2007; Gardner & Moore, 2017). Instead of thinking "I failed, so I'm not good enough," athletes can learn to see performance as just one part of their overall identity. Research on mindfulness-acceptance approaches in sport suggests that this kind of psychological flexibility is associated with better emotional regulation, reduced anxiety, and more consistent performance under pressure and can be applied to more than one context (Moore, 2009; Gross et al., 2018). For student-athletes, this may be particularly valuable, as it can reduce over-identification with sport outcomes and support a more balanced identity that includes academic, social, and personal roles. Over time, this flexibility may help athletes cope more effectively with setbacks such as injury, poor performance, or changes in competitive level, without experiencing a major loss of self-worth.

Mindfulness is linked to reduced attachment to rigid or evaluative self-concepts and greater self-awareness (Keng et al., 2011; Crescentini & Capurso, 2015). Individuals, who practice mindfulness, are less likely to define themselves entirely based on success or failure. Instead of seeing a poor performance as a reflection of who they are, they are more able to view it as a temporary behavioral experience that can change over time. In sports, this can be especially important, since athletes are constantly evaluated and may be more likely to tie their identity to outcomes like wins, rankings, or statistics. Mindfulness helps create some distance

from these evaluations, allowing athletes to stay engaged without becoming overly self-critical (Birrer et al., 2012). For adolescent athletes, who are still developing their sense of identity, this perspective can be particularly valuable. It may support a more stable and flexible sense of self, where performance is important, but does not completely define how they see themselves.

In athletic contexts, mindfulness may help student-athletes respond more adaptively to setbacks. Injuries, losses, and performance plateaus are common experiences in sport, particularly during adolescence. Athletes with strong, but flexible identities may be better equipped to cope with these challenges without experiencing significant decreases in self-esteem. Mindfulness-based approaches encourage acceptance of difficult emotions while maintaining engagement with valued activities, which may support resilience during periods of transition (Gardner & Moore, 2007).

Mindfulness may play an important role in helping female student-athletes maintain a more balanced sense of identity across sport, academics, and personal life. Because student-athletes often operate under tight schedules and constant evaluation, it can be easy for athletic performance to become the primary way they define themselves. Mindfulness, however, encourages a broader awareness of experience, allowing athletes to stay engaged in sport while also recognizing other aspects of who they are. This shift does not reduce motivation or commitment to performance; rather, it supports a more stable form of engagement that is less dependent on constant validation or success (Gardner & Moore, 2007; Birrer et al., 2012). Over time, this more flexible approach to identity may help female student-athletes pursue excellence while also protecting against burnout in the pursuit of success, particularly in environments where pressure and expectations are consistently high.

In summary, athletic identity is a powerful and often defining part of development for adolescent student-athletes, shaping not only motivation and performance but also how individuals understand themselves. While a strong connection to sport can promote discipline and persistence, it can also create vulnerability when performance declines, injuries occur, or roles change. These challenges are particularly complex for female student-athletes, who often navigate additional social and evaluative pressures alongside their athletic and academic responsibilities. Mindfulness-based approaches offer a meaningful way to support healthier identity development by helping athletes relate to their experiences with greater awareness and flexibility, rather than becoming defined by outcomes alone. By encouraging a more stable and adaptable sense of self, mindfulness may allow female student-athletes to remain committed to their goals while also maintaining psychological well-being across changing circumstances.

Implications for Practice

The research reviewed in this paper suggests that mindfulness interventions can be valuable tools for supporting both performance and well-being among female students and female student-athletes. However, the effectiveness of these interventions depends largely on how they are implemented and whether they are adapted to the specific demands of each

population. As a result, educators, coaches, and mental health professionals play an important role in shaping how mindfulness is introduced and practiced.

In academic settings, mindfulness programs are most effective when they focus on attentional regulation, emotional awareness, and stress management. Female students often face high levels of academic pressure, particularly in competitive environments where performance is closely tied to future opportunities whose availability tends to be impacted by gender bias especially in certain fields (e.g., finance, engineering, sciences). Mindfulness practices such as brief breathing exercises, guided attention practices, or reflective journaling may help students manage performance anxiety and remain engaged with academic tasks. These practices should be framed as skills for learning and self-regulation rather than as responses to distress, which may reduce stigma and increase participation.

In athletic contexts, mindfulness should be integrated directly into training and competition preparation rather than treated as an optional, separate or competition only activity. Female student-athletes often have limited time and may be less likely to engage in mindfulness practices that feel disconnected from performance. Sport-specific mindfulness practices such as mindful warm-ups, breath awareness during recovery, or attention to bodily cues during drills may be more accessible and relevant. Research suggests that mindfulness interventions embedded within athletic routines are more likely to be adopted and sustained (Baltzell & Summers, 2018).

Coaches play a particularly influential role in shaping athletes' attitudes toward mindfulness. When coaches frame mindfulness as a performance-enhancing skill rather than a mental health intervention, athletes may be more receptive (Longshore & Sachs, 2015; Noetel et al., 2019). Coaches, who model mindfulness practices and integrate them into team culture, may also reduce stigma and normalize attention to mental and emotional states. However, coaches should receive appropriate training to ensure that mindfulness is implemented ethically and effectively.

Mental health professionals working with female student-athletes should consider integrative approaches that address cognitive, emotional, and bodily dimensions of experience. Interventions such as the Mindfulness-Acceptance-Commitment (MAC) framework emphasize acceptance of internal experiences while maintaining commitment to performance goals (Gardner & Moore, 2007). These approaches may be particularly useful for athletes navigating anxiety, injury recovery, or identity-related stress.

Collaboration among educators, coaches, and mental health professionals is also essential. Female student-athletes often experience stress that spans across academic and athletic domains, making siloed interventions less effective. Coordinated support systems that acknowledge the full range of demands faced by student-athletes may enhance both performance and well-being. For female students, who are not athletes, similar collaboration between teachers and school counselors may support early intervention and stress prevention.

Finally, practitioners should consider issues of access and equity when implementing mindfulness programs. Not all students or athletes have equal access to mental health resources,

and mindfulness programs should be designed to be inclusive, culturally responsive, and developmentally appropriate. Thoughtful implementation can help ensure that mindfulness supports a broad range of students rather than only those already inclined toward such practices.

Future Directions for Research

Although research on mindfulness in both academic and athletic contexts has grown significantly, several important gaps remain in the literature. Much of the existing research relies on short-term interventions and self-report measures, which can make it difficult to understand how mindfulness influences performance and well-being over time (Li et al., 2019; Bühlmayer et al., 2017). In sport settings, studies often focus on small or specialized samples, limiting how broadly findings can be generalized, particularly to adolescent populations. There is also a lack of research that directly examines female student-athletes, despite evidence that gendered pressures may shape how mindfulness is experienced and applied. Additionally, while mindfulness is frequently shown to reduce anxiety and improve focus, fewer studies explore how these effects translate into real competitive situations or long-term identity development (Noetel et al., 2019). Addressing these gaps through longitudinal research designs, more diverse samples, and sport-specific performance measures will be important for developing mindfulness-based interventions that are both effective and relevant for female students and female student-athletes.

Future research should also directly compare mindfulness outcomes between female students and female student-athletes within shared educational contexts. Many studies examine these populations in separate studies, making it difficult to determine whether differences in outcomes are due to contextual demands or individual characteristics. Comparative studies could clarify whether mindfulness functions differently in academic versus athletic settings and inform more targeted intervention design.

Another important area for future research involves the use of objective performance and physiological measures. While self-report measures provide valuable insight into subjective experience, they may not fully capture changes in performance or stress regulation. Incorporating physiological indicators such as heart rate variability or sport-specific performance metrics could strengthen the empirical foundation of mindfulness research and align it more closely with performance science (Si et al., 2024).

Gender-specific analyses also warrant greater attention. While many studies include female participants, fewer explicitly examine how gendered socialization and expectations shape mindfulness outcomes. Research that explores how mindfulness interacts with gendered performance pressure, identity development, and social context may enhance the relevance of interventions for female students and athletes.

Finally, future research should more closely examine how mindfulness skills transfer across different areas of students' lives, particularly between sport and academic settings. While mindfulness is often taught within a specific context such as during training or competition, the skills it develops, including attention control, emotional regulation, and awareness, are not limited to one environment. For example, an athlete who learns to refocus after a mistake in

competition may be able to apply that same skill when dealing with academic stress, such as during exams or presentations. Some research on student-athletes suggests that psychological skills developed in sport can transfer to academic performance and broader life domains, but this process is not always automatic and may depend on how the skills are taught and reinforced (Jacobs & Wright, 2018; Côté et al., 2019). Similarly, mindfulness practices learned in academic settings may help athletes manage pressure, maintain focus, and regulate emotions during competition. However, more research is needed to understand when and how this transfer occurs, especially for adolescent female student-athletes. Developing a clearer understanding of the transfer effects could support more integrated approaches to mindfulness training, where skills are intentionally connected across multiple domains rather than being treated as separate, ultimately helping students function more effectively both in and out of sport.

Conclusion

This review examined mindfulness as a tool for supporting both performance and well-being among female students and female student-athletes, with particular attention to how these effects vary across contexts. Drawing on research from educational psychology, sport psychology, and developmental science, the findings suggest that mindfulness consistently supports outcomes such as improved attentional control, emotional regulation, and stress management. This also highlights important differences in how these benefits are seen in academic versus athletic environments (Bühlmayer et al., 2017; Noetel et al., 2019). In academic settings, mindfulness tends to operate through cognitive pathways, helping students manage academic-related stress and sustain focus during learning tasks. For female students, mindfulness primarily supports academic functioning by enhancing attentional control, emotional regulation, and stress management. In contrast, in sport contexts, mindfulness is more closely tied to embodied awareness, performance under pressure, and the ability to remain present during physically demanding and highly evaluative situations. These differences show that while mindfulness is broadly beneficial, its mechanisms and applications are shaped by the specific demands of the environment in which it is required and practiced.

This review also emphasizes the importance of considering gendered performance pressure and identity development. Female students and athletes often experience heightened self-monitoring, perfectionism, and evaluative concern, which can increase psychological load and vulnerability to burnout. Mindfulness-based interventions may reduce these risks by fostering nonjudgmental awareness, psychological flexibility, and adaptive coping. Mindfulness may support healthier athletic identity development by reducing over-identification with performance outcomes and encouraging balance across multiple life domains.

Mindfulness is not a one-size-fits-all solution. The effectiveness of mindfulness interventions depends on thoughtful implementation that accounts for developmental stage, context, and individual needs. Academic mindfulness programs should differ meaningfully from sport-based interventions, and both should be integrated into existing structures rather than added as isolated practices.

Future research that incorporates longitudinal designs, objective performance measures, and gender-sensitive analyses will be essential for advancing understanding of mindfulness in adolescent populations. Such research may also inform more integrated approaches that support students across academic and athletic domains.

In conclusion, mindfulness offers a useful way to support female students and female student-athletes as they manage the demands of both performance and development during adolescence. Across academic and athletic settings, mindfulness helps individuals stay focused and respond more effectively to pressure, rather than becoming overwhelmed by it. For female student-athletes in particular, who often experience overlapping expectations and constant evaluation, this can make a meaningful difference in how challenges are handled. Rather than changing what success looks like, mindfulness changes how success and failure are experienced, making it easier to recover from setbacks and stay engaged over time. When used in ways that match the specific demands of different environments, mindfulness has the potential to support both performance and long-term well-being.

Works Cited

Anshel, Mark H., et al. "Racial and Gender Differences on Sources of Acute Stress and Coping Style among Competitive Athletes." The Journal of Social Psychology, vol. 149, no. 2, 2009, pp. 159–178. https://doi.org/10.3200/SOCP.149.2.159-178

Baltzell, Amy, and Joshua Summers. The Power of Mindfulness: Mindfulness Meditation Training in Sport. Routledge, 2018.

Beilock, Sian L., and Thomas H. Carr. "On the Fragility of Skilled Performance: What Governs Choking under Pressure?" Journal of Experimental Psychology: General, vol. 130, no. 4, 2001, pp. 701–725. https://doi.org/10.1037/0096-3445.130.4.701

Birrer, Daniel, et al. "Mindfulness to Enhance Athletic Performance: Theoretical Considerations and Possible Impact Mechanisms." Mindfulness, vol. 3, no. 3, 2012, pp. 235–246. https://doi.org/10.1007/s12671-012-0109-2

Brewer, Britton W., et al. "Athletic Identity: Hercules' Muscles or Achilles Heel?" International Journal of Sport Psychology, vol. 24, no. 2, 1993, pp. 237–54.

Bühlmayer, Laura, et al. "Effects of Mindfulness Practice on Performance-Relevant Parameters and Performance Outcomes in Sports: A Meta-Analytical Review." Sports Medicine, vol. 47, no. 11, 2017, pp. 2309–2321. https://doi.org/10.1007/s40279-017-0752-9

Bunstine, J. L., et al. "Differences in Overuse Injuries in Gender-Comparable Sports: A Nationally Representative Sample of High School Athletes." Journal of Athletic Training, vol. 59, no. 9, 2024, pp. 962–968. https://doi.org//10.4085/1062-6050-0040.23

Côté, Tucker, et al. "MMTS 2.0: A Qualitative Exploration of Division I Tennis Players Completing the Mindfulness Meditation Training for Sport 2.0 Program." The Sport Psychologist, vol. 33, no. 3, 2019, pp. 203–212. https://doi.org/10.1123/tsp.2017-0155

Crescentini, Cristiano, and Viviana Capurso. "Mindfulness Meditation and Explicit and Implicit Indicators of Personality and Self-Concept Changes." Frontiers in Psychology, vol. 6, 2015, p. 44. https://doi.org/10.3389/fpsyg.2015.00044

Csikszentmihalyi, Mihaly. Flow: The Psychology of Optimal Experience. Harper & Row, 1990.

Dehghani, Mohsen, et al. "Effectiveness of the Mindfulness-Acceptance-Commitment-Based Approach on Athletic Performance and Sports Competition Anxiety: A Randomized Clinical Trial." Electronic Physician, vol. 10, no. 5, 2018, pp. 6749–6755. https://doi.org/10.19082/6749

DiFiori, John P., et al. "Overuse Injuries and Burnout in Youth Sports: A Position Statement from the American Medical Society for Sports Medicine." British Journal of Sports Medicine, vol. 48, no. 4, 2014, pp. 287–288. https://doi.org/10.1136/bjsports-2013-093299

Dunn, Barnaby D., et al. "Interoception, Contemplative Practice, and Health." Frontiers in Psychology, vol. 6, 2015, p. 763. https://doi.org/10.3389/fpsyg.2015.00763

Fletcher, Kathryn L., and Kristie L. Speirs Neumeister. Perfectionism in School: When Achievement Is Not So Perfect. Springer, 2017.

Gardner, Frank L., and Zella E. Moore. The Psychology of Enhancing Human Performance: The Mindfulness-Acceptance-Commitment (MAC) Approach. Springer, 2007.

Gardner, Frank L., and Zella E. Moore. "Mindfulness-Based and Acceptance-Based Interventions in Sport and Performance Contexts." Current Opinion in Psychology, vol. 16, 2017, pp. 180–184. https://doi/10.1016/j.copsyc.2017.06.001

Gross, Michael, et al. "An Empirical Examination Comparing the Mindfulness-Acceptance-Commitment Approach and Psychological Skills Training for the Mental Health and Sport Performance of Female Student-Athletes." Journal of Clinical Sport Psychology, 2018. **https://doi.org/10.1080/1612197X.2016.1250802**

Gustafsson, Henrik, et al. "Athlete Burnout: Review and Recommendations." Current Opinion in Psychology, vol. 16, 2017, pp. 109–113. https://doi.org/10.1016/j.copsyc.2017.05.002.

Hill, Andrew P., et al. "Multidimensional Perfectionism in Sport: A Meta-Analytical Review." Sport, Exercise, and Performance Psychology, vol. 16, 2018, pp. 156–160. DOI:10.1037/spy0000125

Jacobs, Jenna M., and Paul M. Wright. "Transfer of Life Skills in Sport-Based Youth Development Programs: A Conceptual Framework Bridging Learning to Application." Quest, vol. 70, no. 1, 2018, pp. 81–99. https://doi.org/10.1080/00336297.2017.1348304

Josefsson, Torbjörn, et al. "Effects of Mindfulness-Acceptance-Commitment (MAC) on Sport-Specific Dispositional Mindfulness, Emotion Regulation, and Self-Rated Athletic Performance in a Multiple-Sport Population: An RCT Study." Mindfulness, vol. 10, no. 8, 2019, pp. 1518–1529. https://doi.org/10.1007/s12671-019-01098-7

Kabat-Zinn, Jon. Wherever You Go, There You Are. Hyperion, 1994.

Kaufman, Keith A., et al. "Mindful Sport Performance Enhancement." Journal of Clinical Sport Psychology, vol. 3, no. 4, 2009, pp. 334–356. https://doi.org/10.1123/jcsp.3.4.334

Kee, Ying Hwa, and C. K. John Wang. "Relationships between Mindfulness, Flow Dispositions and Mental Skills Adoption: A Cluster Analytic Approach." Psychology of Sport and Exercise, vol. 9, no. 4, 2008, pp. 393–411. https://doi.org/10.1016/j.psychsport.2007.07.001.

Keng, Shian-Ling, et al. "Effects of Mindfulness on Psychological Health: A Review of Empirical Studies." Clinical Psychology Review, vol. 31, no. 6, 2011, pp. 1041–1056. https://doi.org/10.1016/j.cpr.2011.04.006

Krane, Vikki, et al. "Living the Paradox: Female Athletes Negotiate Femininity and Muscularity." Sex Roles, vol. 50, 2004, no. 5, pp. 315–329. https://doi.org/10.1023/B:SERS.0000018888.48437.4f

Li, Chunxiao, et al. "Mindfulness and Athlete Burnout: A Systematic Review and Meta-Analysis." International Journal of Environmental Research and Public Health, vol. 16, no. 3, 2019, p. 449. https://doi.org/10.3390/ijerph16030449

Longshore, Kateland, and Michael Sachs. "Mindfulness Training for Coaches: A Mixed-Method Exploratory Study." Journal of Clinical Sport Psychology, vol. 9, no. 2, 2015, pp. 116–137.https://doi.org/10.1123/jcsp.2014-0038

Madigan, Daniel J., et al. "Perfectionism and Performance in Sport, Education, and the Workplace." Oxford Research Encyclopedia of Psychology, 2018. https://doi.org/10.1093/acrefore/9780190236557.013.166

Mehling, Wolf E., et al. "Body Awareness: A Phenomenological Inquiry into the Common Ground of Mind-Body Therapies." Philosophy, Ethics, and Humanities in Medicine, vol. 6, 2011, p. 6. https://doi.org/10.1186/1747-5341-6-6

Mellalieu, Stephen D., et al. "Competition Stress in Sport Performers: Stressors Experienced in the Competition Environment." Journal of Sports Sciences, vol. 27, no. 7, 2009, pp. 729–744. https://doi.org/10.1080/02640410902889834

Mellalieu, Stephen D., et al. "Measuring Psychological Load in Sport." International Journal of Sports Medicine, vol. 42, no. 9, 2021, pp. 782–788. https://doi.org/10.1055/a-1446-9642

Mensinger, Janell L., et al. "Perceived Gender Role Prescriptions in Schools, the Superwoman Ideal, and Disordered Eating among Adolescent Girls." Sex Roles, vol. 57, no. 7-8, 2007, pp. 557–568. https://doi.org/10.1007/s11199-007-9281-6

Miller, Patricia S., and Gretchen A. Kerr. "The Role Experimentation of Intercollegiate Student Athletes." The Sport Psychologist, vol. 17, no. 2, 2003, pp. 196–219. https://doi.org/10.1123/tsp.17.2.196

Moore, Zella E. "Theoretical and Empirical Developments of the Mindfulness-Acceptance-Commitment (MAC) Approach to Performance Enhancement." Journal of Clinical Sport Psychology, vol. 3, no. 4, 2009, pp. 291–302. https://doi.org/10.1123/jcsp.3.4.291

Noetel, Michael, et al. "Mindfulness and Acceptance Approaches to Sporting Performance Enhancement: A Systematic Review." International Review of Sport and Exercise Psychology, vol. 12, no. 1, 2019, pp. 139-175. https://doi.org/10.1080/1750984X.2017.1387803

Rice, Kenneth, et al. "Perfectionism, Procrastination, and Psychological Distress." Journal of Counseling Psychology, vol. 59, vol. 2, 2012, pp. 288–302. https://doi.org/10.1037/a0026643

Schutte, Nicola S., and John M. Malouff. "The Connection between Mindfulness and Flow: A Meta-Analysis." Personality and Individual Differences, vol. 200, 2023, p. 111871. https://doi.org/10.1016/j.paid.2022.111871

Si, Xing Wei, et al. "A Meta-Analysis of the Intervention Effect of Mindfulness Training on Athletes' Performance." Frontiers in Psychology, vol. 15, 2024, article 1375608. https://doi.org/10.3389/fpsyg.2024.1375608

Wilson, Margaret. "Six Views of Embodied Cognition." Psychonomic Bulletin & Review, vol. 9, no. 4, 2002, pp. 625–636. https://doi.org/10.3758/BF03196322

Yu, Jiesi, et al. "Which Boys and Which Girls Are Falling Behind? Linking Adolescents' Gender Role Profiles to Motivation, Engagement, and Achievement." Journal of Youth and Adolescence, vol. 50, 2021, pp. 336–352. https://doi.org/10.1007/s10964-020-01293-z

Zeidan, Fadel, and David R. Vago. "Mindfulness Meditation-Based Pain Relief: A Mechanistic Account." Annals of the New York Academy of Sciences, vol. 1373, no. 1, 2016, pp. 114–127. https://doi.org/10.1111/nyas.13153

How Teacher–Student Relationships Influence High School Grading
By Amariah Covington

Keywords
Relationships, Grading, Mastery, Bias, Engagement

Abstract
This study examines whether positive teacher-student relationships influence how high school teachers grade their students. The project investigates whether rapport, engagement, and behavior affect teachers' interpretations of student work and whether grades reflect academic mastery or familiarity. The findings aim to clarify how relational dynamics shape grading practices in real classroom settings.

Introduction

Grades are often treated as objective indicators of academic mastery, yet classroom evaluation is shaped by far more than content recollection. A large body of research shows that teacher-student relationships influence students' engagement, motivation, and achievement. Longitudinal studies from Wentzel (1998) and Ryan et al. (1994) found that students who feel connected to their teachers show higher motivation and persistence in their studies. While other works, such as studies from Hamre & Pianta (2001) and Ladd et al. (1999), emphasized that early positive relationships can anticipate later academic success for individuals. Finally, meta-analytic findings from Roorda et al. (2011) and Göktas & Kaya (2023) further proved that warm and responsive teacher-student relationships are correlated with improved academic performance across grade levels K-12. Together, these studies serve as the starting point of our research through their suggestion that relational dynamics are deeply intertwined with how students behave and perform in their classrooms.

Although relationships clearly matter for learning, far less is known about how they influence grading. Several studies suggest that teachers may interpret student work differently depending on their perceptions of the student. For example, Gershenson (2016) researched teacher expectations, and his research proved teachers sometimes judge the work of well-liked or highly engaged students more favorably, despite the fact that the academic quality is similar. Other researchers, such as Ready & Wright (2011) and Ready (2013), found that teachers tend to give credit to students who display effort, are excited about learning, or have a good connection with them. This raises the question if grades truly show the academic mastery of a student or if they are also based on what the teacher knows about the student, how much the student participates in class, and how the teacher feels about the student.
If teachers' perceptions influence how they interpret ambiguous or subjective work, then grades may partially reflect the relationships rather than performance.

To combat prejudicial grading, attempts to standardize grading through rubrics and present criteria have been made. However, these attempts have not fully eliminated subjectivity.

Scholars, such as Sadler (2009) and Tierney & Simon (2004), have debated in their publications that even well-designed rubrics contain inherent indeterminacy, which thus leaves room for interpretation on open-ended assignments. This enforces that grading is not purely objective and perhaps is influenced by relational and contextual forces.

The main goal of our study was to examine how positive relationships between teachers and students affect the grades that teachers give in high school classes. This could lead to questions about whether grading is fair, accurate, and what it really means to achieve mastery in school. This was addressed by the research question guiding this work: To what extent do positive teacher-student relationships lead to more favorable grading outcomes? That led to the later hypothesis of teachers who report that rapport, engagement and behavior make it easier to award partial credit, interpret unclear answers positively and offer end-of-term leniency. If supported, this would insinuate that grades may reflect relational dynamics as much as academic mastery. This would raise questions about fairness, accuracy, and the meaning of achievement in school settings for later studies.

Results

This study used a 10-questions survey to find out whether positive teacher-student relationships were influenced in grading decisions made by the teacher. The first five questions used Likert-scale items, and the last five questions were open-ended. In total, 17 teachers completed the survey. Below, each individual question is presented, along with its purpose, how it was measured, and what the results showed.

The first question asked whether high levels of student engagements would make it easier for teachers to give partial credit on subjectively graded assignments. This question was asked for the purpose of observing if "trying hard" could potentially influence grading. Most surveyed teachers agreed with this question, with 58.8% selecting "agree", and 29.4% selected "Strongly agree". What must be noted is no teacher selected "strongly disagree" or "no effect" (see Figure 1). Therefore, this implies that teachers generally do find it easier to justify partial credit when a student is clearly trying (in the teacher's point of view), even if the answer is not fully correct.

The second question asked whether a strong rapport helps teachers understand a student's academic goal when an answer is unclear on an assignment. These questions tested whether relationships between teachers and students could potentially influence how teachers interpret objectively, ambiguous work. A majority of surveyed teachers agreed (43.8%) or strongly agreed (18.8%), however on the other hand, a smaller group selected the options of "Neutral", "Disagree", or "Strongly disagree" (see Figure 2). This goes to prove that rapport can shape how teachers read student work, especially when the answer is not straightforward and is left to interpretation.

The third question looked into whether participation and/or enthusiasm affect participation grades compared to quiet or introverted students with similar academic output. Because the survey included teachers from a wide range of subjects, such as math, science, English, social studies, and electives, the expectation was for this question to vary the most.

Consequently, this question produced mixed responses. 23.5% agreed, 23.5% strongly agreed, 23.5% disagreed, and 11.8% strongly disagreed. The rest of the participants selected "Neutral" or "No Effect" (see Figure 3). This mix of results is logical considering different subjects rely on student participation in a multitude of different ways. For example, English based subjects may grade discussions more heavily on subjective performance. While on the other hand, math-based subjects may focus more on accuracy and problem solving, thus offering more objectivity. Overall, the mixed results show that participation grading is often highly teacher and student dependent, but not a universal practice.

The fourth question asked whether teachers are more likely to offer extra credit or a grace period to turn in later assignments to students who consistently work hard/ stay positive from a teacher's perspective. The majority of teachers surveyed agreed, with 52.9% clicking agree, and 17.6% clicking strongly agree (see Figure 4). This implies that effort and attitude can absolutely influence end-of-term decisions, even when the teachers believe they are acting in a completely objective manner.

The fifth question asked if teachers struggle to separate behavior from grading subjective work, such as essays or projects. The results were 58.8% of surveyed teachers disagreeing, but a substantial group (29.4%) agreed with this question (see Figure 5). So, while many teachers truly do believe they are acting from an objective perspective, others do admit that behavior and attitude can sneak into grading. Thus, reinforcing that other teachers may not be aware of their bias and believe they are being objective, or operate from a biased perspective and accept that. Furthermore, when moving to the open-ended questions, they provided more depth than the Likert-scale ones. When teachers explained the difference between academic mastery and effort, almost all of them stated that mastery is what a student can show on assessments. However, effort would be the day-to-day behavior, attitude, and engagement displayed in class. It must be stated that several teachers pointed out that a student can be engaged in class yet not fully understand the content; or vice versa.

Teachers also shared the strategies they used to remain objective while they grade their assignments. For example, some teachers rely on anonymous grading, detailed rubrics, answer keys, grading without looking at names, as well as automated scoring for multiple choice tests which were more popular for math-based subjects. A few of the surveyed teachers admitted that it is difficult to not have expectations for certain students, especially high performers, however the participants stated that they attempt to combat this by actively checking themselves.

Moreover, when asked whether a positive attitude can influence how teachers perceive mastery, once again, the responses were mixed. A few teachers stated that the attitude of a student is completely unrelated to how they would conduct grading, but on the other hand, other teachers admitted that a respectful or enthusiastic student can form a positive impression on a teacher that may perhaps influence how their work is interpreted. Lastly, some teachers provided personal stories where a student's attitude made them more willing to offer help or second chances on an assignment.

Lastly, teachers discussed systemic pressures on students on how they might impact a student grade on an assignment. While some stated they feel systemic pressures on students have no effect on grading an assignment, others mentioned parental pressures, school culture about retakes of an assignment and later work, and administrative policies that demand leniency. Furthermore, a few teachers said that parents who advocate aggressively for their child more often end up receiving more attention, which can indirectly affect grading opportunities. Ultimately, the results display a want of teachers to remain objective, but through their relationships teachers form with students, and the effort and outside pressures teachers observe in their students, it plays a role in their grades. Thus, these results imply that a positive rapport and engagement in class can influence how teachers interpret student work, especially when answers remain foggy or assignments are subjective.

Discussion

The results of this study show that while teachers attempt to grade based on a student's mastery of a subject, other factors such as relationships, effort, and outside pressures ultimately influence how grading decisions are made. When taken together, five Likert-scale questions and the other five open-ended responses, the results displayed that human judgement is never fully separated from the relationships teachers build with students.

One of the clearest findings came from the first question, which showed that teachers are more willing to award partial credit when students display high engagement in class. This was where most teachers agreed that high student engagement would make it easier to provide partial credit to a student. Meaning, visible effort plays a crucial role in how teachers perceive a student's work, especially on assignments that are not strictly relegated to correct or incorrect answers. Moreover, the second questions provided a similar trend, with most teachers answering that a strong rapport aids them in understanding a student's academic intent when an answer is unclear. When comparing these two results, they display that relationships ultimately shape how teachers read and interpret student work, even despite their attempts to remain neutral while grading.

Through this, the third question produced the most mixed responses. This makes sense because the survey included teachers from a wide range of subjects, including math, science, English, and social studies, therefore, their expectations for participation would naturally differ. Student participation in each of those subjects will look different when compared, so it is not surprising that teachers disagreed on whether enthusiasm correlates with higher participation grade. Keep note it is important to consider this variation when interpreting the results because subject-area norms influence how much a student's behavior or engagement naturally becomes part of grading.

The fourth question provided insight into when teachers are more likely to offer grace or extra credit when a student is actively involved in the class or consistently works hard while maintaining a positive attitude. This does not necessarily mean teachers are biased. It may reflect a belief that effort deserves recognition, but it does not show that end-of-term decisions are

consistently based on a student's mastery of a subject alone. Additionally, the fifth question revealed that for many teachers, separation is difficult between a student's behavior and the quality of their academic work is difficult, while other surveyed teachers believe they can easily separate the two.

The open-ended questions helped explain why these patterns exist. Teachers consistently described academic mastery as what a student can do on assessments, while effort only shows daily behavior and attitude. Many teachers said that their rapport with a student aids them in understanding why a student might be struggling, thus influencing how they respond, such as offering support, flexibility or a second chance. One teacher even emailed me separately to say, "Teachers are human like everyone else and can have favorites, but I think you can still grade fairly." Additionally, some teachers mentioned that having a favorite student can sometimes raise expectations, with one teacher stating they graded their own children "far more strictly than their peers." Thus, this only proves the idea that relationships do not make teachers more lenient, but also they sometimes make teachers more stringent evaluators.

There are several limitations to this study. First and foremost, the sample size was small (17 teachers), and the subject-area distribution was uneven. Because the teachers from different subjects grade differently, this may have influenced the results, especially questions about participation and subjective grading. Secondly, the results relied on a self-report, which means teachers may answer based on how they believe they grade, rather than how they actually grade in their practice. Thirdly, the survey did not measure teachers' actual grading behaviors. The survey only demonstrated the teacher's perception of their own grading. These limitations indicate that while the results do show a trend, they cannot be generalized to all teachers or all schools.

Despite these limitations, the findings remain meaningful. They show that teacher-student relationships, student effort, and external pressures all play a role in grading decisions even while teachers try to remain objective. This matters because so often in brick-and-mortar school systems, grades are often treated as a direct measure of mastery, when in reality they may reflect a combination of mastery, and teacher-student rapport.

Ultimately, this study implies that while teachers value fairness and objectivity, relationships and effort still influence grading in many ways. Understanding these types of dynamics can aid schools to create grading systems that are more transparent and consistent for a student's mastery and growth.

Materials and Methods

This study used an anonymous online survey to measure teacher's perceptions of how teacher-student relationships impact their grading. A ten-question survey was created using Google Forms, which included five Likert-scale items and five open-ended questions. The Likert-scale items used a six-option response format in the specific order: "Strongly disagree", "Disagree", "Neutral", "Agree", "Strongly Agree", and "No effect". This quantified the surveyed teacher's attitudes toward effort, rapport and their own grading practices. Then five open-ended

questions followed to help collect more detailed explanations of how teachers define mastery, how they manage bias, and then how they interpret their students' struggles.

To collect responses, 100 teachers across five public high schools in Seminole County, Florida were emailed the survey link in a standardized email. The teachers represented multiple subject areas which included math, science, English, social studies, and elective courses. The participation of these teachers was voluntary, and no identifying information was collected. In the standardized email sent to each of the 100 teachers and in the description above the questions of the survey, the teachers were informed that the survey was anonymous and that their responses would be used for research on grading perceptions. A few teachers responded to the standardized email which provided additional evidence regarding their grading practices; these comments were included in the discussion and results.

The survey remained open for one week, during which 17 teachers completed it. Google forms automatically recorded and organized the responses. The quantitative results from the Likert-scale questions were transformed into percentages and displayed using the built-in pie chart generator in Google Forms. The qualitative responses were analyzed in a standardized approach in which all of the open-ended answers were read individually, recurring points were identified, and the responses were grouped into broader themes related to mastery, rapport, or external pressure.

Because this study relied heavily on self-reported perceptions rather than experimental manipulation, no control group was used. Anonymity served as the main method for reducing potential social desirability bias that could occur. All the procedures invited minimal risk and used only anonymous adult teacher responses; therefore, no additional ethical review was required because the study did not collect identifying information, involve minors, or include any intervention.

Conclusion

Overall, this study is a testament that grading is not a robotic, mechanical process, but a human process. Even when teachers work hard to remain objective, their decisions are shaped by the relationships they build, effort they observe in students, and the expectation placed on teachers by their school environment, including administrative policies and state-level requirements. What stood out the most in this study, is not that the teachers were biased, but instead that they are conscious of the tension between fairness and empathy, of which, many teachers actively create systems to protect their grading from their own personal influence and biases.

Similarly, the results crystalize that effort, rapport, and context still matter. These factors do not replace a student's mastery, but they do shape how teachers interpret a student's work. It is that nuance that is vital to understanding the importance of this whole study. It means that grades are not a restricted reflection of academic mastery but also is a reflection of the environment in which students learn.

Moreover, these findings matter beyond the high school classroom. These grades become a part of a student's transcript, which is often the first thing colleges look at. If effort, rapport, or simply teacher expectations subtly, but surely influence students' grades, then these small factors build over time and can shape a student's academic record. Thus, ultimately, their opportunities after graduation. This is not insinuating teachers are unfair but rather indicates that the system itself is more complex and personal than it appears on paper.

Future research in this topic could explore how grading practices differ across counties, or how anonymous grading might reduce bias. Understanding the dynamics regarding teacher-student relationships could help schools design grading systems that are both academically accurate while being equitable. That would aid in ensuring that transcripts, and the college decisions tied to them, reflect student learning as clearly and fairly as possible. Additionally, future research could build on this study in many helpful ways such as a larger sample size, which would help determine whether these patterns hold more broadly. Observational studies or analysis of anonymized student assignments could potentially compare teachers' stated beliefs with their actual grading practices. Furthermore, it would be useful to explore how grading varies by subject area, since participation and subjectivity look different in math, English, and science classes. Finally, future studies could examine whether training in a bias-aware grading practice changes how a teacher would evaluate subjective work.

Acknowledgements

Thank you to the teachers who took the time to complete the survey. Thank you also to my mentor, Elizabeth Trepainer, for helping with the review and feedback of this study.

Works Cited

Cornelius-White, Jeffrey. "Learner-Centered Teacher–Student Relationships Are Effective: A Meta-Analysis." Review of Educational Research, vol. 77, no. 1, 2007, pp. 113–143.

Di Lisio, A., et al. "Teacher–Student Relationships and Academic Engagement: A Comprehensive Review." Social Psychology of Education, 2025, link.springer.com/article/10.1007/s11218-025-10107-8.

Gershenson, Seth. "Linking Teacher Quality, Student Attendance, and Student Achievement." Economics of Education Review, vol. 52, 2016, pp. 209–225, sciencedirect.com/science/article/pii/S0272775715300959.

Göktas, S., and F. Kaya. "The Influence of an Affective Teacher–Student Relationships on Engagement and Achievement." Review of Educational Research, 2023, journals.sagepub.com/doi/abs/10.3102/0034654311421793.

Hamre, Bridget, and Robert Pianta. "Early Teacher–Child Relationships and the Trajectory of Children's School Outcomes." Child Development, vol. 72, no. 2, 2001, pp. 625–638, onlinelibrary.wiley.com/doi/abs/10.1111/1467-8624.00301.

Hughes, Jan. "Longitudinal Effects of Teacher–Student Relationships on Academic Achievement." Child Development, vol. 82, no. 3, 2011, pp. 963–977, academic.oup.com/chidev/article-abstract/87/2/593/8258339.

Jussim, Lee, and Kent Harber. "Teacher Expectations and Self-Fulfilling Prophecies." Personality and Social Psychology Review, vol. 9, no. 2, 2005, pp. 131–155.

Ladd, Gary, Sarah Birch, and Eric Buhs. "Children's Social and Scholastic Lives in Early School Years." Child Development, vol. 70, no. 6, 1999, pp. 1373–1400.

Ready, Douglas. "Associations Between Teacher–Student Relationships and Grading Practices." Educational Researcher, vol. 42, no. 4, 2013, pp. 223–234, eric.ed.gov/?id=EJ1168171.

Ready, Douglas, and David Wright. "Accuracy and Inaccuracy in Teachers' Perceptions of Student Ability." American Educational Research Journal, vol. 48, no. 2, 2011, pp. 335–360.

Roorda, Debora, et al. "The Influence of an Affective Teacher–Student Relationships on Students' School Engagement and Achievement: A Meta-Analytic Approach." Review of Educational Research, vol. 81, no. 4, 2011, pp. 493–529.

Rojstaczer, Stuart, and Christopher Healy. "Where A Is Ordinary: The Evolution of American College Grading." Teachers College Record, vol. 114, no. 7, 2012.

Ryan, Allison, et al. "Sense of Relatedness as a Factor in Academic Engagement." Journal of Educational Psychology, vol. 86, no. 2, 1994, pp. 202–214.

Sadler, D. Royce. "Indeterminacy in the Use of Preset Criteria for Assessment." Assessment & Evaluation in Higher Education, vol. 34, no. 2, 2009, pp. 159–179.

Schneider, Jack. "Teacher Evaluation and Grading Practices." International Perspectives on Education, Emerald Publishing, 2013.

Tierney, Robin, and Marielle Simon. “What’s Still Wrong with Rubrics.” Practical Assessment, Research, and Evaluation, vol. 9, no. 2, 2004, openpublishing.library.umass.edu/pare/article/id/1531/.

Wentzel, Kathryn. “Social Relationships and Motivation in Middle School.” Journal of Educational Psychology, vol. 90, no. 2, 1998, pp. 202–209.

Figures and Figure Captions

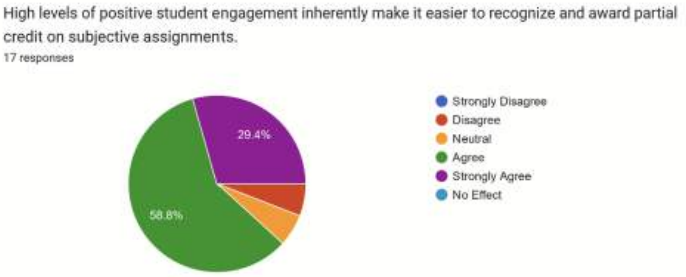


Figure 1. Teachers agree that high student engagement makes it easier to give credit. (N=17). Most of them said that when students are really engaged it is easier to give them credit when they do not do everything right. Survey conducted through Google Forms; chart generated using Google Form’s tools.

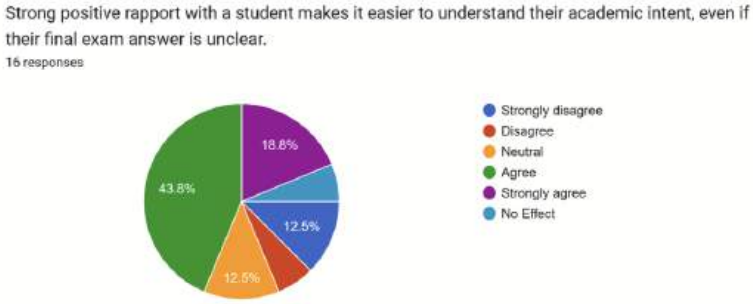


Figure 2. Teachers think that having a relationship with students helps them understand what the students are trying to say even if their answers are not clear. (N=16). The numbers show what they said about whether having a relationship with students helps them understand the students’ work. Survey conducted through Google Forms; chart generated using Google Form’s tools.

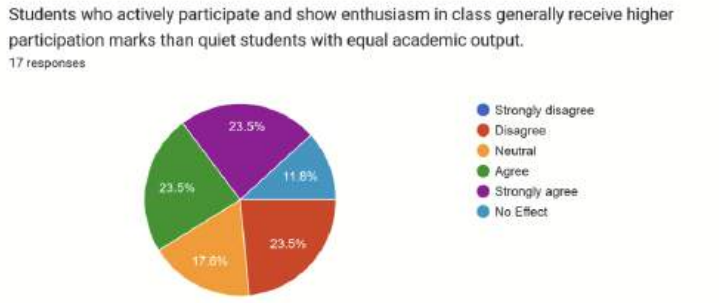


Figure 3. Teachers have ideas about whether students who participate a lot in class get better grades than students who are quiet but do just as good of work. (N=17). The numbers show what they said about whether students who participate a lot get grades. Survey conducted through Google Forms; chart generated using Google Form's tools.

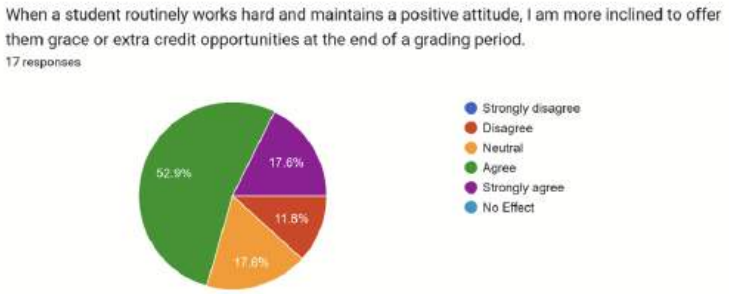


Figure 4. Teachers think about whether to give credit to students who work hard and have a good attitude. (N=17). The numbers show what they say about whether they give credit to students who work hard and have a good attitude. Survey conducted through Google Forms; chart generated using Google Form's tools.

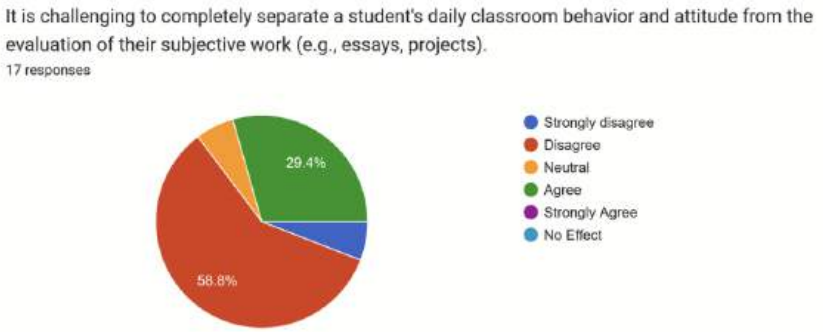


Figure 5. Teachers find it hard to separate how a student behaves from how they grade the students work (N=17). The numbers show what they said about whether they can separate a student's behavior from their grades. Survey conducted through Google Forms; chart generated using Google Form's tools.

Tables and Table Captions

Table 1. Percent Distribution of Teacher Responses for Each Likert-Scale Question (N=16–17)

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	No Effect
Do engaged students get credit?	**0%**	**0%**	**5.9%**	**58.8%**	**29.4%**	**0%**
Does a good relationship help understand student intent?	**12.5%**	**6.3%**	**12.5%**	**43.8%**	**18.8%**	**6.3%**

Do participating students get grades?	**11.8%**	**23.5%**	**17.6%**	**23.5%**	**23.5%**	**11.8%**
Do hardworking students get extra credit?	**0%**	**11.8%**	**17.6%**	**52.9%**	**17.6%**	**0%**
Is it hard to separate behavior from grades?	**5.9%**	**58.8%**	**5.9%**	**29.4%**	**0%**	**0%**

Table 2. Themes Identified in Open-Ended Teacher Responses

Theme	Description	Example Quote (Paraphrased)
What students know vs what they do	**Teachers separate what students know from how they behave.**	**“Knowing what they know is the goal. How they behave is part of the process.”**
Knowing students helps	**Teachers get to know students to understand their struggles.**	**“When I know a student well I can tell why they are struggling.”**
Grading	**Teachers use special tools to grade fairly.**	**“I use a code, so I do not see the students name when I grade.”**
Good attitude helps	**A student’s attitude can affect how the teacher feels about them.**	**“When a student is respectful I want to help them”**
Outside pressures	**Things outside the classroom can affect teachers' grades.**	**“Some parents can be very pushy. That can affect how I grade.”**

Table 3. What Subjects Surveyed Teachers Teach

Subject Area	Number of Teachers
Math	**4**
Science	**3**
English	**6**
Social Studies	**3**
Electives	**1**
Total	**17**

Bottlenecks and Committee Filtering: A Markov Chain Analysis of Bill Progression in the Colorado General Assembly By Michael Zhang

Abstract

Staged processes such as credit rating migration, patent examination, and legislative pipelines produce aggregate throughput statistics that do not by themselves reveal the mechanisms at each stage that generate them. We model such processes as finite absorbing Markov chains and use the fundamental matrix to derive exact sensitivity coefficients that connect a local change to the overall probability of success. A proposition expresses each stage's leverage as a product of an expected visit count and a continuation probability; a corollary reduces the question of which of two stages carries greater leverage to a closed-form comparison of two estimable probabilities, requiring no matrix inversion. A theorem extends the criterion to a broader class of layered chains with self-loops and branching, and a worked example shows that a downstream self-loop can reverse the ordering the simple two-probability test would predict. We demonstrate the framework on 1,156 bill trajectories from three Colorado General Assembly sessions (2022–2024). Decompositions by stage, chamber, sponsoring party, and introduction cohort identify the largest observed failure stage at the first-committee vote (10.6–18.3% of introduced bills die there) rather than after committee clearance (4.2–9.7%), with a first-committee partisan gap of 29–47 percentage points (Fisher's exact $p < 10^{-11}$ in every session; Cohen's h 0.81–1.17). In 2023, 16 of 19 floor failures were Senate-side postponements or gubernatorial vetoes, with the vetoed bills having cleared both chambers. As a methodological caution, a preliminary coding rule based on fiscal impact notation misclassifies 10.6–18.3% of bills per session in a way that inflates the post-committee failure share; we document the pitfall and supply a corrected rule.

Keywords: absorbing Markov chain; fundamental matrix; sensitivity analysis; transition probability; legislative pipeline; committee filtering; legislative process; state legislature; stochastic modeling; bicameralism; political institutions; reproducibility

1 Introduction

Many important processes are *staged*: units start in an initial state, pass through a sequence of intermediate stages, and eventually end in one of a few terminal outcomes, either success or failure. Credit ratings migrate between grades before default or withdrawal; drug candidates advance through clinical trial phases; patents move through examination; and bills move through a legislature. In each case, an aggregate throughput number, such as an overall default rate, an approval rate, or a passage rate, summarizes the overall behavior of the process but does not fully characterize it. Two processes with identical aggregate rates can have very different stage-by-stage mechanisms, and separating them requires a framework that tracks how risk at one stage propagates to the final outcome.

This paper develops an absorbing Markov chain framework for staged institutional processes, derives exact local-to-global sensitivity coefficients from the fundamental matrix, and demonstrates the framework on legislative bill progression data from the Colorado General Assembly. The central object is the fundamental matrix $N = (I-Q)^{-1}$, whose entry in row 0, column j gives the expected number of times a unit visits stage j before it is absorbed. This visit count governs how strongly a small change in one local transition probability moves the overall success probability. The Markov representation adds value beyond simply multiplying sequential conditional survival rates: the fundamental matrix yields expected visit counts, expected time to absorption, and exact perturbation derivatives in closed form, and it continues to work when stages can be revisited (self-loops) or reached along several paths (branching), where a product of survival rates is no longer well defined. Using bill trajectories from three recent sessions (2022–2024), we estimate the chain and decompose failure rates by stage, chamber, sponsoring party, and introduction timing.

Earlier work on legislative pipelines predicts individual bill outcomes with logistic regression (Yano et al.; GovTrack.us) or machine learning on bill text (Nay), and measures legislator effectiveness through weighted stage scoring (Volden and Wiseman; Bucchianeri et al.). These approaches treat the stages as independent or as backdrop. The absorbing chain framework instead treats the whole pipeline as the object of analysis. The classic mathematical treatment of finite absorbing chains is Kemeny and Snell; Frydman and Schuermann develop a related Markov mixture framework for credit rating dynamics in which transition matrices are read as structural rather than merely descriptive objects.

Contributions. The paper makes three contributions. First, Proposition 1 characterizes how a row-stochastic transition perturbation changes the probability of eventual success, and Corollary 1 reduces the comparison of two stages on a single path to $B_{3,0}$ versus $Q_{2,3}$. Theorem 1 extends the comparison to layered chains with self-loops and branching, where leverage depends on path-summed expected visit counts. Second, the framework decomposes throughput by stage, chamber, party, and cohort. Third, the Colorado application analyzes 1,156 bills and documents a coding rule that otherwise shifts first-committee failures into the post-committee stage.

Headline findings. Empirically, the first-committee vote is the largest observed failure stage in all three sessions and exhibits a large partisan gap. Aggregate floor-failure rates also conceal changes in the chamber and procedural sources of failure, while the floor and out-of-committee sensitivity magnitudes remain statistically indistinguishable.

2 Materials and Methods

2.1 *Mathematical framework*

Definition 1 (Legislative state space). *Let $S = T \cup A$, where the transient states are T = {Introduced, In Committee, Out of Committee, On Floor} = $\{s_0, s_1, s_2, s_3\}$ and the absorbing states are A = {Passed, Failed} = $\{a_0, a_1\}$.*

Each bill is a trajectory through S that terminates on reaching A. Transitions correspond to concrete procedural events: committee referral, committee disposition (postponement or report), floor scheduling, and final disposition. Every bill enters Introduced and advances through the transient states in order, visiting each at most once: the chain allows only forward nearest-neighbor moves $s_i \to s_{i+1}$ among transient states, together with direct moves to Failed from s_1, s_2, s_3 and to Passed from s_3. Equivalently, $Q_{i,j} = 0$ whenever $j \le i$ or $j > i+1$. Fig 1 depicts the chain.

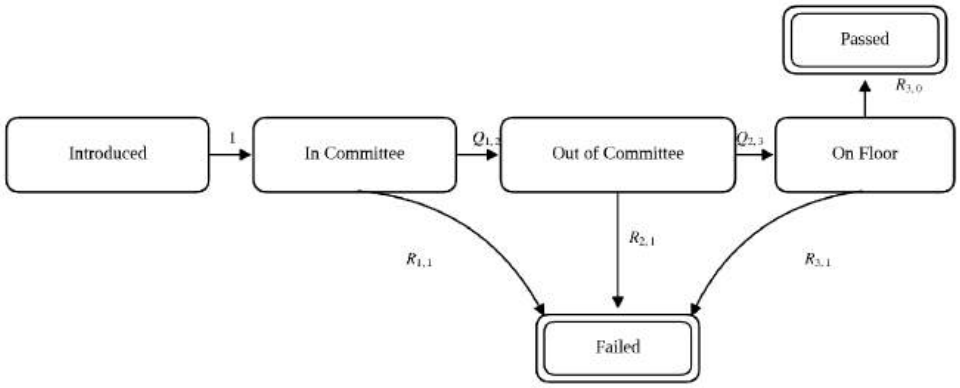


Fig 1: The absorbing Markov chain with four transient states and two absorbing states. Rounded states are transient, and doubled states are absorbing. Introduced transitions to In Committee with probability 1. Each subsequent transient state can advance or transition to Failed; only On Floor can transition to Passed.

Three modeling assumptions are used. *Markov property*: the probability that a bill advances to state j depends only on its current state i, not on the path that brought it there. *Time homogeneity*: transition probabilities are constant within a session (partially assessed in Section 3 with a homogeneity test across introduction cohorts). *Independence*: bill trajectories are independent realizations of the chain; this is plausibly violated by shared institutional constraints (limited committee hearings, end of session deadlines) that may induce positive within-session dependence among bills within a session. The estimators remain the observed transition proportions, but dependence can affect their sampling properties and the validity of conventional bootstrap intervals.

Ordering states so that transient states precede absorbing states, the one-step transition matrix takes the canonical block form with Q collecting transitions among transient states, R collecting absorption, and I the identity. Because every bill is eventually absorbed with probability one, the spectral radius of Q is below one, guaranteeing convergence of the series in (eq1).

Definition 2 (Fundamental matrix). *The fundamental matrix of the chain is given by (eq1). Its entry $N_{i,j}$ is the expected number of times the chain visits transient state j before absorption, starting from transient state i.*

$N = (I - Q)^{-1} = \Sigma_{k \ge 0} Q^k$(eq1)

Two quantities follow at once: the absorption probability matrix $B = NR$ (whose entry $B_{i,0}$ is the probability of eventual passage from state i) and the vector of expected steps to absorption $t = N1$. States are indexed within their class, so s_0–s_3 are Introduced, In Committee, Out of Committee, and On Floor, and $B_{i,0}$ is the passage probability from state i.

2.2 *Sensitivity analysis*

Proposition 1 (Sensitivity of absorption probabilities). *Let the chain have transient submatrix Q, fundamental matrix* $N = (I-Q)^{-1}$*, and absorption matrix B = NR, and let* $B_{0,0}$ *be the passage probability from the initial state. Increase* $p_{j,\mathrm{Fail}}$ *by an* $\varepsilon > 0$ *small enough that the compensating probability remains nonnegative, while preserving the row sum. (i) If the compensating decrease falls on* $p_{j,\mathrm{Pass}}$*, then (eq2) holds. (ii) If it falls on a transient transition* $p_{j,\ell}$*, then (eq3) holds.*

$\partial B_{0,0} / \partial p_{j,\mathrm{Fail}} = -N_{0,j}$(eq2)
$\partial B_{0,0} / \partial p_{j,\mathrm{Fail}} = -N_{0,j} \cdot B_{\ell,0}$(eq3)

Proof. Write $B_{0,0} = \Sigma_k\, N_{0,k} R_{k,0}$ with $R_{k,0} = p_{k,\mathrm{Pass}}$. In case (i) the perturbation changes only $R_{j,0}$ (by $-\varepsilon$) and $R_{j,1}$ (by $+\varepsilon$) while Q is fixed, giving (eq2). In case (ii), $dQ_{j,\ell} = -\varepsilon$ and $dR_{j,1} = +\varepsilon$, while the passage column satisfies $dR_{\cdot,0} = 0$. Therefore $dB_{\cdot,0} = N(dQ)B_{\cdot,0} + N dR_{\cdot,0} = N(dQ)B_{\cdot,0}$. Since dQ has the single nonzero entry $-\varepsilon$ at (j,ℓ), the (0,0) entry is $-N_{0,j}B_{\ell,0}\varepsilon$, giving (eq3). ∎
In both cases the magnitude is set by $N_{0,j}$: stages visited more often exert more structural influence on the overall success probability. The two cases unify if we let $c(j)$ be the *compensating destination* and set the continuation value $V(c) = B_{c,0}$ when c is transient and $V = 1$ when c = Passed, giving (eq4).
$\partial B_{0,0} / \partial p_{j,\mathrm{Fail}} = -N_{0,j} \cdot V(c(j))$(eq4)

Remark 1 (The two legislative perturbations). *The perturbations of interest are a floor failure (case i:* $R_{3,1}$ *rises at the expense of* $R_{3,0}$*), giving* $\partial B_{0,0}/\partial R_{3,1} = -N_{0,3}$*, and an out of committee bottleneck (case ii:* $R_{2,1}$ *rises at the expense of* $Q_{2,3}$*), giving* $\partial B_{0,0}/\partial R_{2,1} = -N_{0,2}B_{3,0}$.
Corollary 1 (Stage dominance). *With the floor and out of committee (OOC) sensitivities of Remark 1, the ratio of (eq5) holds, so* $|OOC\ sens| > |Floor\ sens|$ *exactly when* $B_{3,0} > Q_{2,3}$.
$|OOC\ sens| / |Floor\ sens| = N_{0,2} \cdot B_{3,0} / N_{0,3} = B_{3,0} / Q_{2,3}$(eq5)

Proof. The first equality substitutes Remark 1. The monotone, nonrevisiting structure of Section 2.1 makes the visit counts collapse to reachability products, $N_{0,j} = \Pi_{k<j}\, Q_{k,k+1}$; in particular $N_{0,3} = N_{0,2}Q_{2,3}$, so $N_{0,2}/N_{0,3} = 1/Q_{2,3}$, and all quantities are nonnegative. ∎
Corollary 1 reduces "which stage is the binding bottleneck?" to a comparison of two directly estimable probabilities, with no matrix inversion: the out of committee stage dominates precisely when the post-committee passage probability exceeds the continuation probability out of committee. This shortcut holds only under the directed acyclic path structure of Section 2.1; with

loops or revisitation, $N_{0,j}$ no longer collapses to a reachability product. In the Colorado data $Q_{2,3}$ ranges 0.89–0.95 and $B_{3,0}$ ranges 0.92–0.96, so the ratio is near one and the two sensitivities are close.

2.3 *Layered chain extension*

The dominance criterion extends to a strictly larger class of chains than the single path used in the Colorado application. Call a chain *layered* if its transient states can be partitioned into ordered layers with a single start state, such that every transient transition either moves forward to a later layer or is a self-loop that stays in place (no backward edges and no jumps between distinct states of the same layer). This permits self-loops (a bill stalls in committee awaiting a vote) and branching (a bill is referred to one of several second committees), but rules out revisitation across distinct states.

Theorem 1 (Generalized stage dominance). *For a layered chain, fix an upstream state i and a downstream state j and perturb $p_{i,Fail}$ and $p_{j,Fail}$ as in Proposition 1, with continuation values $V(c(i))$, $V(c(j))$. Then the downstream-to-upstream sensitivity-magnitude ratio is $N_{0,j}V(c(j)) / (N_{0,i}V(c(i)))$, where the visit count admits the closed form in (eq6), the sum running over directed paths that strictly increase layer index. When every layer holds one state and there are no self-loops, this reduces to $N_{0,m} = \Pi_{k<m} Q_{k,k+1}$ and recovers Corollary 1.*

$$N_{0,m} = [1/(1-Q_{m,m})] \cdot \Sigma_{\text{paths } s_0 \to m} \Pi_{(u \to v)} Q_{u,v}/(1-Q_{u,u}) \quad \text{(eq6)}$$

Proof. The ratio is immediate from the unified form of (eq4); the content is the closed-form for $N_{0,m}$. Every path from s_0 to m traverses a strictly increasing sequence of layers, possibly with self-loops at intermediate states. Conditioning on the distinct states visited and summing the geometric self-loop counts at each gives (eq6), the factor $1/(1-Q_{u,u})$ accounting for the expected number of self-loop steps at u. For two adjacent stages on a single path, applying (eq6) to both and cancelling the shared upstream product yields (eq7): the raw transition inflated by the expected dwell time at the *downstream* state j. The upstream self-loop enters numerator and denominator identically and cancels; only the downstream self-loop survives. ∎

$$N_{0,j} / N_{0,i} = Q_{i,j} / (1-Q_{j,j}) =: \tau_{i,j} \quad \text{(eq7)}$$

Remark 2 (Operational form). *For adjacent stages i (upstream) and j (downstream) on a single forward path, taking the upstream perturbation as case (ii) and the downstream as case (i) gives $|sens_i| > |sens_j|$ if and only if $B_{j,0} > \tau_{i,j}$, with $\tau_{i,j}$ as in (eq7). The Colorado chain has $Q_{j,j} = 0$ everywhere, so $\tau_{2,3} = Q_{2,3}$ and Corollary 1 is recovered exactly. A self-loop at the downstream state raises the threshold and shifts the comparison toward downstream dominance; a self-loop at the upstream state leaves it unchanged. Under branching, $N_{0,j}$ becomes a sum over paths and the comparison must aggregate across branches.*

2.4 *A worked example: when the single path test fails*

To show the generalization is substantive rather than ornamental, we exhibit a small chain in which the two-probability shortcut of Corollary 1 gives the *wrong* ordering, and the path-aware form of Theorem 1 corrects it.

A downstream self-loop reverses the ordering. Take the four-transient-state chain $s_0 \to s_1 \to s_2 \to s_3$, but let the floor state carry a self-loop $Q_{3,3} = 0.20$ (a reported bill repeatedly laid over on the floor calendar before a vote). Fix the other transitions at $Q_{1,2} = 0.85$, $R_{1,\text{Fail}} = 0.15$, $Q_{2,3} = 0.70$, $R_{2,\text{Fail}} = 0.30$, $R_{3,\text{Pass}} = 0.64$, $R_{3,\text{Fail}} = 0.16$. Solving the fundamental matrix gives visit counts $N_{0,\cdot} = (1, 1, 0.85, 0.744)$ and $B_{3,0} = 0.64/0.80 = 0.80$.

Applied *as if* the chain were acyclic, Corollary 1 compares $B_{3,0} = 0.80$ against $Q_{2,3} = 0.70$ and concludes that the out of committee stage dominates. That is wrong here. The self-loop inflates the expected floor visits by the dwell factor $1/(1-Q_{3,3}) = 1.25$, so $N_{0,3} = 0.85 \cdot 0.70/0.80 = 0.744$, not the acyclic 0.595. The correct threshold of Remark 2 is $\tau_{2,3} = 0.70/0.80 = 0.875$, and since $0.80 < 0.875$ the *floor* stage in fact carries greater leverage. Computing the two sensitivities directly confirms the reversal: $|\text{sens}_{\text{floor}}| = 0.744$ while $|\text{sens}_{\text{OOC}}| = 0.85 \cdot 0.80 = 0.680$, a ratio $0.914 < 1$. Had the self-loop sat at s_2 instead, it would have cancelled and left the ordering unchanged.
Branching replaces the two-probability test with a sum over paths. Now let the post-committee layer branch into two second committees with $Q_{1,2a} = 0.30$ and $Q_{1,2b} = 0.60$ ($R_{1,\text{Fail}} = 0.10$), clearance probabilities $Q_{2a,3} = 0.90$ and $Q_{2b,3} = 0.30$, and no self-loops. There is now no single scalar $Q_{2,3}$, so Corollary 1 cannot even be stated. Theorem 1 still applies: the floor visit count is the sum over the two paths, $N_{0,3} = 0.30 \cdot 0.90 + 0.60 \cdot 0.30 = 0.45$, and the dominance comparison aggregates the two branch sensitivities against the floor. When the branches differ sharply in failure intensity, the aggregate can favor either stage depending on the split. Leverage is a quantity summed over paths, and only the acyclic single path case collapses it to the estimable pair $(B_{3,0}, Q_{2,3})$.

2.5 *Data sources and state mapping*

The Colorado General Assembly publishes House Final Status Sheets (Colorado General Assembly, House Final Status Sheets) recording, for each bill, its introduction date, committee assignments and report dates, floor reading dates, and final disposition. The procedural action codes (PI, LO, SIG, FI, NFI, and related) are defined on the status sheet legend and in the Office of Legislative Legal Services glossary (Office of Legislative Legal Services), and the referral and floor scheduling procedures are governed by the chamber and joint rules (Colorado General Assembly, Rules). Three sessions are analyzed: 2022 (73rd General Assembly; 400 bills after deduplication and exclusion of supplemental appropriations), 2023 (74th GA, 1st Regular Session; 311 bills), and 2024 (74th GA, 2nd Regular Session; 445 bills), totaling 1,156 bills after excluding concurrent and joint resolutions, memorials, and supplemental appropriations. All three sessions had unified Democratic control of both chambers (2022 House 41D–24R; 2023–24 House 46D–19R, a veto-proof supermajority).

Colorado 2022–2024 was chosen deliberately. The House status sheets are public and granular enough to support a four-stage specification; consistent majority control isolates intralegislative dynamics without chamber-level party change; and Colorado's GAVEL reform of 1988, which requires every introduced bill to be assigned to a committee of reference, considered on its merits, and brought to a committee vote, has been used as a quasi-experimental setting for

studying agenda control (Cox et al.). The framework is not Colorado specific; only the application is.

State mapping rules. *Introduced*: every bill on filing. *In Committee*: on committee assignment. *Out of Committee*: only if the first House committee either reports the bill out on a specific date (a report date marker, not the fiscal note marker alone) or refers it to a later House committee; a bill whose first action is a Postponed Indefinitely disposition stays In Committee and is coded In Committee → Failed. *On Floor*: on a recorded House second reading, or on a strong signal such as a signature, veto, conference report, or a floor "Lost" code. *Passed*: on signature or becomes law. *Failed*: postponed indefinitely at any stage, lost on a floor vote, deemed lost or postponed at adjournment, vetoed, or with no recorded final disposition by the cutoff.

A coding pitfall worth flagging. A preliminary version of this rule used the fiscal impact determination (FI/NFI) as the signal for committee clearance. This is unreliable: Colorado records a fiscal note for essentially every bill that receives a hearing, including bills postponed indefinitely in that same hearing. Under the preliminary rule a bill whose first action was "PI‹date› FI" was misread as having cleared committee. Misclassification ran 10.6–18.3% per session. The effect is hard to catch from aggregate checks: the In Committee → Failed share looks near zero, while the Out of Committee → Failed share is inflated to roughly 21% and looks stable. Yet overall passage and floor failure rates are barely changed, because the misclassified bills are still counted as failed. Only their stage of death is wrong. The corrected rule was validated against the raw status sheet text: all 167 bills classified as first-committee failures (63 in 2022, 57 in 2023, and 47 in 2024) were manually checked against the original status sheets. In addition, a simple random sample of 100 bills classified as clearing the first committee was reviewed in a separate validation pass; no discrepancies with the final coding rule were identified, giving a one-sided 95% upper confidence bound of approximately 3.0% for the false clearance rate. Future users should verify the first committee disposition against the raw text rather than a derived fiscal note field, and report the two shares separately.

Supplemental appropriations bills follow a fast Joint Budget Committee pathway and all passed in the observed sample; their fiscal column reads "N/A." They are removed by an explicit filter, leaving the 400, 311, and 445 bills noted above. The final data contain four nonempty trajectory types; the potential fifth category, failure before committee assignment, is empty in the corrected data.

Sponsor party classification. Bills are classified by the party of the primary House sponsor using official 73rd and 74th General Assembly membership records (Colorado General Assembly, Legislative Council Staff). The primary specification retains *every* bill with an identifiable primary House sponsor, excluding none, so that the majority pool is not shaped by researcher discretion. Two members (Herod, the 2022 Joint Budget Committee chair, and McCluskie, the incoming Speaker) account for an unusually large block of budget and leadership scheduled bills (69 in total) that followed fast-track budget or leadership pathways and all passed in the observed sample; because including them slightly *widens* the reported gaps, removing

them is reported only as a robustness check in Section 4, where the first-committee gap moves by at most 0.8 points. A purely mechanical alternative that flags fast-track bills by procedural pattern gives first-committee gaps of +48.1, +39.4, and +30.0 points, essentially identical to the all-sponsor values.

Estimation and statistical analysis. Transition probabilities are estimated by maximum likelihood: for each state i, the estimate of p_{ij} is the observed count of $i \to j$ transitions divided by the total number of transitions out of i. This estimator is consistent for time-homogeneous chains under independence (Kemeny and Snell). Uncertainty is quantified by a nonparametric bootstrap that resamples whole bill trajectories within each session (2,000 resamples per statistic). Partisan comparisons use Fisher's exact tests and Cohen's h effect sizes; cross-session and cross-cohort homogeneity use χ^2 tests on the appropriate risk sets. All code and derived data are provided in the replication package (see Data and Code Availability), and reproduce the principal analyses, tables, and figures.

3 Results

3.1 *Estimated transition probabilities and absorption*

Applied to 2024, the model gives a passage probability $B_{0,0} = 0.7326$, matching the empirical rate 326/445 to four decimals. This is an internal consistency check, since the two must coincide under maximum likelihood. A bill's passage probability rises in two roughly equal jumps: from 0.733 at Introduced to 0.819 on reaching Out of Committee, then to 0.918 on reaching On Floor. The first-committee vote removes about 10–18% of introduced bills (Table 1, Fig 2). Table 3 reports the derived absorption quantities.

Table 1: Estimated transition probabilities for all three sessions. OOC = Out of Committee. The In Committee → Failed transitions, which the preliminary coding rule concealed, are shown explicitly.

From → To	2022	2023	2024	Δ22→23	Δ23→24
Introduced → In Committee	1.0000	1.0000	1.0000	0.0000	0.0000
In Committee → OOC	0.8425	0.8167	0.8944	−0.0258	+0.0777
In Committee → Failed	0.1575	0.1833	0.1056	+0.0258	−0.0777
OOC → On Floor	0.9496	0.9331	0.8920	−0.0165	−0.0411
OOC → Failed	0.0504	0.0669	0.1080	+0.0165	+0.0411
On Floor → Passed	0.9563	0.9198	0.9183	−0.0364	−0.0015
On Floor → Failed	0.0437	0.0802	0.0817	+0.0364	+0.0015

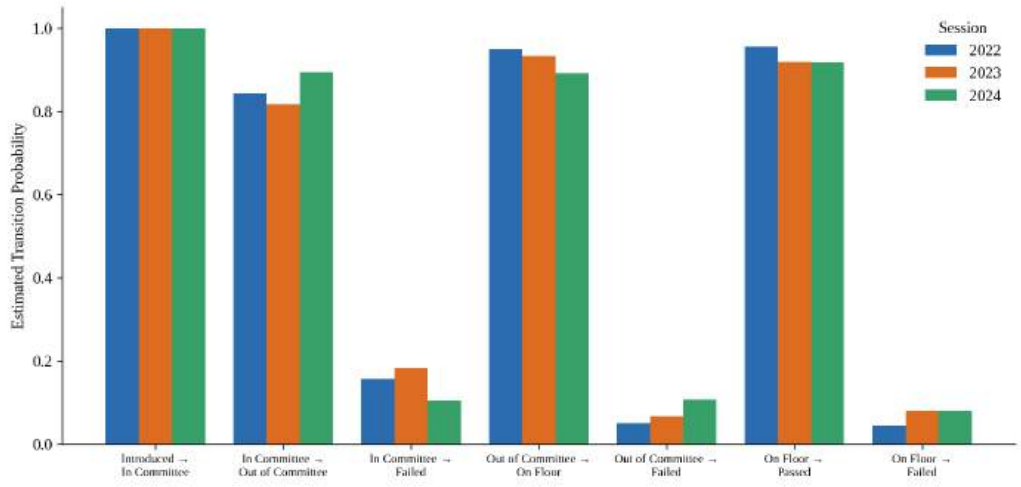


Fig 2: Maximum-likelihood transition-probability estimates by session. The first-committee filter (In Committee → Failed) drops sharply between 2023 (18.3%) and 2024 (10.6%), while the conditional out-of-committee failure rate rises. The two trends are not mirror images, showing that the corrected classification does not merely reallocate a fixed failure share between two adjacent stages.

3.2 *Failure structure by stage*

Table 2 decomposes failures by stage. Two features dominate. First, the largest single failure share is the first-committee vote: 10.6–18.3% of introduced bills are postponed indefinitely by their first committee. Second, the Out of Committee → Failed share differs across sessions (4.2%, 5.5%, 9.7%). On the correct risk set the conditional transition rates are 5.0%, 6.7%, and 10.8%, and a test of equality across sessions rejects a common rate ($\chi^2 = 9.00$, $p = 0.011$). Bootstrap 95% intervals for that rate are [3.0%, 7.4%], [3.9%, 9.8%], and [7.8%, 13.8%]; the 2024 interval is disjoint from 2022. The In Committee → Failed rate exceeds the residual in every session, roughly threefold in 2022 and 2023 and narrowly in 2024 (10.6% vs 9.7%).

Table 2: Bill failures by stage and session, as a percentage of introduced bills (counts in parentheses). The In Committee → Failed row, concealed by the preliminary rule, is the largest single failure stage in every session.

Stage	2022	2023	2024
In Committee → Failed	15.8% (63)	18.3% (57)	10.6% (47)
Out of Committee → Failed	4.2% (17)	5.5% (17)	9.7% (43)
On Floor → Failed	3.5% (14)	6.1% (19)	6.5% (29)
Total failed	23.5% (94)	29.9% (93)	26.7% (119)
Total passed	76.5% (306)	70.1% (218)	73.3% (326)
N	400	311	445

Table 3: Passage probability $B_{i,0}$ and expected steps to absorb it by starting state and session, derived from the fundamental matrix. $B_{0,0}$ equals the empirical passage rate exactly under maximum likelihood.

Start state	*t* ('22)	*B* ('22)	*t* ('23)	*B* ('23)	*t* ('24)	*B* ('24)
Introduced	3.643	0.7650	3.579	0.7010	3.692	0.7326
In Committee	2.643	0.7650	2.579	0.7010	2.692	0.7326
Out of Committee	1.950	0.9080	1.933	0.8583	1.892	0.8191
On Floor	1.000	0.9563	1.000	0.9198	1.000	0.9183

3.3 *Sensitivity of the passage probability*

Applying Proposition 1 to the estimated probabilities gives the coefficients in Table 4 (Fig 3). The first committee coefficient is $-B_{2,0}$ (since $N_{0,1} = 1$): −0.908 (2022), −0.858 (2023), −0.819 (2024). These magnitudes exceed both the floor and out-of-committee sensitivity magnitudes in 2022 and 2023; in 2024 the first-committee sensitivity magnitude (0.819) is slightly smaller than the out-of-committee magnitude (0.821). The floor and out of committee magnitudes are statistically indistinguishable within each session: the sign of their difference flips across sessions and the bootstrap intervals on the difference all cross zero, reflecting $B_{3,0} \approx Q_{2,3}$ (Corollary 1). "Bottleneck" by failure share, by conditional hazard, and by sensitivity are distinct notions; here the first committee leads by all three in 2022 and 2023 and remains largest or comparable in 2024.

Table 4: First committee, floor, and out of committee (OOC) sensitivity coefficients by session, with bootstrap 95% intervals in brackets. The bootstrap probability that |OOC| exceeds |Floor| is 68% (2022), 28% (2023), and 89% (2024); the sign of |OOC| − |Floor| flips across sessions.

Session	First Committee ($-B_{2,0}$)	Floor ($-N_{0,3}$)	OOC ($-N_{0,2}B_{3,0}$)
2022	−0.908 [−0.938, −0.878]	−0.800 [−0.838, −0.760]	−0.806 [−0.842, −0.768]
2023	−0.858 [−0.900, −0.813]	−0.762 [−0.807, −0.711]	−0.751 [−0.797, −0.700]
2024	−0.819 [−0.857, −0.780]	−0.798 [−0.836, −0.757]	−0.821 [−0.858, −0.783]

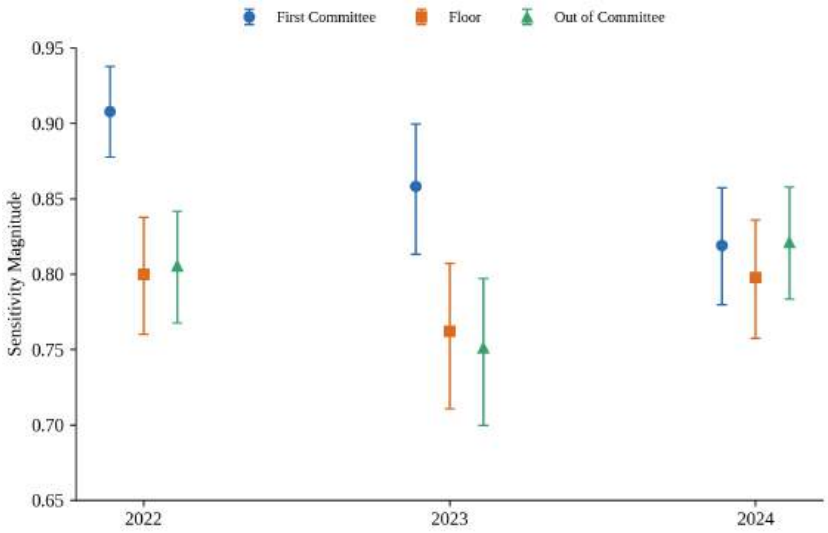


Fig 3: First-committee, floor, and out-of-committee sensitivity magnitudes by session with bootstrap 95% intervals. First-committee sensitivity is greatest in 2022 and 2023 and essentially tied with out-of-committee in 2024; the bootstrap intervals for the within-session floor–OOC difference include zero in all three sessions.

Substituting the 2022 floor failure rate into the 2023 chain, holding all else at 2023 values, yields a counterfactual passage probability of 0.7287, recovering about 43% of the 2022–2023 passage decline; the remaining 57% comes from the rise in In Committee → Failed (15.8%→18.3%) and the smaller rise in Out of Committee → Failed (4.2%→5.5%). No single transition dominates the year-to-year change.

3.4 *Party stratification*

Stratifying the chain by sponsoring party reveals a large majoritarian filter at the first-committee vote and a smaller but meaningful conditional disparity after clearance, especially in 2023. Table 5 reports stage-specific failure shares for Democratic- (majority) and Republican- (minority) sponsored bills.

Table 5: Stage-specific failure shares (percent of introduced bills) by sponsoring party, using all primary House sponsors (no sponsor excluded). Maj = Democratic; Min = Republican; Gap = Min − Maj (percentage points). Stars from Fisher's exact tests: *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$. Cohen's h in parentheses ($|h|>0.8$ large). Removing the 69 Herod/McCluskie budget sponsorships changes the first-committee gaps by at most 0.8 points (Section 4). Panels A–C give the three sessions.

Panel A. 2022 session (N: Maj 302, Min 98)

Stage	Maj	Min	Gap (*h*)
InComm→Fail	4.3%	51.0%	+46.7*** (1.17)

Stage	Maj	Min	Gap (*h*)
OOC→Fail	3.0%	8.2%	+5.2* (0.23)
Floor→Fail	4.3%	1.0%	−3.3 (0.22)
P(Pass|Intro)	88.4%	39.8%	−48.6*** (1.08)

Panel B. 2023 session (N: Maj 239, Min 72)

Stage	Maj	Min	Gap (*h*)
InComm→Fail	9.2%	48.6%	+39.4*** (0.93)
OOC→Fail	2.5%	15.3%	+12.8*** (0.48)
Floor→Fail	6.7%	4.2%	−2.5 (0.11)
P(Pass|Intro)	81.6%	31.9%	−49.6*** (1.05)

Panel C. 2024 session (N: Maj 357, Min 88)

Stage	Maj	Min	Gap (*h*)
InComm→Fail	4.8%	34.1%	+29.3*** (0.81)
OOC→Fail	9.0%	12.5%	+3.5 (0.11)
Floor→Fail	7.3%	3.4%	−3.9 (0.18)
P(Pass|Intro)	79.0%	50.0%	−29.0*** (0.62)

Three features emerge. First, the party gap is largest and most consistent at the first committee (29–47 points; first-committee death 34–51% for minority vs 4.3–9.2% for majority; Fig 4). The out of committee shares understate the post-committee disparity because minority bills are already depleted at committee; on the correct risk set the conditional out of committee hazards are 3.1% (Maj) versus 16.7% (Min) in 2022 (+13.6 pp, $h = 0.49$, Fisher's exact $p = 0.0009$), 2.8% versus 29.7% in 2023 (+27.0 pp, $h = 0.82$, $p < 10^{-6}$), and 9.4% versus 19.0% in 2024 (+9.6 pp, $h = 0.28$, $p = 0.039$). All three sessions show nominal $p < 0.05$ in the unadjusted Fisher tests, although the smaller 2024 result does not remain significant after a Bonferroni correction across the three tests (0.05/3 = 0.0167). Second, the committee filter narrows across sessions (46.7, 39.4, 29.3 points). Third, overall passage is 32–50% for minority-sponsored bills versus 79–88% for majority-sponsored bills (Fisher's exact $p < 10^{-6}$ in every session). The gap admits two readings. Minority bills may be ideologically distant from the chamber median, or the majority may use committee control to block bills that a floor median would pass. The descriptive analysis locates the difference at committee but cannot separate these mechanisms (identification would need agenda rule variation, as in the GAVEL quasi-experiment of Cox et al.). The pattern is consistent with a majoritarian committee organization model (Rohde; Cox and McCubbins).

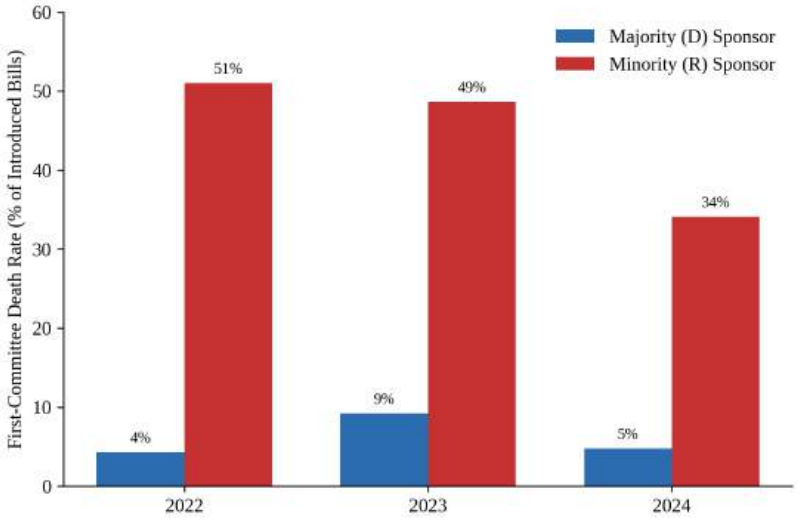


Fig 4: First-committee death rate by sponsoring party and session. Minority-sponsored bills die at 34–51% in committee versus 4.3–9.2% for majority-sponsored bills, a ratio of roughly 5–12×. On the risk set of bills reaching the Out of Committee, the conditional hazard gap is +13.6/+27.0/+9.6 points (2022/2023/2024). First-committee h values (0.81–1.17) are large effects.

3.5 *Bicameral decomposition*

Aggregate on floor failure rates of 3.5%, 6.1%, and 6.5% appear to describe a modest shift beginning in 2023. Hand coding all 62 floor failures reveals four categories. A floor failure is *Senate-side* if, after a House second reading, the bill was postponed, laid over, or lost in a Senate committee or on the Senate floor; *House-side* if it lost a House floor vote or failed House concurrence; a *veto* is separate because the bill cleared both chambers; and a *session end* death is a deemed lost or deemed postponed at adjournment. In 2023, 16 of 19 floor failures (84%) were Senate-side postponements or gubernatorial vetoes, with the vetoed bills having cleared both chambers, and 5 of the 10 explicit Senate-side deaths clustered in housing and in ethics or governance (Table 6); in 2024, 17 of 29 (59%) fit the same Senate-side-or-veto pattern. Table 7 and Fig 5 report the decomposed rates.

Table 6: 2023 Senate-side On Floor failures by policy area (10 total, excluding vetoes and session-end deaths). Housing and ethics/governance account for 5 of 10; 8 of the 10 are Democratic sponsored.

Policy area	Bills	n
Housing & tenancy	HB1115 (rent control), HB1171 (eviction just cause)	2
Public health & harm reduction	HB1202 (overdose prevention centers)	1
Firearms & public safety	HB1165 (county firearms discharge authority)	1
Workers & labor	HB1078 (unemployment dependent allowance)	1

Policy area	Bills	n
Ethics & governance	HB1065 (local govt ethics), HB1090 (metro district directors), HB1206 (sheriffs & DAs)	3
Other	HB1028 (name badge, former member), HB1066 (landlocked public land)	2
Total		10

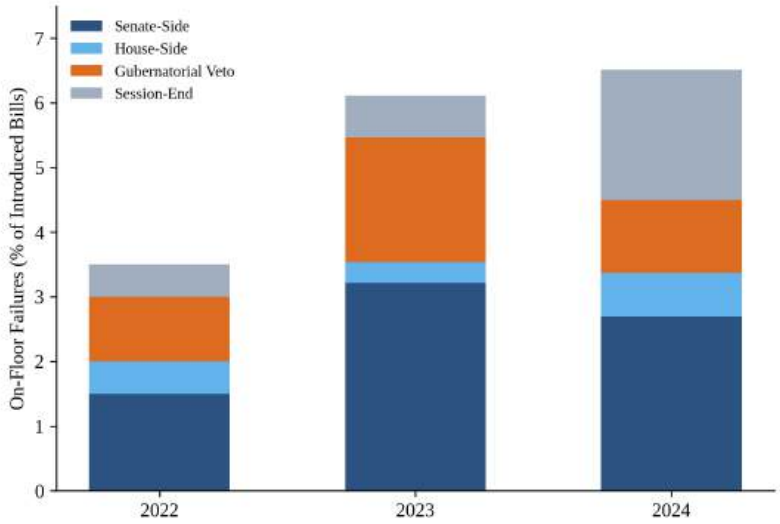


Fig 5: On-Floor failure decomposition by mode of death. Senate-side losses are the largest single component in 2023 and 2024. The aggregate rates differ by only 0.4 percentage points, but their composition differs: 2023 has a larger veto component, whereas 2024 has more session-end deaths (9 versus 2). This illustrates the paper's methodological point that aggregate rates do not identify the mechanisms underlying each stage.

Table 7: On Floor failure probabilities by mode of death, as a percentage of all introduced bills (counts in parentheses). Vetoes and session-end deaths are chamber-ambiguous and reported separately.

Component	2022	2023	2024
Senate-side	1.5% (6)	3.2% (10)	2.7% (12)
House-side	0.5% (2)	0.3% (1)	0.7% (3)
Gubernatorial veto	1.0% (4)	1.9% (6)	1.1% (5)
Session end (deemed PI/Lost)	0.5% (2)	0.6% (2)	2.0% (9)
Total On Floor → Failed	**3.5% (14)**	**6.1% (19)**	**6.5% (29)**

3.6 *Within-session heterogeneity*

Time homogeneity predicts a constant out of committee failure rate across bills introduced at different times within a session. Splitting bills into introduction date tertiles and computing the conditional Out of Committee → Failed rate on the correct risk set (Table 8, Fig 6), no session rejects homogeneity ($\chi^2 < 5.4$, $p \geq 0.07$). By contrast, the In Committee → Failed

rate does show strong time heterogeneity in every session ($\chi^2 > 10$, $p < 0.01$): late-introduced bills are less likely to die in committee. This pattern may reflect differences in the composition or scheduling of late bills; the present data do not identify its cause. The tertile diagnostic does not detect a statistically significant departure from time homogeneity at the post-committee stage, although its power is limited and the sensitivity results remain session-average summaries.

Table 8: Conditional Out of Committee failure rate by introduction cohort (tertiles of introduction date). Each cell is failures divided by bills that reached Out of Committee (failures/reached). χ^2 tests homogeneity across cohorts (df = 2); no session rejects at conventional levels.

Cohort	**2022**	**2023**	**2024**
Early tertile	7.9% (8/101)	4.9% (4/81)	13.7% (17/124)
Middle tertile	5.7% (6/105)	11.5% (9/78)	13.4% (17/127)
Late tertile	2.3% (3/131)	4.2% (4/95)	6.1% (9/147)
Aggregate rate	5.0%	6.7%	10.8%
χ^2 (p)	3.92 (0.14)	4.27 (0.12)	5.31 (0.07)

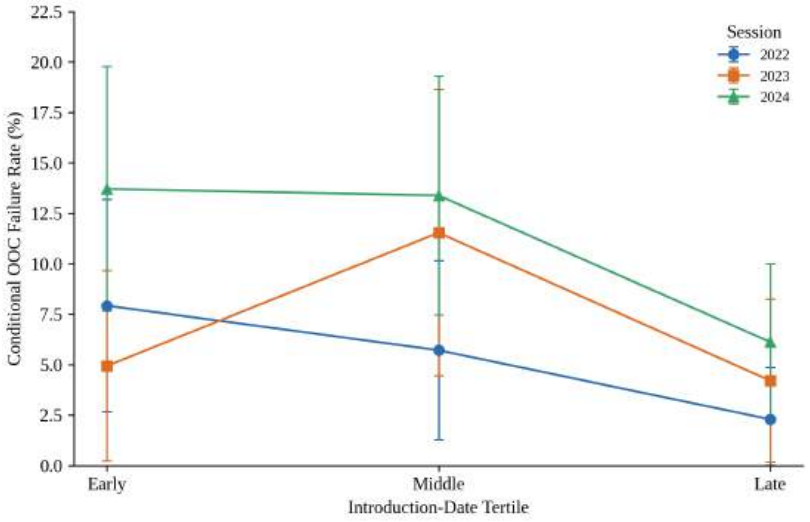


Fig 6: Conditional Out of Committee → Failed rate by introduction-date tertile with Wald 95% confidence intervals for binomial proportions. In no session does cross-tertile variation reject homogeneity at the 5% level ($\chi^2 < 5.4$, $p \geq 0.07$).

4 Robustness

Six checks assess sensitivity to modeling choices. *Sponsor pool*: removing the 69 Herod/McCluskie budget sponsorships changes the all-sponsor first-committee gaps from +46.7/+39.4/+29.3 to +45.9/+39.0/+29.2 points (h 1.14/0.91/0.80; Fisher $p < 10^{-11}$ each); the mechanical pattern-based alternative gives +48.1/+39.4/+30.0. All three agree within about one point, so the headline filter is not an artifact of the sponsor definition. *Appropriations*: including

the excluded fast-track bills would raise passage by 0 -- 1.5 points and lower the committee failure rate by 0 -- 0.7 points per session, leaving the pattern unchanged.

Bootstrap uncertainty: the conditional out of committee rates 5.0/6.7/10.8% reject equality ($\chi^2 = 9.00$, $p = 0.011$), with 2024 disjoint from 2022. *Sensitivity stability*: floor and out of committee coefficients are stable across sessions (−0.80 to −0.76 and −0.82 to −0.75), with the difference's interval crossing zero in every session. *Bicameral classification*: in 2023, 53% of floor failures are explicitly Senate-side, and the share occurring outside an explicit House-side defeat rises to 84% when vetoes are included and to 95% when session-end deaths are also included; the 2024 House chamber share ranges 10–41% depending on convention.

Cohort-adjusted party gap: because Republican bills skew early and early bills fail more often in committee, the first-committee association is recomputed within introduction tertiles. In the first two tertiles, the Republican failure rate exceeds the Democratic rate by 28.5 -- 53.2 percentage points (all Fisher's exact $p \leq 0.0002$). Mantel–Haenszel odds ratios pooling across tertiles are 20.3, 8.9, and 8.0 in 2022, 2023, and 2024, compared with unstratified odds ratios of 23.2, 9.3, and 10.3. Adjustment therefore reduces the association in 2022 and 2024 but leaves it very large.

5 Discussion

5.1 *Committee voting as the largest observed filter*

The corrected analysis places the largest observed filter at the first-committee vote. This stage also exhibits the largest and most consistent partisan disparity, supporting an interpretation in which majority control operates primarily through committee dispositions rather than later floor scheduling. Post-clearance disparities remain visible, particularly in 2022 and 2023, but they are smaller and less consistent.

5.2 *The post-committee failure rate*

The out of committee residual (conditional 5.0/6.7/10.8%; $\chi^2 = 9.00$, $p = 0.011$) is smaller than the preliminary analysis reported but not negligible. With only three sessions its upward drift cannot be separated from session-specific coordination problems or measurement variability.

5.3 *Bicameral divergence under unified control*

That 16 of 19 floor failures in 2023 occurred outside the House chamber, with several Senate-side deaths clustered in housing and in ethics or governance, points to chamber-level divergence invisible in aggregate data (documented in the state politics literature (Oldham; Binder) and modeled as intercameral bargaining (Tsebelis and Money)). The 2024 session shows more Senate-side losses in absolute terms; the chain makes the cross-session change quantitative and localizable.

5.4 *Sensitivity coefficients*

Corollary 1 reduces stage dominance to $B_{3,0}$ versus $Q_{2,3}$; in Colorado both are near one, so the ratio is near one and the two sensitivities are indistinguishable. In a process with heavier post-committee attrition or a lower floor passage rate the relation would be unambiguous. The application demonstrates the framework; it does not by itself settle which stage carries more leverage in general.

5.5 *A methodological caution*

The fiscal impact coding rule misclassifies 10.6 -- 18.3% of bills per session, inflating the apparent post-committee failure share from a true 4–10% to 20–24% and making it look stable across sessions. Aggregate checks miss this because the bills are still counted as failed; only the stage is wrong. The broader lesson: aggregate stability across periods can be produced by stable misclassification rather than a robust mechanism, so stage-level audits against the primary record are essential.

5.6 *Limitations and scope*

Three limitations matter. *Dependence*: the independence assumption behind the bootstrap is plausibly violated by shared institutional constraints, so reported intervals and p-values should be read as descriptive measures of variation rather than exact coverage guarantees; a bootstrap over introduction-week blocks, committees, or sponsor clusters is a natural extension. *Scope of the time trend*: three sessions cannot distinguish a secular drift in the residual from a stationary process sampled at three points. *Generalization*: the framework applies to any finite absorbing chain on a staged process, but the specific estimates (10–18% first-committee filtering, 4–10% residual, 29–47-point partisan gap) are Colorado 2022–2024 estimates under unified Democratic control. Replication on a Republican-controlled legislature with separate procedural tracking, such as the Texas House, would be a direct test of generalizability.

6 Conclusion

This paper shows how an absorbing Markov chain can separate aggregate throughput from stage-specific failure and quantify how local transition changes affect eventual success. In the Colorado application, the first-committee vote is the largest observed failure stage and exhibits a large partisan gap. Post-clearance failures are smaller but vary across sessions, while similar aggregate floor-failure rates conceal different combinations of Senate-side losses, House-side losses, vetoes, and session-end deaths. The analysis also documents a fiscal-note coding rule that incorrectly shifts committee failures downstream. The theoretical results show that stage sensitivity depends on expected visits and continuation values, and that self-loops or branching can change simple stage rankings. The same framework can be applied to other staged institutional processes.

Author Contributions

Michael Zhang conceived the study, assembled and coded the legislative data, developed and executed the computational pipeline, performed the statistical analyses, derived the mathematical results, prepared the figures and tables, and wrote the manuscript.

Acknowledgments

The author thanks Dr. Xiang Fang for her mathematical guidance and for reviewing the model, proofs, and exposition.

Conflict of Interest

The author declares no conflict of interest.

Funding

This research received no external funding.

Data and Code Availability

All primary data are public records of the Colorado General Assembly: the House status sheets (Colorado General Assembly, House Final Status Sheets), the membership and sponsorship records used for party classification (Colorado General Assembly, Legislative Council Staff), the chamber and joint rules (Colorado General Assembly, Rules), and the action code definitions (Office of Legislative Legal Services) are available from the Assembly's session-publications archive. The complete replication package contains the code and derived data used to generate the reported analyses, tables, and figures. It bundles the PDF parser implementing the corrected first-committee coding rule, the chain estimation and bootstrap code, the derived per-bill state sequences, the sponsor party and chamber coding files, and the scripts that produce the tables and figures. The package is available at the project repository, github.com/mzhang5040/stochastic_bill_processing (also supplied through Scholastica's supplementary file fields), and will be deposited in a permanent public archive with a DOI on acceptance.

Works Cited

Binder, Sarah A. “The Dynamics of Legislative Gridlock, 1947–96.” American Political Science Review, vol. 93, no. 3, 1999, pp. 519–33, https://doi.org/10.2307/2585572.

Bucchianeri, Peter, et al. “Legislative Effectiveness in the American States.” American Political Science Review, vol. 119, no. 1, 2025, pp. 21–39, https://doi.org/10.1017/S0003055424000042.

Caswell, Hal. Sensitivity Analysis: Matrix Methods in Demography and Ecology. Springer, 2019, https://doi.org/10.1007/978-3-030-10534-1.

Colorado General Assembly. House Final Status Sheets, Seventy-Third and Seventy-Fourth General Assemblies, 2022, 2023, and 2024 Regular Sessions. Office of the Chief Clerk of the House of Representatives, 2024, leg.colorado.gov/agencies/senate/session-publications.

———. Rules of the House of Representatives, Rules of the Senate, and Joint Rules. Office of Legislative Legal Services, 2025, leg.colorado.gov/agencies/office-legislative-legal-services/publications.

Colorado General Assembly, Legislative Council Staff. Legislator History Information. Colorado General Assembly, 2024, leg.colorado.gov/.

Cox, Gary W., and Mathew D. McCubbins. Setting the Agenda: Responsible Party Government in the U.S. House of Representatives. Cambridge UP, 2005, https://doi.org/10.1017/CBO9780511791123.

Cox, Gary W., et al. “Party Power or Preferences? Quasi-Experimental Evidence from American State Legislatures.” The Journal of Politics, vol. 72, no. 3, 2010, pp. 799–811, https://doi.org/10.1017/S0022381610000174.

Frydman, Halina, and Til Schuermann. “Credit Rating Dynamics and Markov Mixture Models.” Journal of Banking & Finance, vol. 32, no. 6, 2008, pp. 1062–75, https://doi.org/10.1016/j.jbankfin.2007.09.013.

GovTrack.us. “Bill Prognosis Analysis.” GovTrack.us, Civic Impulse, 2024, www.govtrack.us/about/analysis#prognosis.

Kemeny, John G., and J. Laurie Snell. Finite Markov Chains. D. Van Nostrand, 1960.

Nay, John J. “Predicting and Understanding Law-Making with Word Vectors and an Ensemble Model.” PLOS ONE, vol. 12, no. 5, 2017, e0176999, https://doi.org/10.1371/journal.pone.0176999.

Office of Legislative Legal Services. Glossary of Legislative Terms; Acronyms and Abbreviations. Colorado General Assembly, 2024, content.leg.colorado.gov/agencies/office-legislative-legal-services/acronyms-and-abbreviations.

Oldham, R. L. “Partisan Governance and Minority Party Vetoes: Evidence from State Legislatures.” Legislative Studies Quarterly, vol. 49, no. 3, 2024, pp. 617–48, https://doi.org/10.1111/lsq.12449.

Rohde, David W. Parties and Leaders in the Postreform House. U of Chicago P, 1991.

Tsebelis, George, and Jeannette Money. Bicameralism. Cambridge UP, 1997, https://doi.org/10.1017/CBO9780511609350.

Volden, Craig, and Alan E. Wiseman. Legislative Effectiveness in the United States Congress. Cambridge UP, 2014, https://doi.org/10.1017/CBO9781139032360.

Yano, Tae, et al. “Textual Predictors of Bill Survival in Congressional Committees.” Proceedings of the 2012 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, Association for Computational Linguistics, 2012, pp. 793–802, aclanthology.org/N12-1097/.

Against Erasure: Death, Dignity, and Humanity's Refusal to Disappear
By Kunyu Wei

Introduction

It is inadvertent that a human will realize death lying in the future of their life, authentic and touching. Might it be beside a hospital bed, when medical beeps alarm an approaching termination. Might it rise unexpectedly at night, when realization hits, as all beloved ones will eventually cease to exist. Death quietly intrudes consciousness; yet it never leaves, a stubborn resident.

Unlike other living creatures, human beings possess the terrifying gift of imagining their own end long before their arrival. We are conscious of the termination of our existence while existing. Thus a shadow is cast on the living, from the very first light shed on this troubling realm of thoughts, in a post-positivist way, shaping our relationships, memory, meaning, and civilization.

Human beings are fascinated by death not merely because they fear biological endings, but because death threatens identity, dignity, memory, and the continuity of human existence. Rituals, laws, religion, and civilization itself emerge as collective attempts to resist disappearance and preserve meaning beyond mortality.

Disappearance as such. Amongst humanity rarely would a fear surpass permanent emptiness.

This essay will first examine how mortality shapes human existence through Heidegger's concept of being-towards-death. It will then explore why human beings fear disappearance more deeply than death itself, focusing on identity, memory, and relational continuity. Next, it will analyze why dignity continues to matter after biological death and how ethical systems institutionalize the protection of the dead. Finally, it will examine how rituals, law, and civilization function as humanity's collective resistance against erasure.

Death Shapes Human Existence Before It Arrives

Human beings live not only toward life, but toward death. In Jean Baudrillard's eyes, we are all marching toward the end.

Martin Heidegger argues that human beings are fundamentally "being-towards-death," meaning that mortality is not merely an event waiting at the end of life, but a condition already woven into existence itself. Human beings do not simply die one day. They spend their lives moving toward an ending they can already imagine.

Existential psychologist Irvin Yalom similarly argues that awareness of death quietly structures human anxiety throughout life. Even when people are not consciously thinking about death, mortality continues shaping emotional existence beneath ordinary routines and distractions.

No one can die for us.

Human life is built upon companionship. Love, friendship, family, and civilization itself emerge through emotional interdependence. Death, however, destroys this shared structure.

Even in crowded hospital rooms surrounded by loved ones, death ultimately remains solitary. Family members may hold the hands of the dying or whisper softly beside the bed, yet no one can enter death alongside another person.

This irreducible solitude explains why death unsettles human beings so deeply. Death exposes the limits of certainty, comfort, and permanence. A single illness, accident, or moment of aging can suddenly reveal how fragile human existence truly is.

Ernest Becker argues that much of human civilization can be understood as an attempt to deny or transcend mortality itself. Human beings continuously construct systems of meaning capable of resisting the terror produced by awareness of death.

Human beings therefore do not fear death merely because life ends.

What human beings truly fear is disappearance.

Human Beings Fear Disappearance More Than Death Itself

Human beings fear disappearance because identity is constructed through memory, recognition, and relationships with others. If not so, we are Baudrillardly dead. Atomized ghosts, waiting on the congested highways, we disappear rather than arrive. If there is nothing other than the capsules of steel, no relationship, no recognition, we are drowning in the aesthetics of disappearance.

Georg Simmel argues that the self is continuously shaped through interaction within social life rather than existing as an isolated inner essence. Erving Goffman similarly suggests that identity is socially performed and recognized through interaction with others.

People become daughters, sons, lovers, parents, and friends only through relationships with others. Identity itself is relational.

Death therefore threatens not only the body, but also the destruction of everything individuals once called "themselves." Human beings fear becoming forgotten because memory and recognition sustain identity within the social world. In the flow of steel, lights, and neon, Baudrillard saw how speed and flow, without these interactions, atomized humans into a memoryless, meaningless symbol, escaping existence and history.

A person disappears twice: first through biological death, and again when no memory of their existence remains among the living.

And so human beings preserve photographs, letters, names, recordings, graves, and family histories across generations. These objects serve as evidence that a life once existed, suffered, loved, and left traces in the world, beyond a mere tail light in the stream of cars in Los Angeles.

Paul Ricoeur’s theory of narrative identity further suggests that human beings understand themselves through stories extending across time rather than through purely biological existence. Death threatens this continuity by interrupting the narrative structure through which individuals understand themselves.

The fear of being forgotten appears everywhere within civilization itself. Human beings write books, create art, establish families, and build monuments because they desire continuity beyond biological mortality.

This fear becomes especially visible when individuals encounter abandoned cemeteries or weathered gravestones whose names can no longer be read. Such images confront humanity with the terrifying possibility that entire lives may eventually vanish from collective memory.

Human consciousness resists this possibility because human beings cannot emotionally accept absolute erasure.

Dignity Continues Beyond Biological Death

Human dignity survives death because identity stands unwavering through narrative, memory, and moral recognition.

The fear of disappearance explains why dignity continues to matter even after biological death. Human beings continue hoping that their identities remain meaningful after they die.

Fredrik Svenaeus argues that dignity belongs not only to the living body, but also to the narrative continuity of the person. Human identity does not vanish immediately upon the end of biological life because it survives through memory, relationships, and symbolic meaning.

Phenomenological bioethics similarly argues that death cannot be understood merely as biological cessation because human existence is fundamentally relational, embodied, and socially meaningful.

The dead still occupy emotional space in the lives of the living. Families still speak of their names years after burial. Empty chairs remain emotionally unbearable long after funerals end, an empty space, an abyss in an intact society, therefore carrying meaning in the emptiness. Emptiness speaks, the abyss carried on the occupier once here. Certain voices continue echoing within memory long after physical absence begins.

Immanuel Kant argues that human beings must always be treated as ends in themselves rather than instruments for external purposes. Human dignity therefore possesses intrinsic value that cannot simply disappear once biological function ceases.

This principle becomes especially visible when societies confront the treatment of corpses and human remains. International ethical frameworks repeatedly emphasize that the human body must never be treated as a purely commercial resource. The global organ trade, therefore, reveals more than illegal economic activity. It exposes the ethical danger produced when human bodies are reduced to biological resources detached from dignity and personhood. The World Health Organization explicitly argues that organ trafficking violates principles of justice, equity, and human dignity.

Even within the clinical boundaries of contemporary jurisprudence the law functions as a secular custodian of the deceased, refusing to let the departed soul be reduced to mere unvalued biological matter. From the statutory protections of human remains in East Asia to the constitutional declarations of inviolable dignity in Europe, this guardian protects the reign of humanity with respect written into its codex.

These systems reveal something fundamental: civilization depends upon recognizing human beings as more than biological matter.

Once human beings begin treating one another merely as disposable objects, ethical trust gradually collapses.

Respect for the dead therefore protects more than corpses.

It protects the moral imagination sustaining civilization.

Rituals Exist Because Human Beings Refuse Erasure

Funerary rituals and afterlife beliefs function as collective psychological and cultural resistance against disappearance.

Human beings develop rituals surrounding death because they cannot emotionally tolerate absolute erasure.

Rituals therefore become more than symbolic customs. They become psychological and sociological responses to mortality itself. Terror Management Theory argues that awareness of death produces profound existential anxiety, and cultural systems help transform this anxiety into collective meaning. Ernest Becker similarly suggests that human beings seek symbolic immortality through culture, religion, and collective identity. Émile Durkheim further argues that collective rituals reinforce social solidarity by transforming individual emotions into communal meaning.

Nearly every civilization develops rituals surrounding death. Although these rituals differ across cultures and religions, they all reveal the same human refusal to accept meaningless disappearance.

Across civilizations, humanity burns incense beneath darkening skies, kneels before weathered graves, scatters flowers beside rivers, lights candles for the dead, preserves ancestral names inside family homes, and whispers prayers toward those who can no longer answer.

In East Asian ancestral traditions, Hindu cremation rituals along the Ganges River, Christian funeral ceremonies, and Mexico's Día de los Muertos celebrations, death is transformed from absolute disappearance into symbolic continuity.

Even secular societies continue to preserve rituals surrounding death. Flowers are placed beside graves after tragedies. Memorial ceremonies are organized after national disasters. Entire nations observe moments of silence after collective loss.

These practices reveal something fundamental about humanity: people cannot emotionally accept complete disappearance.

Ritual transforms absence into continuity.

As long as a name continues to be spoken, erasure never fully succeeds.

Conclusion

Human civilization itself functions as humanity's resistance against erasure.

Heidegger argues that human beings live toward death, while Camus suggests that meaning emerges precisely because life is finite. Humanity therefore continues writing stories,

preserving memories, building rituals, and protecting dignity—not because death can be defeated, but because disappearance can never be emotionally accepted.

Human beings do not obsess over death because they are fascinated by endings.

Humanity obsesses over death because it refuses to disappear.

Throughout history, civilizations have continually created structures capable of resisting erasure. Literature preserves voices long after death. Art preserves emotion. Ritual preserves memory. Law preserves dignity. Monuments preserve identity. Language itself becomes a structure through which traces of human consciousness survive across generations.

Human beings cannot emotionally accept that a life filled with memory, suffering, love, and consciousness could simply vanish without leaving anything behind.

This is why death continues to shape human existence, even among the living.

As long as human beings continue preserving names, memories, stories, and meaning, disappearance never fully succeeds.

Works Cited

Araujo, L. “Constitutional Law Around the Globe: Selection of Justices to the German Federal Constitutional Court.” Revista Direitos Fundamentais & Democracia, vol. 30, no. 2, 2025, pp. 49-64. Accessed August 1, 2026.

Basic Law for the Federal Republic of Germany, art. 1. Accessed August 1, 2026.

Baudrillard, Jean. America. Verso, 1988. Accessed August 1, 2026.

Becker, Ernest. The Denial of Death. Free Press, 1973. Accessed August 1, 2026.

Bokenkamp, Stephen R. Ancestors and Anxiety: Daoism and the Birth of Rebirth in China. University of California Press, 2007. Accessed August 1, 2026.

Carel, Havi. Phenomenology of Illness. Oxford University Press, 2016. Accessed August 1, 2026.

Cheater, Arthur P. “Death Ritual as Political Trickster in the People's Republic of China.”The Australian Journal of Chinese Affairs, no. 26, 1991, pp. 67-97. Accessed August 1, 2026.

Durkheim, Emile. “The Elementary Forms of Religious Life.” Social Theory Re-Wired, edited by Wesley Longhofer and Daniel Winchester, Routledge, 2016, pp. 52-67. Accessed August 1, 2026.

Goffman, Erving. The Presentation of Self in Everyday Life. Anchor Books, 1959. Accessed August 1, 2026.

Heidegger, Martin. Being and Time. Translated by John Macquarrie and Edward Robinson, Blackwell, 1967. Accessed August 1, 2026.

Kant, Immanuel. Groundwork of the Metaphysics of Morals. Translated by H. J. Paton, Hutchinson, 1948. Accessed August 1, 2026.

Kastenbaum, Robert, and Christopher M. Moreman. Death, Society, and Human Experience. Routledge, 2024. Accessed August 1, 2026.

Ricoeur, Paul. Oneself as Another. Translated by Kathleen Blamey, University of Chicago Press, 1992. Accessed August 1, 2026.

Simmel, Georg. The Philosophy of Money. Routledge, 2004. Accessed August 1, 2026.

Solomon, Sheldon. “The Worm at the Core: On the Role of Death in Life.” Grief Matters: The Australian Journal of Grief and Bereavement, vol. 23, no. 1, 2020, pp. 20-24. Accessed August 1, 2026.

Svenaeus, Fredrik. Phenomenological Bioethics: Medical Technologies, Human Suffering, and the Meaning of Being Alive. Routledge, 2017. Accessed August 1, 2026.

World Health Organization. Human Organ and Tissue Transplantation, WHA63.22. World Health Organization, 2010. Accessed August 1, 2026.

World Health Organization. WHO Guiding Principles on Human Cell, Tissue and Organ Transplantation. World Health Organization, 2010. Accessed August 1, 2026.

Yalom, Irvin D. Existential Psychotherapy. Basic Books, 1980. Accessed August 1, 2026.

How Does the Constant Marketing of Makeup Affect the Self-Confidence of an Adolescent Girl? By Meghana T. Tadala

Did you know that teenage girls are the easiest consumers to sell to because cosmetics are similar to a necessity for them? According to an article from Chain Drug Review, teenage girls from ages 13 to 19 have spent over $9 billion on cosmetic products (“Cosmetics”, par. 1). Social media is an online platform where creators can promote, advertise, and sell products. Makeup is a form of cosmetics which can enhance and can alter one’s appearance. The constant use of cosmetics impacts both a girl's self-esteem and their consumerism. These problems are directly interlocked due to the tendency to hide their imperfections. According to Anthonieta Looman Mafra, 78% of women spend more than an hour on how they look every single day (Mafra, par.2). Teenage girls have a tendency to compare themselves to others. This, in turn, results in the deterioration of one’s confidence and self-esteem. On the other hand, makeup enhances their features and increases their self-esteem in the moment. In the long run, makeup can give individuals psychological issues. Makeup is one of the most advertised items on social media, but what social effects does makeup really have on adolescent girls?

The research seeks to answer the question of how the constant marketing of makeup affects the self-confidence of an adolescent girl. The different positive and negative effects of makeup include increased over-consumption, mental illnesses, and adolescent sexualization. This study brings light to the social effects that teenage girls have to endure while and after using makeup products.

Social media and society can implement pressures that affect the overconsumption of cosmetics for teenage girls. Sutinah Putri, an individual who specializes in sociology, believes that “[m]edia encourages many people, especially teenage girls, to put aside rational thinking and consume these things that should not be a necessity”(par. 5). She also suggests that, “[t]he media often shows images of beauty through visual advertisements that shape people's thoughts about beauty standards”(par. 3). Advertisements and social media influencers persuade teenage girls to buy certain products. Media influence is one of the biggest factors in shaping adolescents' thoughts on beauty and is the primary pressure for overconsumption. Social media reveals unrealistic beauty standards that young girls believe that they need to have in order to fit in. Given this information, we can conclude that social media has immense control over what adolescents purchase. The creation of new beauty standards have the ability to make a teenage girl spend all of their money for a trend that will merely last a week. For example, when a trusted influencer promotes a brand, more individuals are more likely to buy it, allowing bloggers to be extremely influential on social media. “Teenagers often want to resemble trendy people in their social circle. These social pressures cause overconsumption by teenagers to avoid discrimination and feeling different from others”(Putri, par. 4). The most influential people in an adolescent’s life are the people they surround themselves with. Receiving validation from friends or people they look up to can drive them to make expensive purchases. The use of beauty products could improve their social status among their friends. Adolescent girls compare themselves to one

another and they feel that they need to be more attractive in order to fit in and be ‘popular’. Teenage girls take their appearance seriously as it paves the way for their social life. Given the evidence, it can be assumed that adolescent girls purchase expensive beauty products as they feel the need to fit in. The fear of being bullied also connects to why teenage girls want to fit in. They believe that if they don't have a high enough social status, they'll get bullied. As a result, teenage girls feel the need to blend into everyone else, so they don’t get picked or pointed out. Media and social standards have an enormous impact on how teenage girls act, buy, and consume. Adolescents are young, naive individuals that feel the need to fit in. This causes them to develop an over-consumptive behavior.

The use of makeup can help elevate an individual’s self-esteem for a short period of time, but in the long run, it can lead to mental and psychological effects. Marcos Veçoso, an expert in the pharmaceutical and health industry suggests that “[t]he application of makeup modifies the appearance, helping the individual to cope with self-image, emotions and mood. Makeup has been shown to provide supporting effects on the mental health of women affected by serious mental illnesses”(par. 6). When a young woman or adolescent girl tries makeup for the first time, it opens a new window. In the beginning, makeup can improve one's self-esteem and provide support for one's mental health. Makeup enhances an individual's facial features, and has an immediate positive impact on one's mood. This short bliss, unfortunately, does not last for long. Introducing makeup to non-frequent users can leave them feeling addicted and not being able to live without it. According to Anthonieta Looman Mafra, a specialist in psychological studies explains that “[a] recent experimental study compared women's self-perception without makeup and with professionally applied makeup and showed that made up women considered themselves more feminine, attractive, more satisfied with appearance” (par. 5). Women who use less makeup and spend a short amount of time on their appearance have a higher self-esteem while women who use more makeup and spend an extended amount of time on their appearance have a lower self-esteem (Mafra, par. 2). Teenage girls who feel the need to use more makeup are usually more insecure, they feel the need to cover their face because they are not pleased with how they look. Makeup and skincare use can become obsessive, in a short period of time, putting on makeup will feel like a necessity throughout the day. The overutilization of makeup comes along with a number of psychological and mental illnesses such as, but not limited to, depression and anxiety. Young women and teenagers start thinking they are truly ugly without makeup and descend into a dark hole which is difficult to climb out of. Beauty standards that the majority of girls follow can lead to eating disorders, social isolation, and much more. The evidence here leads one to infer that makeup is similar to a drug to teenage girls, they get addicted to it and feel like they can’t function without it. Regrettably, the after-effects are not pretty; older adolescents start losing money financially while younger adolescents suffer with self-confidence issues. Adolescents who feel comfortable with their body and have a higher self-esteem tend to spend less time scrolling on social media while others with low-self esteem spend more time on social media.

The promotion of cosmetic ingredients through social media marketing can create the societal pressure for young adolescent girls to sexualize themselves. According to Marta Evangelist, a writer who obtained her PhD and studied journaling justifies how people have "[m]ore empathy for young women today, they are such targets of commercialism and have so much added pressure in terms of what they are supposed to look like, and what they're supposed to say"(par. 5). The use of makeup has resulted in teenage girls feeling the need to essentially "sell themselves". In many advertising companies today, women are seen as objects to please the viewer's eyes. Young adolescent girls are under the impression that they have to cater to society's expectations as well. According to Dr. Kristine Blair, a specialist in social sciences, explains that "Through self-objectification, adolescents disconnect their bodies from their persons, and sometimes internalize this perspective and start evaluating and treating themselves as mere bodies, highlighting the visual assessment"(par. 26). Given this information, we can conclude that teenage girls apply makeup because of societal norms. In today's society, it is normalized for women to be seen as objects by the male gaze. Adolescents start seeing themselves as objects rather than young girls who are not expected to cater to society's expectations. Teenage girl's self-respect and dignity declines as society pressures them to look and present themselves the best they can. Contrary to the inclusivity marketed by lots of cosmetic companies, young girls work so hard to fit into an undefined standard rather than working with their unique features and finding a solution that works with them. Society views adolescents as objects in this world especially when they start to wear makeup. Society also views makeup as a cry for 'attention', so as soon as young girls start wearing makeup, their only purpose is for the male gaze.

In conclusion, makeup and skincare products can truly disrupt one's mental health by wanting to fit into the highest social circle or following all the latest trends. Initially, Makeup has a positive impact on an adolescent's mental health, but it goes downhill from there. Once teenage girls start comparing themselves to one another, they start to think they are ugly without makeup, and cannot live without it anymore. Not only can makeup give adolescence mental health issues, but it also deteriorates their self-worth. Teenage girls have started to view themselves as objects rather than human beings due to societal expectations. Therefore, makeup has an everlasting negative social impact on adolescent girls.

Works Cited

Blair, Kristine. "Selling the Self: Women and the Feminine Seduction of Advertising." Women And Language, vol. 17, no. 1, spring 1994, pp. 20+. Gale In Context: High School, link.gale.com/apps/doc/A16617838/SUIC?u=j043905002&sid=bookmark-SUIC&xid=f2e970b4. Accessed 9 Sept. 2024.

"Cosmetics - Courting Teenagers Can Create Customers for Life." Chain Drug Review, vol. 22, no. 5, 13 Mar. 2000, p. 33. Gale General OneFile Custom, link.gale.com/apps/doc/A61242951/GPS?u=j043905002&sid=bookmark-GPS&xid=05e0bc3e. Accessed 8 Sept. 2024.

Evangelista, Marta, et al. "Usage Patterns and Self-Esteem of Female Consumers of Antiaging Cosmetic Products." Cosmetics, vol. 9, no. 3, May 2022, p. NA. Gale Academic OneFile, dx.doi.org/10.3390/cosmetics9030049. Accessed 8 Sept. 2024.

Mafra, Anthonieta Looman, et al. "The Contrasting Effects of Body Image and Self-Esteem in the Makeup Usage." PLoS ONE, vol. 17, no. 3, 25 Mar. 2022, p. e0265197. Gale In Context: Science, dx.doi.org/10.1371/journal.pone.0265197. Accessed 8 Sept. 2024.

Putri, Sutinah, and Nabila. "Consumptive Behavior of Urban Adolescent Girls in Using Skincare Products." Journal of International Women's Studies, vol. 26, no. 4, July 2024, pp. COV1+. Gale Academic OneFile, link.gale.com/apps/doc/A803788454/AONE?u=j043905002&sid=bookmark-AONE&xid=756d0338. Accessed 8 Sept. 2024.

Veçoso, Marcos C., et al. “Effect of Makeup Use on Depressive Symptoms: An Open, Randomized and Controlled Trial.” Dermatology & Therapy, vol. 14, no. 3, Mar. 2024, pp. 777–91. EBSCOhost, https://doi.org/10.1007/s13555-024-01128-w.

The Delegitimizing Effect of Espionage on the Professions and Civil Society in Russia (1800-Present) By Sara Gupta

Abstract

From the Okhrana's networks of informants to the FSB's deployment of military-grade nerve agents, Russian intelligence has consistently weaponized the structures and professionals of civil society in service of state power. This paper examines how successive Russian spy agencies from the Tsarist secret police through the Cheka, NKVD, KGB, and FSB have actively corrupted the legitimacy of Russian professions including science and journalism. Drawing on the 2022 documentary *Navalny*, this paper analyzes the FSB's assassination attempt on opposition leader Alexei Navalny as a case study in how state violence compromises the integrity of medicine and chemistry. It then refers back to the 1940 NKVD assassination of Leon Trotsky, highlighting Stalin and Putin's similarities and tracing how the operation's years-long manipulation of personal trust degraded the norms of journalism, academia, and political organizing. Together, an analysis of these cases argues that Russian espionage does not merely threaten individuals but poisons the institutional fabric that makes free professional life possible. Without trust in public institutions, whether scientific or informational, Russians are forced to live in constant fear and distrust of one another, fragmenting communities along ethnic, religious and political lines and reducing economic productivity as corruption reduces motivation and increases the prevalence of brain drain through emigration.

Keywords: Vladimir Putin, political assassinations, secret services, FSB, Kremlin, Russia

Introduction

This paper examines how successive Russian spy agencies from the Tsarist secret police through the Cheka, NKVD, KGB, and FSB have actively corrupted the legitimacy of Russian professions including science and journalism. The paper first provides a background narrative on the history of Russian intelligence and its influence on Russian society. It highlights how Russia's agencies differ from those in the western world as Russia never developed competing powers that restricted absolute rule such as the church or the nobility long-term. Additionally, while the purpose of Western intelligence is to protect their own citizens from foreign operation tactics, Russian security agencies are often used against their own citizens more often than abroad or on foreigners. Later, it draws on the 2022 documentary *Navalny*, analyzing the FSB's assassination attempt on opposition leader Alexei Navalny as a case study in how state violence compromises the integrity of medicine and chemistry. It then compares these findings back to the 1940 NKVD assassination of Leon Trotsky, highlighting Stalin and Putin's similarities and tracing how the operation's years-long manipulation of personal trust degraded the norms of journalism, academia, and political organizing. Together, an analysis of these cases argues that Russian espionage does not merely threaten individuals but poisons the institutional fabric that makes free professional life possible. Without trust in public institutions, whether scientific or

informational, Russians are forced to live in constant fear and distrust of one another, fragmenting communities along ethnic, religious and political lines and reducing economic productivity as corruption reduces motivation and increases the prevalence of brain drain through emigration.

Spy Agencies Overview

This paper considers the significance of five of Russia's major intelligence and security agencies: the Okhrana (1881–1917), People's Commissariat for Internal Affairs (NKVD, 1934–1946), Committee for State Security (KGB, 1954–1991), Federal Security Service (FSB, 1991–Present), and Foreign Intelligence Service (SVR, 1991–Present). Led by monarchial, communist and pseudo-democratic governments, these agencies served to protect the power of the ruler. Although vastly different, they share important similarities not only in their methods but in their core actions and objectives. Unlike many nations, whose intelligence agencies are focused predominately on foreign threats, Russian agencies have repeatedly made their own population a primary subject of secret service activity (Andrew and Mitrokhin). Together, these organizations reflected the Russian state's fear of internal dissent, shaped political outcomes, and promoted the spread of ideological conformity (Hingley; Andrew and Mitrokhin).

The Okhrana was established in 1881 following the assassination of Tsar Alexander II. Its primary mission was to protect the Tsar, the royal family, and Russian autocracy (Hingley). The agency became known for bribing foreign journalists and for an elaborate system of double agents used to infiltrate and even capture revolutionary organizations (Fischer). When Russian revolutionaries began organizing in Western Europe, the Okhrana opened a Paris office in 1883—known as the *Zagranichnaia agentura*—that became the hub for monitoring émigré networks across Europe (Fischer). The office collaborated closely with French security services, sharing intelligence on revolutionary movements. Although the Okhrana was shut down by the Bolsheviks after the February 1917 Revolution and their secret archives were exposed, evidence suggests elements of its foreign operations persisted informally thereafter (Fischer).

After the Revolution, a succession of shorter-lived agencies including the Extraordinary Commission (Cheka) and the Joint State Political Directorate (OGPU) laid the groundwork for the NKVD. Translated as People's Commissariat for Internal Affairs, the NKVD (1934–1946) functioned as a state within a state under Joseph Stalin, created to suppress dissent both within the party and throughout Soviet society (Conquest). It administered the Gulag system of forced labor camps, sending millions to work in brutal conditions; hundreds of thousands were executed outright during the Great Terror of 1936–1938 (Conquest; Andrew and Mitrokhin).

The NKVD also carried out numerous political assassinations under Stalin's orders, reaching into the families of his closest collaborators as tools of intimidation (Conquest). After Stalin's death, the NKVD was demoted from a ministry to a committee under the Council of Ministers known as the KGB to prevent a single ruler from commanding the secret police, in the manner that Stalin had. The KGB employed propaganda, surveillance, blackmail, and censorship and turned its primary focus outward toward foreign threats (Andrew and Mitrokhin). The KGB

became notorious for assassinations using untraceable methods: poison gas designed to induce what appeared to be natural cardiac arrest ensured that many state-sponsored killings could never be conclusively attributed to Moscow (Plokhy). These operations were exposed, however, when KGB agent Bogdan Stashynsky defected to West Germany in 1961 after assassinating two Ukrainian nationalist leaders, Lev Rebet and Stepan Bandera, with a hydrogen-cyanide spray gun. His 1962 trial became one of the most publicized espionage cases of the Cold War (Plokhy).

After the Soviet collapse, the KGB was reorganized into the SVR (foreign intelligence) and, in 1995, the FSB (domestic security). President Boris Yeltsin feared that the KGB could overthrow the democratic government, so he fragmented the agency into smaller entities with more specialized purposes to dismantle their omnipresent power. Many former KGB officers continued to serve in the new structures, representing, in some respects, a return to the NKVD model: the FSB dwarfed its foreign counterpart and focused heavily on internal control (Andrew and Mitrokhin). The FSB gained prominence for suppressing Chechen rebels, which Vladimir Putin rebranded as counterterrorism to fall under the FSB's jurisdiction. Prominent critics of the government, including Alexander Litvinenko, were imprisoned, exiled, or killed under mysterious circumstances (Andrew and Mitrokhin). Most recently, opposition leader Alexei Navalny was poisoned with a Novichok-class nerve agent, an act traced by investigators to an FSB unit specializing in chemical and biological weapons (Bellingcat, "FSB Team").

The rise of Vladimir Putin is inseparable from this institutional history. Putin served sixteen years as a KGB officer before entering politics as a protégé of St. Petersburg mayor Anatoly Sobchak (Gessen). He was appointed FSB director by Boris Yeltsin in July 1998 before assuming the presidency in 1999, shaping his governance with deeply ingrained Soviet security instincts (Gessen).

Russian security agencies aren't just governed by the state, rather they are owned so there is no private property or law standing between the ruler and absolute control. Even at the height of divine-right monarchies in France or England, there were always competing centers of power that constricted absolute rule from the church or nobility. However, Russia never developed these competing powers in the long-term. Tracing back to Mongol rule, Russia was isolated from the feudal and legal traditions of Western Europe for centuries (Pipes, *Old Regime*). Russian reformist rulers such as Peter and Catherine the Great pursued westernization through absolutism rather than dismantling the patrimonial structure itself, furthering the system of personal rule, thus failing to institute long-lasting dramatic change (Pipes, *Bolshevik Regime*).

Comparative Security Services

Similar to the FSB and SVR, American and British intelligence agencies are legally separated to protect interests abroad such as the Central Intelligence Agency (CIA) and Military Intelligence (MI6) and domestically, with the Federal Bureau of Investigation (FBI) and Military Intelligence (MI5). The purpose of the Western intelligence split is to protect citizens from foreign operation tactics that are governed by less restricting laws. However, Russian security agencies are not restricted by that legal wall. There is no independent judiciary, free press or

legislative body oversight on the FSB or SVR whereas the FBI and CIA are monitored by the court, Congress and Parliament among others. As a result, Western agencies are formally unable to use sabotage or assassination tactics domestically whereas Russian security forces solely operate on those, domestically and abroad.

Historically, Russian agencies have focused on protecting the power of the leader and in an effort to do so have terrorized their own citizens far more than threats abroad. In 1975 the CIA and FBI were accused of illegally surveilling thousands of American citizens, concocting assassination plots against foreign leaders like Fidel Castro and illegal human experimentation. This was unveiled in Seymour Hersh's *New York Times* article leading to the creation of the Senate Church Committee to investigate the illegal activities of these agencies (Hersh; United States Senate). Rather than the government denial and press control Russian agencies often react with, the Senate created the Foreign Intelligence Surveillance Act (FISA) in 1978 that requires security agencies to ask the judiciary for approval on wiretaps and searches, banned foreign political leader assassinations and created permanent oversight committees in congress (U.S. Senate, n.d.). This added structure limited the power of these agencies to protect American citizens. On the other hand, Russian security agencies continuously deny all wrongdoing even after undeniable evidence is presented and have failed to reform their security agencies to protect its citizens rather than solely its leader. For example, Alexander Litvenko, a former FSB officer that had exposed government corruption publicly, was poisoned with radioactive polonium in London in 2006. The 2016 UK Public Inquiry concluded that Putin most likely approved the assassination plot and the 2021 European Court ruled Russia responsible for the murder (Owen; European Court of Human Rights). Rather than punishing the two agents responsible, Putin elected one of the agents into the Russian parliament. While the United States responded to public criticism constructively and admitted to its flaws, the Russian government instead killed the criticizer and denied its involvement. Since the Russian government, including its security agencies, are unrestricted by checks and balances as they are controlled by the sole leader entirely, they are used to protect the personal interests of the ruler rather than the population unlike western security agencies.

Alexei Navalny

Alexei Navalny established himself as a prominent opponent of the Russian government in 2011, when he founded the Anti-Corruption Foundation (FBK), which used private donations to investigate and publicize the corruption of senior Russian officials (Dawisha). His YouTube channel amassed millions of subscribers. The government responded with repeated court convictions, yet Navalny still attempted to run for mayor of Moscow in 2013 and for the presidency in 2018. Putin barred him from the ballot and sought to delegitimize his work through state propaganda including branding him as an asset for foreign intelligence betraying his country (Horncastle and MacLennan)

On August 20, 2020, FSB agents poisoned Navalny during a flight from Tomsk to Moscow using a Novichok nerve agent (Roher). The pilot made an emergency landing in Omsk,

where doctors—later revealed to be on the FSB's payroll—blocked Navalny's family from visiting and worked to eliminate traces of the toxin from his clothing and body (Bellingcat, "FSB Team"). This corruption of the medical profession carries consequences far beyond one patient. When citizens cannot trust that a hospital's first obligation is to their survival rather than to the state, the entire social contract underpinning healthcare collapses. Medicine depends on the presumption of neutrality—that a doctor's loyalty is to the patient on the table, not to whoever controls the building and the money in his pocket. The FSB's use of physicians as instruments of concealment dismantles that presumption entirely. The doctors continued offering vague statements to Navalny's wife until international pressure compelled Putin to allow his transfer to Germany (Roher).

After recovering in Germany, Navalny collaborated with Bellingcat, an open-source investigative collective, to identify the FSB operatives involved in his poisoning. Posing as a senior government official, he telephoned Konstantin Kudryavtsev, one of the chemical weapons specialists involved in the operation. Kudryavtsev inadvertently confirmed the details of the plot and attributed Navalny's survival to the pilot's rapid emergency landing (Bellingcat, "If It Hadn't Been"). The investigation revealed that the chemists worked in a clandestine FSB unit conducting state-funded chemical weapons research—research directed at harming citizens rather than advancing public science (Bellingcat, "FSB Team"). This subversion of scientific institutions is itself a form of institutional damage: when government funds channel chemistry expertise into assassination programs, it degrades the credibility and independence of Russian science as a whole.

The international response was swift but limited in consequence. Germany, the United Kingdom, and the European Union imposed targeted sanctions on senior FSB officials and condemned the use of a chemical weapon against a civilian as a violation of the Chemical Weapons Convention (Bellingcat, "FSB Team"). Russia denied all involvement, and no criminal accountability followed. This pattern—documented atrocity, international condemnation, state denial, and impunity—is part of the operation's design. Novichok is exclusively linked to Russian state laboratories (OPCW); its use constitutes a deliberate signal to potential dissidents: the state can reach you, it will deny it, and nothing will happen.

Navalny returned to Russia in January 2021, was detained immediately upon landing at Sheremetyevo Airport, and was ultimately sentenced to nineteen years in a maximum-security penal colony. On February 16, 2024, Russian prison authorities announced that Navalny had died in the Arctic penal colony IK-6, known as "Polar Wolf," at the age of forty-seven. The official explanation of "natural causes" was rejected by Western governments and human rights organizations. For the international community, his death confirmed what the 2020 poisoning had already demonstrated: the FSB operates as an instrument of political murder, and the professionals it coopts—doctors, chemists, prison officials—become complicit in a system that treats human life as a variable to be managed by the state.

Erosion of Russian Scientific Institutions

A 2016 Levada Center Survey found that only 2% of Russians were proud of their healthcare system (qtd. in Newsweek). Russia's constitution guarantees free healthcare to all its citizens. Doctors may therefore be considered the backbone of society to ensure a healthy and happy population. However, Russian doctors have been used for the opposite objective in order to further assert that no citizen has power over Putin's decisions as he controls every aspect of Russian society. A Russian legal NGO known as Zona Prava stated that the penitentiary's medical infrastructure has been dismantled, affirming that the lack of medical care is not accidental, but rather another demonstration of power (Novaya Gazeta Europe). State dissidents in jail are not only physically tortured in secret; rather, they are tortured and then left to suffer with debilitating medical conditions until death. For example, Sergei Magnitsky was a Russian tax lawyer who exposed a 230-million-dollar fraud committed by the Interior Ministry. He was imprisoned by those same officials and left to suffer from pancreatitis and gallstones with no medical treatment. The European Court of Human Rights ruled that his right to life was violated, and Russia's Presidential Human Rights Council agreed that he had been beaten by guards and denied treatment (Open Society Justice Initiative). Concurrently, Russia's rapid population decrease can also be attributed at least in part to the lack of adequate healthcare with the birth rate at 1.37, far below the 2.1 replacement rate (The Moscow Times). Mass emigration, especially of scientists and doctors, also contributes to the declining replacement rate to prevent engaging themselves in corrupt practices and receiving better opportunities abroad.

Leon Trotsky

The methods Putin has normalized were practiced in Russia long before his rise, most systematically under Joseph Stalin. Stalin did not tolerate political competition and was especially threatened by Leon Trotsky, Lenin's closest comrade in the 1905 and 1917 revolutions. After Lenin's death, Trotsky was Stalin's principal rival for leadership of the party. Stalin prevailed, marginalized Trotsky, and finally exiled him in 1929 (Service). His followers, the Trotskyists, were subjected to relentless persecution inside the USSR. Yet exile alone was not enough. Stalin ordered Trotsky's assassination, which was carried out by an embedded NKVD agent in Mexico City in 1940 (Service). The message was unmistakable: no amount of distance provided safety from Soviet reach.

Rather than sending an agent directly, the NKVD ran a years-long infiltration of Trotsky's inner circle. They planted Ramón Mercader, a Spanish communist recruited by NKVD officer Nahum Eitingon, who cultivated a romantic relationship with one of Trotsky's secretaries, Sylvia Ageloff, to gain access to his household in Coyoacán, Mexico City (Service; Andrew and Mitrokhin). Mercader spent months building trust, presenting himself as a mild-mannered idealist. On August 20, 1940, invited into Trotsky's study on the pretext of reviewing an article, Mercader struck him with an ice axe (Service). Trotsky died the following day. Mercader served nearly twenty years in a Mexican prison, refused throughout to identify his handlers, and was secretly awarded the Hero of the Soviet Union honor upon his return to Moscow—while the USSR maintained for decades that it had no involvement in the assassination (Andrew and

Mitrokhin). The operation's success depended entirely on the corruption of personal trust, a tactic Russian intelligence has returned to repeatedly.

The professional and intellectual consequences of Trotsky's murder were profound and lasting. The assassination sent an unambiguous message to the global community of journalists, academics, and political organizers who had offered him refuge or published his ideas: association with the wrong person could make you a target, and no geographical distance guaranteed safety. Intellectuals who might have written critically about Stalin weighed whether their byline could endanger colleagues and friends. Political organizations that hosted Trotskyist speakers became alert to the possibility of infiltration. The NKVD had demonstrated that the boundaries between personal relationships and state intelligence operations were nonexistent: a lover, a friend, or a trusted colleague could be a state agent, and the intimacy of private life offered no protection. The assassination did not merely eliminate one man; it contaminated the social fabric of dissident intellectual life, making trust itself a casualty of Soviet statecraft (Andrew & Mitrokhin, 1999). The assassination of Trotsky continued to influence future generations of Russians, as demonstrated in the case of Navalny, in which similar to Stalin's fear of Trotsky, Putin felt threatened by Navalny's influence and assassinated him; both in an effort to assert authoritarian dominance and instigate fear into the Russian population.

Conclusion

Russia has one of the lowest institutional trust levels in the world, lower than far less stable states like Colombia and Nigeria (Shlapentokh). Russian professionals are forced to declare loyalty to the government's desires over their profession, collapsing societal trust entirely. This suggests that the erosion of trust is systemic rather than focused on a handful of isolated cases. Russian espionage and state security operations are not merely a history of individual crimes, they are an enforcement arm of a historically rooted political structure. With unlimited power for the ruler, no independent institutions to constrain it and personal loyalty substituting for the rule of law, rather than security agencies providing a sense of safety, they are used to incite fear. Trotsky's assassination demonstrated that no one is safe, as even years of friendship can become irrelevant when authority is at stake. The attempted assassination of Alexei Navalny used the same method but in a modernized context, using science as an instrument of the state. The Magnitsky case showed that this method can be applied to any level of dissidence, even those that are not high profile. Together these cases demonstrate that any profession or relationship that stands between the state and its target can be destroyed or corrupted when the state requires it. But this conclusion does not only apply to the assassination of dissidents. Instead, these are symptoms of a state built to require rule by personal loyalty rather than law. Diagnosing that root cause may never be possible but it is far more important than treating each new case as a shocking exception.

Works Cited

Andrew, C., and V. Mitrokhin. The Sword and the Shield: The Mitrokhin Archive and the Secret History of the KGB. Basic Books, 1999.

Bellingcat. "FSB Team of Chemical Weapon Experts Implicated in Alexey Navalny Novichok Poisoning." Bellingcat, 14 Dec. 2020, https://www.bellingcat.com/news/uk-and-europe/2020/12/14/fsb-team-of-chemical-weapon-experts-implicated-in-alexey-navalny-novichok-poisoning/.

Bellingcat. "'If It Hadn't Been for the Prompt Work of the Medics': FSB Officer Inadvertently Confesses Murder Plot to Navalny." Bellingcat, 21 Dec. 2020, https://www.bellingcat.com/news/uk-and-europe/2020/12/21/if-it-hadnt-been-for-the-prompt-work-of-the-medics-fsb-officer-inadvertently-confesses-murder-plot-to-navalny/.

Conquest, Robert. Inside Stalin's Secret Police: NKVD Politics, 1936–1939. Hoover Institution Press, 1985.

Dawisha, Karen. Putin's Kleptocracy: Who Owns Russia? Simon & Schuster, 2014.

European Court of Human Rights. Carter v. Russia. Application no. 20914/07, 21 Sept. 2021, https://hudoc.echr.coe.int/eng?i=001-211972.

Fischer, Benjamin B., editor. Okhrana: The Paris Operations of the Russian Imperial Police. Central Intelligence Agency Center for the Study of Intelligence, 1997.

Gessen, Masha. The Man Without a Face: The Unlikely Rise of Vladimir Putin. Riverhead Books, 2012.

Hersh, Seymour M. "Huge C.I.A. Operation Reported in U.S. Against Antiwar Forces, Other Dissidents in Nixon Years." The New York Times, 22 Dec. 1974.

Hingley, Ronald. The Russian Secret Police: Muscovite, Imperial Russian, and Soviet Political Security Operations. Simon & Schuster, 1970.

Horncastle, James, and Jonathan A. MacLennan. "Western Leaders Threaten to Undermine Navalny's Legacy in Russia." The Conversation, 21 Feb. 2024, https://theconversation.com/western-leaders-threaten-to-undermine-navalnys-legacy-in-russia-223965.

Newsweek. "Russia's Bad Health Care System Is Getting Worse." Newsweek, 26 Nov. 2016, https://www.newsweek.com/2016/12/02/dire-russia-health-care-523380.html.

Novaya Gazeta Europe. "Due Negligence: Political Prisoners in Russia Call for Prisoner Exchanges and Urgent Medical Aid Amid a Growing Humanitarian Crisis." Novaya Gazeta Europe, 17 July 2025, https://novayagazeta.eu/articles/2025/07/17/due-negligence-en.

Open Society Justice Initiative. "European Court of Human Rights Finds Russia Responsible for Death of Whistleblower Sergei Magnitsky." Open Society Foundations, 27 Aug. 2019, https://www.justiceinitiative.org/newsroom/european-court-of-human-rights-finds-russia-responsible-for-death-of-whistleblower-sergei-magnitsky.

Organisation for the Prohibition of Chemical Weapons. “Note by the Technical Secretariat: Addendum, Request for Technical Assistance by Germany.” OPCW, 10 Dec. 2021, https://www.opcw.org/sites/default/files/documents/2021/12/c25nat116(e).pdf.

Owen, Robert. The Litvinenko Inquiry: Report into the Death of Alexander Litvinenko. UK Government, 2016.

Pipes, Richard. Russia Under the Old Regime. Charles Scribner’s Sons, 1974.

Pipes, Richard. Russia Under the Bolshevik Regime. Alfred A. Knopf, 1994.

Plokhy, Serhii. The Man with the Poison Gun: A Cold War Spy Story. Basic Books, 2016.

Roher, Daniel, director. Navalny. HBO Max; CNN Films, 2022.

Service, Robert. Trotsky: A Biography. Belknap Press of Harvard University Press, 2009.

Shlapentokh, Vladimir. “Trust in Public Institutions in Russia: The Lowest in the World.” Communist and Post-Communist Studies, vol. 39, no. 2, 2006, pp. 153–174.

The Moscow Times. “Despite Costly Programs and an Intensified Family Values Campaign, Russian Women Aren’t Having More Children.” The Moscow Times, 30 Oct. 2025, https://www.themoscowtimes.com/2025/10/30/despite-costly-programs-and-an-intensified-family-values-campaign-russian-women-arent-having-more-children-a90997.

United States Senate. “Church Committee: Senate Select Committee to Study Governmental Operations with Respect to Intelligence Activities.” United States Senate, https://www.senate.gov/about/powers-procedures/investigations/church-committee.htm.

Evaluating the Conditions for Mexico's 2024 Judicial Reforms
By Sam Yuyang Zhai

1. Introduction

The Mexican Judicial system underwent significant change in 2025, with the implementation of the first wave of judicial elections under the contentious 2024 judicial reforms. The reforms serve as a fundamental change to how the judiciary in Mexico functions, through the popular election of judges at all levels of the judiciary, purporting to 'democratise' the judicial process and address the long-standing issues plaguing the judiciary (Berg and Hidalgo). Though these reforms were enacted by current President Claudia Sheinbaum, they were first proposed by former President Andrés Manuel López Obrador (AMLO), with both stemming from the Morena Party (D. Shirk). They further received significant and unilateral pushback from international communities, such as the Center for Strategic and International Studies (Berg and Hidalgo), academics on the academic forum Verfassungsblog (Alberto and Eugenio), the Human Rights Watch, the U.S. Embassy and Consulates in Mexico (U.S. Mission to Mexico), as well as news journals such as The Economist. Yet, despite the criticism, an interesting point to note is the acknowledgement of those criticising the reforms, such as The Economist, that "Mexico's justice system does need an overhaul".

Despite this international pushback, the reforms largely went through the democratic process unopposed. Beyond votes in the national congress and state legislatures ratifying it, the reforms were in contention during an election year in Mexico, 2024, yet still passed. This suggests that, despite the condemnation from international media, foreign governments, and academics, the Mexican public largely did not oppose the reforms.[3] Thus, it is this phenomenon that I wish to investigate, focusing on the grievances and reasoning of the general public, and thus exploring the sources of discontent which allowed these contentious judicial reforms to pass, broken down into analytically distinct sub-sections. Though these sources of discontent may be legitimate, that does not mean that the judicial reforms arising from them are legitimate. The suffering of everyday Mexicans in accessing justice may be an inequality, for example, that is distinct from the proposed solution of popularly elected judges.

Thus, this essay will examine the sources of discontent which prevented opposition to Morena's judicial reforms, considering them from an apolitical perspective. It is not a commentary on the reforms' validity, effectiveness, or legality. Instead, it considers the conditions AMLO found himself in, which provided suitable ground for reforms, and his own gripes with the judiciary, which catalysed the messaging campaign on the necessity of reform. This paper is broken down into parts, which will logically explore the progression from discontent to reform. In part 2, popular grievances with the judiciary, of which there are many across various lines, will be explored and further broken down into analytically distinct subsections. In part 3, the judiciary's unwillingness to respond to these grievances establishes the

[3] More accurately, the public may have neither opposed nor supported these reforms. As is the case during elections, many important issues are raised and perhaps judicial reform was not important enough of an issue for the public to significantly influence the way they vote.

necessary conditions for judicial reform by the executive to occur. In part 4, clashes between the executive and the judiciary are considered to establish the conditions for part 5, which connects popular judicial grievances with the reforms and shows how AMLO was able to leverage these grievances to minimise opposition to his reform. The final part, part 5, concludes the paper and summarises how historical discontent with the judiciary allowed contentious reforms to pass without significant opposition.

2. Popular Grievances with the Judiciary

Fundamentally, the enabling factor which allowed MORENA to successfully argue for the necessity of reform is an existing and flawed judicial system which opened itself up to grievances by the public. Notably, in terms of corruption, nepotism, discrimination, impunity, inefficiency, and inflated salaries. These long-standing flaws established a foundation of distrust of the Mexican judicial system, allowing attempts at reform, regardless of their contents, to appeal to a public desperate for change.

2.1 Corruption

Corruption within the Mexican judicial system is rampant, resulting in an ineffective judiciary and poor public perception due to numerous high-profile cases. One such example is the repeated failure of the Court to adequately investigate and prosecute those within the political system accused of corruption. Though the judiciary received 391 complaints of corruption and nepotism in 2023, zero judges were dismissed as a result of these complaints (Spitalier). In addition, key positions within the judicial system are known to be awarded to those who, through being well-connected, can purchase answers to examinations in advance, which themselves are an outdated means of assessment (Spitalier).

The reality of a corrupt judicial system holds further implications for public perception. In a 2023 National Survey on Victimisation and Perception of Public Safety (ENVIPE), judges were perceived as the second-most corrupt authority in the country, behind only public transit police (Juanola), with 64.6% of respondents (aged 18 and above) considering judges corrupt in the 2024 rendition of the study (INEGI, Encuesta Nacional de Victimización Y Percepción Sobre Seguridad Pública 2025. ENVIPE. Cuestionario Principal). As seen, significant corruption exists within the Mexican judicial system, which largely underpinned AMLO's contentious judicial reforms. Corruption is also rife both within the judicial system and in its process of recruitment, wherein the entrance examinations used before the judicial reforms could be easily cheated with paid-for answers.

2.2 Widespread Nepotism

Nepotism is a further widespread issue which brings disrepute to the judicial system. On a National level, a 2018 study found that 51% of federal judges and magistrates had at least one relative working in the judicial system (Ríos). Another study of 1031 federal judges/magistrates in 2023 showed that 501 (48.6%) have relatives in the judiciary (Campuzano). Though this is a

slight decrease from the 51% in the 2018 report, the more recent study suggested that 112 judges/magistrates (10.9%) have allegedly used their power to obtain jobs for their partners, 180 (17.5%) for their children, 136 (13.2%) for their siblings, and 27 (2.62%) for their parents (Campuzano). Further, many working administrative roles in the courts (secretaries, clerks, etc.) have relatives in other circuits and influence appointments, yet they are not liable for any offence. Quantitatively, on average, in 2022, each person in the justice system had 1.6 relatives in the system, rising to 2.9, excluding those who had declared no relatives working in the system (Órgano de Administración Judicial). This figure is a decrease from the 2021 average of 1.9 relatives per person, yet remains high and implies a high level of nepotism (Órgano de Administración Judicial). Moreover, those in higher positions (i.e., magistrates) have an average of 4 relatives in the system, compared to 1 among technical services personnel. This issue extends significantly to a local level as well. In Aguascalientes, 81% of judges and magistrates had their relatives employed alongside them (Durán et al.), while in Colima, despite having the smallest number of employees in the judicial system, 68.34% of its 199 employees had relatives in the judicial system (LA OCTAVA).

These statistics clearly demonstrate the presence of nepotism in the Mexican judiciary, translating to negative optics, as extensive interconnectedness suggests a judicial system rife with nepotism, where connections matter more than merit. This belief is seen in a World Justice Project (WJP) study from 2019 of experts and the general public, from which 68% believed the decisive factor in hiring and promotion at federal courts and tribunals was relatives in the judiciary, while only 37% considered merit as the most decisive factor (Ríos). A further 65% also agreed that the impartiality of judicial decisions is compromised when hiring and promotions are not merit-based (Ríos).

High-profile cases of nepotism further worsen this perception, as they only serve to reinforce the perceptions of nepotism within the judicial system. Several Supreme Court of Justice of the Nation (SCJN) judges have deep familial ties within the judicial and political system. Eva Verónica de Gyvés Zárate, a member of the Judicial Discipline Tribunal, has a husband who is the President of the Superior Court of Justice of Mexico City, and several other relatives (brother/nephews) in high-level judicial and governmental roles (Gómez-Robledo et al.). Similarly, Lenia Batres Guadarrama, a minister for the SCJN and a member of the Morena party, has six relatives in public positions, the highest of any member in the SCJN. Among these, several hold positions of office in government ministries, whilst her ex-husband is the head of the Attorney General's Office in Morelos (Gómez-Robledo et al.).

Even beyond cases of nepotism in appointments, the judicial system is rife with conflicts of interest which tarnish its reputation. One such example is that of Yasmin Esquivel Mossa, a minister of the SCJN who does not have any relatives in government or the judicial system, but whose husband's engineering firm received nine contracts worth 108.9 million pesos ($6 m USD) from the Mexican City Metro during the Morena administrations (Gómez-Robledo et al.). It seems counterintuitive for the Mexican public to support a Morena complicit in corruption with reforming the judiciary. Yet, the issue of corruption pervades across Mexican society, with

Transparency International's Corruption Perception Index ranking Mexico a 27/100, lower than the Americas average of 42 and ranking 141/182 countries (Vizcarra-Mendez). Considering the perspective of the Mexican populace who supported these reforms, this behaviour suggests that faults with the judiciary are so severe that, regardless of who, any reform becomes a good reform. These cases of seemingly blatant corruption tarnish the judiciary's reputation and its impartiality. Nepotism is rampant in the Mexican judicial system, at all levels, from local circuits up to the SCJN, albeit to differing scales and natures. Large portions of the system appear to be influenced more by connections and familial ties than merit, with many prominent cases of senior members of the justice system having familial ties to the judicial system or to the executive.

2.3 Impunity

Issues with impunity have long plagued the judicial system, with this failure to execute its most basic task of bringing justice having a tangible and direct impact on public opinion.

94.8% of violent crimes committed go unpunished in Mexico (Juanola), with only 10% of investigations opened up by prosecutors making it before a judge (Mattiace). Considering that only 10% of crimes are even reported in the first place (Juanola), this suggests a high level of impunity within the Mexican legal system. All in all, 92.9% of crime goes unreported or uninvestigated, highlighting the lack of trust in the Mexican judicial system, prosecutors, and the police (INEGI, Encuesta Nacional de Victimización Y Percepción Sobre Seguridad Pública 2025. ENVIPE. Cuestionario Principal). These institutions function with separate missions and are distinct; however, much of the Mexican public and studies do not distinguish between them. Rather, the National Institute of Statistics and Geography (INEGI)'s National Survey of Victimisation and Perception of Public Safety (ENVIPE) survey aggregates these various institutions into one umbrella of "public safety" (INEGI, Encuesta Nacional de Victimización Y Percepción Sobre Seguridad Pública 2025. ENVIPE. Cuestionario Principal). This is not the norm in most countries, where there is a clear distinction between the judiciary and public security institutions such as the Police. Perhaps the rationale for such aggregation in Mexico is that the populace does not view these institutions as radically different and sees them as equally inept. In essence, the behaviour and practices within these institutions are neither distinct nor effective enough for the public to differentiate. Corruption and failures, be it under the purview of the police, prosecutors, or judges, are viewed as the failure of a corrupt system as a whole. Worsening this situation, impunity within the justice system is experienced disproportionately depending on the crime, with crimes such as family violence, disappearance, and extortion having impunity rates above the national average (Contreras). Injustice is compounded by the tendency of the judicial system to infringe upon the rights of private citizens, thereby further exacerbating public grievances with the courts. The most frequently violated such right is the presumption of innocence, wherein 57% of those prosecuted were sent to preventive detention in 2022, the majority (53%) being sent there through unofficial means (Contreras). Overall, only 4 in 10 cases undergo the proper risk assessments to determine whether such preventive

imprisonment is necessary (Contreras). These issues of impunity have directly translated to public opinion, with a 2023 Perceptions of Impunity Study finding that >60% believed those responsible for crime are never or seldom brought before a judge, with 85% believing impunity has either stayed the same or worsened since 2022 (Impunidad Cero). Worsening this perception is also the noteworthy belief (held by 86% of those surveyed) that all crimes should be punished by prison, perhaps exacerbating perceived impunity as minor crimes with sentences of community service, fines, or other means would be seen as an insufficient penalty, even if adequate due process has been carried out (Impunidad Cero).

The issue of impunity within the judicial system directly contributed to its inability to deliver justice, its principal purpose, and thereby presents the system as one that requires reform.

2.4 Discrimination

Beyond the issue of unreported and uninvestigated or underinvestigated crime, and hence a subsequent lack of justice, the judicial system suffers from impunity because of failures of discrimination, both within the judiciary against minorities and by the judiciary against its constituency.

The judicial system is inherently prejudiced against linguistic minorities within Mexico, as the system lacks expert translators and ignores indigenous customs, laws, and languages. For example, 60% of indigenous prisoners in Oaxaca did not have access to an interpreter, whilst of those 60%, a further 46% could not understand the information they were given (Sarabia). Thus, a structural failure is present within the Mexican judicial system in that a non-insignificant minority of the population is unable to seek justice due to a basic language barrier (López Bárcenas).

Beyond the issue of language, the judicial system's inefficiencies are worsened for indigenous minorities. Broadly speaking, pre-trial and arbitrary detention, widespread within Mexico, are amplified amongst the indigenous population. 37% of incarcerated people in 2023 had not been accused of any crime, whilst 20% of those in pretrial detention had been held for longer than the legally permissible 2 years (Hassan). Indigenous persons face arbitrary detention and extended sentences even beyond the national average. One UN report by a Special Rapporteur highlights the unjust sentences and pre-trial detention of 10 Indigenous Human Rights Defenders, whose collective sentences amount to nearly 300 years in prison, with one defender having been detained for 14 years without sentencing (OHCHR). Cases of indigenous persons facing discrimination or unjust situations are common, such as that of an indigenous Guatemalan who spent 7 years in detention without trial until a court order released her back to her homeland (AP). The Mexican judicial system thus discriminates against minorities, calling into question the fairness and equity of a judiciary which treats those it oversees with different standards.

The Amnesty and Early Release Law (2020), enacted in April 2020 during AMLO's tenure as President, is intended to grant amnesty to those who have committed less violent crimes and are facing adversity, such as being unable to afford a lawyer or translator, and early

release to those who meet specified requirements (MND Staff). However, as Open Society Foundations asserts, the application of this law has not been faithful (Sarabia). Out of the 2685 prisoners released under the law from 2020 to 2022, only 136 were released on grounds of amnesty; 66 in poverty, 42 women, 21 indigenous, 2 with permanent disabilities, 4 who faced intimidation, and 1 who faced discrimination (MND Staff). Beyond considering the relatively small-scale nature of the Amnesty Law compared to the at-large issue of discrimination against indigenous persons in the judiciary, the law itself introduces a dilemma of fairness. In pursuit of amnesty for those believed to have been treated unjustly by the system, it instead creates an opportunity for unequal treatment between those who do receive amnesty, be it out of good fortune or otherwise, and those who do not, both those who do not meet the criteria or are not arbitrarily considered for amnesty. The law, though potentially good-intentioned, fails to address the root cause of discrimination within the judiciary, instead opting to provide an after-the-fact remuneration (amnesty), thus leaving the issue of discrimination unaddressed.

The judiciary also systemically disadvantages those of lower socioeconomic status. Access to justice is already restricted by an overworked and underfunded public defence system, with attorneys often representing several clients simultaneously, thereby lowering the quality of the defence and establishing a financial barrier towards achieving justice, wherein hefty legal fees block out the majority of Mexico's population (Kossick). In addition, where the judiciary can be reached, justice is often not the achieved outcome as disparate sentences are often handed out by Mexico's judicial system, which tends to over-punish petty crimes, whilst letting wealthy or powerful individuals who have committed serious crimes walk away scot-free (Kossick). Also, only 10% of cases opened by prosecutors appear before a judge (Mattiace). Of this 10%, the empirical evidence used in prosecution is often flimsy, while statements attained through threat and torture, with the Federal Prosecutor's Office receiving almost 2000 reports of torture in 2015 and INEGI reporting nearly ⅔ of incarcerated persons reporting physical abuse by the authorities (Wilkinson). Though there are more issues with prosecutors and the policing system, the impact of these failures on achieving justice is one that affects the judiciary as well, with these failures exacerbating public grievances with the judiciary and justice system as a whole.

Moreover, the underrepresentation of various social groups and gender disparities within the judiciary further work to present the judiciary as an elitist institution, eroding public trust. Gender disparities in the judicial process further worsen existing grievances with the judicial system by exacerbating the sense of inequality. Women are generally under-represented in the Mexican judicial system, with 22% of magistrates and 36% of judges in the Federal Judiciary being women in 2024 (International Bar Association Legal Policy & Research Unit). Though an improvement from the 2017 numbers of 19% and 22%, women are still underrepresented compared to men (International Bar Association Legal Policy & Research Unit). The presence of nepotism within the judicial system further means that the system is dominated by specific segments of society, thus being unable to adequately represent all segments of Mexican society. Overall, the underrepresentation of minorities and segments of society within the judiciary works to exacerbate public grievances with the system by portraying the system as disconnected and

out of touch with reality. Particularly, presenting the judiciary as a system that does not understand its participants, as even the judiciary's internal composition is skewed to suggest so (MND Staff).

Overall, discrimination within the judiciary and by the judiciary exacerbates the perceived inequity of the judiciary, making the institution unable to fairly serve all Mexicans equally. The unequal delivery of justice presents a disparity in rights between those able to and unable to access the justice system, thus leaving a majority of the population, to whom justice is inaccessible, discontented and desiring change. Discrimination within the judiciary may be inextricably linked to the discrimination experienced by those seeking justice, as a biased system will inevitably create biased results. Though these forms of discrimination are different, their influence on public perception of the judiciary is overwhelmingly negative. The processes from which these negative conclusions arise are analytically distinct, even if the ultimate impact is similar. Regardless, the discrimination in and by the judiciary translates to a direct public grievance.

2.5 Inefficiency in Resolving Cases

Beyond issues with a lack of justice being served for reported cases and underreporting, inefficiencies within the existing system further exacerbate public grievance.

On an individual level, federal judges resolved an average of 895 cases per year in 2023, yet a significant backlog remains (SCJN). In 2022, out of 1,300,000 cases introduced into the judicial system, 525,000 cases spilt over into 2023 (40%) (Copeland). In addition, a further source of grievance is the slow turnaround times for active cases. Whilst labour legislation stipulates a maximum lawsuit duration of 100 days, typical cases take over three years to settle (Brassiolo et al.). These inefficiencies, beyond their allusions to an incapable or underfunded judicial system, further serve to diminish public trust in a system which already held limited public support. Considering the small percentage of cases that are brought before judges, it is further discouraging for the populace to consider that even this small percentage still results in long backlogs and inefficiency.

These inefficiencies directly present the judicial system and its members as incompetent, diminishing the trustworthiness of the system, and worsening already poor perceptions of the judiciary. Tangible delays and the cost of time are easily and directly felt by the population, serving as concrete evidence of the judiciary's need for reform.

2.6 Inflated Salaries of Judicial Employees

Additionally, scandals surrounding the inflated salaries of judicial employees further served to put the judicial system in bad favour with the general public.

One such scandal broke out in 2018, less than a month into AMLO's Presidency. In December 2018, as AMLO was attempting to reform judicial salaries, greater public scrutiny was placed on the existing salaries of members of the judicial system. At a time when the median annual income in Mexico was around $14,000 USD (GlobalData) (240,000 pesos), or 20,000

pesos a month, ministers of the SCJN and the Council of the Federal Judiciary and Electoral Court had wages exceeding 550,000 pesos per month (Becerril), 27.5x the median, and 275x the minimum wage of 2,000 pesos a month (Country Economy). Such generous compensation coming out of the public's coffers presents an image of a judicial system that, in theory, serves the people, whilst in practice maximising personal gain at the cost of the public interest in a strong and fair judicial system. While 52,000,000 (39.3% of the population) (Statista) in Mexico were living in poverty, members of the judicial system were earning significantly inflated salaries out of the public budget (Hernandez). Juxtaposing this with other constituencies, the Chief Justice of Singapore, a country known for its high government salaries, receives an annual salary of S$347,400 (~$274,000 USD) (Singapore Statutes Online). This value represents about 5x the median salary of S$69,300 (~$54,000 USD) (StashAway). In the US, the median salary is ~$64,500 USD in Q1 2026 (Bureau of Labor Statistics). In contrast, the Chief Justice of the Supreme Court earns an annual salary of $320,700, which is approximately 5x the median salary (National Taxpayers Union Foundation). As seen, the 27.5x multiplier on median salary is an abnormality of the Mexican judicial system compared with those of other countries, and thus suggests the judiciary is taking an inflated salary.

The conclusion derived from these inflated salaries is that the judiciary, already an institution inefficient and incompetent, is one that aims to maximise its self-interest, even if doing so comes at the cost of the Mexican public.

3. The Judiciary's Unwillingness to Change

Popular grievances with the judiciary have long been present in the Mexican judicial system, each with its own impact on tarnishing the image of the judiciary. Corruption and nepotism fundamentally work against the judiciary in that it paints an institution intended to serve the people and deliver justice as one more focused on its own self-interest. Impunity worsens such a perception by providing tangible evidence of the consequences of this corruption, so that the course of justice becomes one that is often disrupted. Discrimination by the judiciary and a lack of diversity within the judicial system limit access to the judiciary for ethnic and social minorities, whilst further portraying the judiciary as a system run by elites rather than one that can resonate with most people. Inefficiencies, such as the prolonged wait times in existing cases, aggravate public sentiments by portraying the judiciary, already seen as corrupt and elitist, as incapable. Inflated salaries work to exacerbate already established ill-beliefs by presenting the judiciary as an institution interested more in its own prosperity than what is best for the public.

Though these issues are numerous and long-lasting, they are not combined to be the catalyst for calls for reform by the general public. Rather, the judiciary's inability to act and active resistance to these reforms are what ultimately enabled the public to support the line of drastic judicial reform. Attempts at reform of inflated judicial salaries, for example, the federal pay laws initiated by AMLO in December 2018, were blocked by the SCJN for their attack on judicial independence. The legislation, part of AMLO's "Franciscan poverty" policy (Romero), would have significantly reduced the wages of federal workers, including those in the judiciary,

and laid off 70% of non-unionised federal workers (Romero). Though the SCJN ultimately took a pay cut of 25% in January 2019 (AFP), the bad optics of their resistance in December 2018 had already tarnished their reputation in the eyes of the Mexican public. Particularly, by presenting the SCJN as an organisation opposed to the public interest and unwilling to criticism. In addition, this 25% cut still pales in comparison to the 60% pay cut of AMLO, whose adjusted salary was significantly lower than those on the SCJN, at about 100,000 pesos a month (Associated Press). The tendency of the SCJN to resist changes, even those that benefit the public interest, is also apparent in their decision to reverse the popular 2021 reforms to the judiciary, which had gained local support from the executive and legislature and international support. The reforms dismantled entrenched interests within the judiciary, kept a greater track of nepotism and corruption, and implemented gender parity reforms, achieving international praise (Spitalier). Yet, in 2023, following a change in judicial administration, these reforms were reversed, with the judiciary aggressively challenging other branches of government using "judicial independence" as a rationale (Spitalier). Using the banner of judicial independence to topple popular and necessary reforms irreversibly damaged the credibility of the Mexican judiciary, by presenting itself as fully misaligned with the public interest, to the point of reversing sorely needed reforms. Further, doing so harmed the future credibility of the judiciary and its arguments of judicial independence, as, lacking a proper explanation, the reversal appeared more akin to a feeble excuse than a genuine decision made in pursuit of judicial independence.

The repeated resistance of the judiciary to reform, and its use of the banner of judicial independence when making seemingly self-interest-driven decisions, is what ultimately drove the judicial reforms to fruition. It was not just AMLO's successful campaigning for the need for judicial reform. The need for reform had, instead, been apparent for many years, even before AMLO's ascension to the presidency. Only in years prior, few reforms had taken place, with attempts such as those of Vicente Fox's administration failing to garner the necessary legislative support, while little change came from within the judiciary either (D. A. Shirk).

Instead, AMLO's administration was unique in that it was in a position of power to actually initiate and execute reforms, as it had the legislative majority to do so. Beyond practical feasibility, it was also the effective messaging that no reform could come from within the judiciary, given their propensity to resist change on the basis of judicial independence. Only days before the parliamentary vote on constitutional reform to allow the judicial system to become popularly elected, did the SCJN publish its own proposals for self-reform (Harrison). These reforms did aim to address the main areas of popular grievance experienced by the populace, such as discrimination, impunity, corruption, nepotism, and ineffectiveness of the judiciary (Redacción Animal Político). However, from both a social and political perspective, these reforms were too little too late. Socially, these reforms were introduced far too late into the cycle, when reform as a topic had been in contention for many years beforehand. Politically, the supermajority of Morena in parliament further meant that their reforms would have succeeded regardless. Had the SCJN proposed these reforms earlier, be it at the start of AMLO's Presidency or when they realised the need for reform in these areas, it is likely that AMLO's campaigning on

the need for reform would not have seen such great success. AMLO's movement emphasised the inaction of the SCJN and its resistance to change, thereby presenting himself and his party as the only means to judicial reform. Though untrue, he was able to present this message because the SCJN did not enact their own reforms. Popular grievances aired by the Mexican public against the judiciary were unable to be addressed by the judiciary through self-reform despite the years they had to do so, thereby leading to the support of AMLO as a force for reform.

This skilful manoeuvring may be the lesson to be drawn from AMLO's reform. Though international consensus establishes the inefficacy of these reforms and their fundamental conflict with judicial independence, they have occurred nonetheless because the Mexican populace, desperate for reform after decades of judicial ineffectiveness, sees any reform as good reform. And, because AMLO capitalised on these emotions by providing a policy that appears to address these popular grievances, thereby securing political backing. Yet, these reforms will not provide genuine solutions and instead continue to exacerbate existing issues, thereby creating a self-reinforcing cycle where grievances with the judiciary are bound to continue until a further set of reforms, perhaps decades down the road, takes shape.

4. Clashes Between the Executive and Judiciary

Beyond considering the grievances of the general public and the resulting erosion of trust in the judicial system, Executive-judiciary clashes are also a factor in the judicial reforms of 2024, as these presented the SCJN as an opposition to a popular and democratically elected President working in the interest of the general public. The key mechanism through which tensions between the judiciary and the executive occur is through the SCJN's blocking of AMLO Legislation, with key examples being the failure of "Plan B" and the blocking of AMLO's attempt to reform the National Guard.

"Plan B" was the Morena attempt at electoral reform in 2023, which included cuts to the Instituto Nacional Electoral (INE, National Electoral Institute), the independent electoral committee, while limiting its control over political parties and candidates (Rubio). The SCJN struck down one of two parts of "Plan B" due to irregularities in the legislative process (Omar Fierro). The details of these policies, though important, are not significant towards considering how the rejection of these reforms may have influenced AMLO's gripe with the SCJN. Instead, the SCJN's decision to strike down his attempted reform, thereby restricting him from accomplishing his intended political agenda, is of importance. Regardless of whether the SCJN's decision was fair, the perceived effect of the SCJN being a force opposing the political will of the people, and of the SCJN acting not as an impartial force but instead as a political opposition, established the necessary political motivations to reform the judicial system (Spitalier).

Beyond the highly publicised "Plan B", several other incidents of the SCJN blocking AMLO's reform contributed to this perception of the SCJN as set on blocking AMLO's reform. One such example was the 2023 ruling that AMLO's proposal to transfer the National Guard from civilian to military control was unconstitutional (ConstitutionNet). The rationale of the Supreme Court was that public security institutions, including the National Guard, should be

civil in nature, as outlined constitutionally (Velasco Rivera). Another high-profile example is the National Transparency Institute, whose work was put in jeopardy by Morena legislators' refusal to appoint commissioners, wherein an SCJN ruling demanded the Senate fill the vacant positions (Singh and Coronado). Regardless of its constitutional validity, the perception of the SCJN as an institution resistant to change is further strengthened by these rulings against AMLO. Considering the low level of trust in public security institutions by the Mexican public, the SCJN's blocking of reform is easily perceived as an attempt to stop changes from being made to a corrupt system sorely in need of change. For the general public, who do not consider abstract concepts such as constitutionality, AMLO's reform appears to be a well-intentioned one, while the SCJN's veto seems selfish in comparison.

Additionally, several smaller-scale occurrences of the SCJN ruling AMLO legislation unconstitutional, such as a 2021 Presidential Decree on Hydrocarbons, regardless of validity, serve to portray the SCJN as an institution more focused on acting as an opposing political force than an impartial actor (Rubio). Though the SCJN may have had valid and constitutional reasons to reject these and higher-profile reforms such as "Plan B", their failure to adequately explain their rationale enabled a common narrative within the Mexican population, encouraged by politicians, that the judiciary was simply trying to protect its own interests. Adding to this, bad optics policy decisions, such as scaling back public welfare initiatives like the distribution of new free textbooks in Coahuila and Chihuahua in 2023, were made by Ministers of the SCJN, and further served to characterise the SCJN as a corrupt organisation less committed to public welfare and more committed to personal enrichment (AMLO Presidente). Collectively, these decisions allude to a judicial system that, on the surface, seems to prioritise personal interests - money and power - over the public good. Whether in reality these decisions were made with such individualistic intent is up for debate, yet the general perception amongst the Mexican public is of a judicial system that ultimately does not deliver justice.

The manufactured political dichotomy between the SCJN and Morena, beyond the highly publicised conflicts between AMLO and the SCJN on certain policies, further served to portray the SCJN and Chief Justice Norma Piña as partisan actors. Poor interpretation of the Chief Justice's actions, such as not mentioning the President in her speech and standing in deference to the President in February 2023, fueled the political anger felt by the public against the judiciary (MILENIO). AMLO's defamation campaign against the judiciary has also worsened the image of the judiciary, allowing AMLO to criticise on grounds of free speech, whilst any judicial opposition to defamation is framed as an attempt by the judiciary at partisan politics (Lappe). The political battle came to a climax in late 2024, as Sheinbaum (having succeeded AMLO) carried on the rhetoric of a defiant judiciary by suggesting any attempts by the judiciary to subvert the reforms would overstep the court's functions and hamper democratic pedigree, thereby causing a constitutional crisis (Orozco y Villa and Velasco-Rivera). Morena's defamation of the judiciary ultimately stems from their unwillingness to accept Morena's reforms and influence, leading to accusations of them having played too political a role in resisting reform,

even if the SCJN's intent was simply to maintain constitutionality and serve the purpose of the judiciary (Burns).

The rhetorical campaign/defamation of the judiciary adds to the fiscal tightening on an already overloaded judiciary. Fiscal tightening could be easily justified by AMLO as a cost-saving measure, whilst reducing the money poured into a corrupt and inept judiciary. Though potentially true, this only overloads the system further and makes the situation worse. From 2010 to 2022, the Federal Judicial Branch saw 43% more cases, whilst its budget only grew by 19% (Villaseñor). Moreover, judicial spending fell by close to 10% during the AMLO years (2018-2022), despite inflationary pressure and an increase in cases. In tandem with the rhetorical campaign against the SCJN, these fiscal pressures worsened the situation within the SCJN and only made it more difficult for the judiciary to self-reform or clear its backlog.

The clash between the executive and judiciary ultimately appeared, to the general public, as a clash between forces supporting and opposing change. Considering the dysfunctional state of the judicial system, the Mexican public naturally viewed attempts at blocking reform, regardless of its contents, as simply an effort to preserve power and the interests of the elite.

5. AMLO's Instrumentalisation of Grievances for Reform

Though issues with the judiciary have been long-standing, AMLO's ascension to the Presidency and subsequent instrumentalisation of grievances were pivotal towards creating an atmosphere wherein reform was no longer a choice, but an action that had to be taken to fix a deeply flawed judiciary. In short, AMLO exploited the grievances of the Mexican public to attain popular support for his reforms, regardless of their contents.

Perceptions of judicial corruption, for example, were exacerbated by AMLO's ascension to the Presidency in 2018, after which many elements of the judicial system were put in the spotlight, as greater public awareness was established of the various elements of government. Certainly, as part of these efforts, publicising the workings of the judicial system, beyond highlighting its flaws, also worked to exaggerate elements of corruption or incompetence in line with AMLO's attempts to initiate judicial reform (Hernandez). For example, only 2 of 5 judicial careers (circuit magistrate and district judge) require tests as part of career progression, with 87% of the calls for these positions between 1995 and 2016 being closed (Vision of Humanity, "Índice De Paz México 2017: Principales Hallazgos").

Judicial failures have tainted the credibility of Mexico's justice system, resulting in low public trust and a common belief in these matters' prevalence, regardless of fact. Further amplifying these judicial failures are AMLO and Sheinbaum's repeated and regular public criticisms of the judiciary. Utilising his daily morning press conferences (mañaneras), AMLO repeatedly lobbed attacks against the judiciary, with these attacks escalating with the appointment of Norma Piña as Chief Justice in 2023 (Alor et al.). These attacks, focused on the Chief Justice and those who made rulings against his policies, were unfounded and included accusations of "favouring criminals" and "corrupt" (Mattiace). Beyond this, AMLO framed the judiciary, and particularly the judges of the SCJN, as serving a "minority", yet omitting any

further elaboration (Alor et al.), though in one instance in 2024, when ⅖ judges voted against one of his reforms, AMLO referred to them as "conservatives at the service of white-collar mafias" (Mora). Overall, out of the 1646 mañaneras held by AMLO over the course of his Presidency from 2018-2024, 475 (29%) included direct attacks against the judiciary (Aguilar). Though the effects of these public attacks are debatable, they nonetheless put the faults of the judiciary in the spotlight, warranted or not, thus highlighting the need for change. Public perception, or perhaps the increased public awareness of the judiciary's faults following AMLO's attacks, was pivotal towards allowing AMLO to justify his contentious reforms, in the name of fighting corruption and nepotism to reinstate trust in the Mexican judicial system.

6. Conclusion

Ultimately, the Mexican judicial reforms were a product of long-term grievances with the judicial status quo. Corruption and nepotism have long plagued the judiciary, impacting public perception by presenting the judiciary as an elitist circle that fails to represent the Mexican populace and their interests.

Further, public grievances over various sectors have compounded over the years, with harmful effects. Most fundamentally, the exceedingly high impunity rates in Mexico are both the result of a lack of trust in the judiciary and other public security institutions, which are seen broadly as under one umbrella, and of general incompetence (Transparency International). In failing to bring forth justice, the judicial system fails at the most fundamental level. Beyond its ineffectiveness, inefficiency further hampers those areas of the judiciary that do function, with exceedingly long wait times measured in years being par for the course. Also, the judiciary's failure to address minority needs by providing for greater accessibility and representation further works to portray it as a disconnected elite. Despite symbolic gestures such as the 2020 Amnesty Law (MND Staff), the lack of substantive reform, the continued presence of discrimination against indigenous minorities and failure to significantly increase female representation in the judiciary prove that ultimately little has been done to address the public's grievances.

Ultimately, the necessary conditions for AMLO to capitalise on his reforms were enabled by the judiciary's lack of change, despite continued criticism and public pushback, which fueled discontent. In several cases, such as inflated judicial salaries, the justice system resisted reform and thereby presented itself as a defender of a dysfunctional status quo. Capitalising on and no doubt contributing to this framing of events, allowed AMLO to present himself as the natural and only alternative possible, an outsider voice who, at the very least, appeared serious about judicial reform, regardless of how constitutionally illogical. Thus, this instrumentalisation by AMLO allowed him to, using an environment opposing the judiciary, introduce his reform.

Politically, the SCJN's seeming opposition to AMLO worsened its image by opposing a popular President. Though several (and likely the majority) of its rulings were constitutionally valid and logical, some SCJN rulings were too focused on formalistic grounds, rather than substantive judicial review (Omar Fierro). Poorly-read decisions, such as her opting not to stand

for the President or mention him in her speech, further appeared to the public as blatant disrespect for a popular President.

The judiciary presented itself as problematic and in need of urgent reform, and Morena, in the right place at the right time, was able to present itself and its version of "democracy" as a solution to the issue faced by the judiciary. Yet, current realities suggest that the 2025 reforms did not significantly rectify the faults of the judiciary, if not arguably made them worse. Civil society groups identified 12 candidates standing for positions in the judicial system who held alleged ties to organised crime, and 6 who were under investigation for various crimes (Mora). One prominent example is Silvia Delgado, a former lawyer for drug trafficker Joaquín "El Chapo" Guzmán, who won election as a criminal court judge in Ciudad Juárez. Additionally, committees formed by Congress to screen candidates rushed through the interview of nearly 11,000 candidates in 18 days (Campuzano), thus seeming to replace one system of corrupt examinations with another of inadequate interviews. Further, these reforms ignore the inconvenient reality that Morena affiliates, such as SCJN minister Guadarrama, are part of the issue with the judicial system, in terms of both its rampant nepotism and increasingly close ties to the government. Though it is not the purpose of this paper to discuss the validity or effectiveness of these reforms, it is nonetheless noteworthy that a pattern emerges. With a fed-up electorate and a willing political party, an attempt at judicial reform, ineffective as it does more harm than good, will recreate the cycle for future generations. Those at greatest loss are those who will continue to live with the repercussions of this judicial reform and have to face further contentious debate about the judiciary in the years to come.

Works Cited

AFP. “Mexico Supreme Court Judges Slash Own Salaries.” Arab News, 9 Jan. 2019, https://www.arabnews.com/node/1432701/amp. Accessed 29 July 2026.

Aguilar, Azul A. Aguiar. “La Independencia Judicial En Jaque. Ataques Al Poder Judicial En El Sexenio 2018-2024.” Fundación Para La Justicia, 4 July 2025, https://www.fundacionjusticia.org/la-independencia-judicial-en-jaque-ataques-al-poder-judicial-en-el-sexenio-2018-2024/. Accessed 29 July 2026.

Alberto, Carlos, and Rodrigo Eugenio. “The 2024 Judicial Reform in Mexico.” Verfassungsblog, Sept. 2024, https://doi.org/10.59704/fe13e1b21c012c70. Accessed 29 July 2026.

Alor, Jaime Chávez, et al. “Statement Expressing Concern about the Proposal to Reform the Mexican Judiciary.” New York City Bar Association, 26 Aug. 2024, https://www.nycbar.org/reports/statement-expressing-concern-about-the-proposal-to-reform-the-mexican-judiciary/. Accessed 29 July 2026.

AMLO Presidente. “Pueblo Debe Elegir a Jueces Y Magistrados: Presidente; Reafirma Propuesta De Reforma Al Poder Judicial – Presidente De México.” Presidente.Gob.Mx, 1 Sept. 2023, https://amlo.presidente.gob.mx/pueblo-debe-elegir-a-jueces-y-magistrados-presidente-reafirma-propuesta-de-reforma-al-poder-judicial/. Accessed 29 July 2026.

AP. “Indigenous Guatemalan Woman Freed after 7 Years in Mexican Prison.” Al Jazeera, 23 May 2022, https://www.aljazeera.com/news/2022/5/23/indigenous-guatemalan-woman-freed-after-7-years-in-mexican-prison. Accessed 29 July 2026.

Associated Press. “Mexican President Rails at Nation’s High Court Justices.” Voice of America, Voice of America (VOA News), 11 Dec. 2018, https://www.voanews.com/a/mexican-president-rails-at-nation-s-high-court-justices/4697031.html. Accessed 29 July 2026.

Becerril, Andrea. “La Jornada: En El Poder Judicial, Los Sueldos Más Altos Del Servicio Público.” La Jornada, 9 Dec. 2018, https://www.jornada.com.mx/2018/12/09/politica/004n1pol. Accessed 29 July 2026.

Berg, Ryan C, and Natalia Hidalgo. “No Checks on Power? The Effects of Mexico’s Judicial Reform on Foreign Investment and the USMCA.” Csis.Org, 9 July 2025, https://www.csis.org/analysis/no-checks-power-effects-mexicos-judicial-reform-foreign-investment-and-usmca. Accessed 29 July 2026.

Brassiolo, Pablo, et al. Family Rules: Nepotism in the Mexican Judiciary. CAF Development Bank of Latin America, Sept. 2021, https://scioteca.caf.com/bitstream/handle/123456789/1798/Family%20Rules_Nepostim%20in%20the%20Mexican%20Judiciary.pdf?sequence=4&isAllowed=y. Accessed 29 July 2026.

Brewer, Stephanie. “Constitutional Reform Proposals in Mexico: Risks to Human Rights.” WOLA, 1 Mar. 2024, https://www.wola.org/analysis/constitutional-reform-proposals-in-mexico-risks-to-human-rights/. Accessed 29 July 2026.

Bureau of Labor Statistics. Usual Weekly Earnings of Wage and Salary Workers - Second Quarter 2026. U.S. Department of Labor, 21 July 2026, https://www.bls.gov/news.release/pdf/wkyeng.pdf. Accessed 29 July 2026.

Burns, Nick. "The Fading Effort to Stop AMLO's Judicial Reform." Americas Quarterly, 19 Aug. 2024, https://live-aqimportwithimages.pantheonsite.io/article/the-fading-effort-to-stop-amlos-judicial-reform/. Accessed 29 July 2026.

Campuzano, Jaime Allier. El Nepotismo En El Poder Judicial de La Federación Y Su Posible Solución Jurídica. 2023, pp. 222–36, https://revistas-colaboracion.juridicas.unam.mx/index.php/judicatura/article/download/41652/38393. Biblioteca Jurídica Virtual del Institutio de Investigaciones Jurídicas de la UNAM. Accessed 29 July 2026.

ConstitutionNet. "Mexico Supreme Court Rules Transferring National Guard from Civilian to Military Control Was Unconstitutional." ConstitutionNet, 19 Apr. 2023, http://constitutionnet.org/news/mexico-supreme-court-rules-transferring-national-guard-civilian-military-control-was. Accessed 29 July 2026.

Contreras, Karla. "Justicia, Sólo En 4 De Cada 100 Delitos Que Son Investigados." México Evalúa, 11 Oct. 2023, https://mexicoevalua.org/justicia-solo-en-4-de-cada-100-delitos-que-son-investigados/. Accessed 29 July 2026.

Copeland, Cody. "Mexico Judiciary Faces Unprecedented Case Backlog." Courthouse News Service, 27 Dec. 2022, https://courthousenews.com/mexico-judiciary-faces-unprecedented-case-backlog. Accessed 29 July 2026.

Country Economy. "Mexico National Minimum Wage - NMW 2018." Countryeconomy.Com, 16 Aug. 2018, https://countryeconomy.com/national-minimum-wage/mexico?year=2018. Accessed 29 July 2026.

Durán, Valeria, et al. "El Poder Familiar De La Federación." Mexicanos Contra La Corrupción Y La Impunidad, 2016, https://contralacorrupcion.mx/web/magistrados/. Accessed 29 July 2026.

Garcia, Adriana. A THREAT to JUDICIAL INDEPENDENCE Constitutional Reform Proposals Constitutional Reform Proposals in Mexico. Stanford Law School, 2024, https://law.stanford.edu/wp-content/uploads/2024/05/EN_Mexico-Report_Judicial-Independence.pdf. Accessed 29 July 2026.

GlobalData. "Median Household Income in Mexico (2010 - 2021, Purchasing Power Parity in Current International Dollars)." Www.Globaldata.Com, https://www.globaldata.com/data-insights/macroeconomic/median-household-income-in-mexico/. Accessed 29 July 2026.

Gómez-Robledo, Marina, et al. "El 56% De La Suprema Corte De Justicia Tiene Familiares Con Cargos Públicos." Mexicanos Contra La Corrupción Y La Impunidad, 1 Sept. 2025, https://contralacorrupcion.mx/el-56-de-la-suprema-corte-de-justicia-tiene-familiares-con-cargos-publicos/. Accessed 29 July 2026.

Harrison, Chase. “A Timeline of Mexico’s Judicial Reform and Elections.” As/COA, 23 Sept. 2024, https://www.as-coa.org/articles/timeline-mexicos-judicial-reform-and-elections. Accessed 29 July 2026.

Hassan, Tirana. “World Report 2025: Rights Trends in Mexico.” Human Rights Watch, 8 Dec. 2024, https://www.hrw.org/world-report/2025/country-chapters/mexico. Accessed 29 July 2026.

Hernandez, Carlos Manuel L. Pez. “Eternal Formalism: About Judicial Reform in Mexico.” London Journal of Research In Humanities and Social Sciences, vol. 24, no. 12, Sept. 2024, pp. 15–24, https://journalspress.uk/index.php/LJRHSS/article/view/992. Accessed 29 July 2026.

Human Rights Watch. “Mexico: Electoral Process Undermines Judicial Independence.” Human Rights Watch, 1 Sept. 2025, https://www.hrw.org/news/2025/09/01/mexico-electoral-process-undermines-judicial-independence. Accessed 29 July 2026.

Impunidad Cero. “Percepciones De Impunidad 2023.” Impunidad Cero, June 2023, http://www.impunidadcero.org/articulo.php?id=186&t=percepciones-de-impunidad-2023. Accessed 29 July 2026.

INEGI. Comunicación Social ENCUESTA NACIONAL DE VICTIMIZACIÓN Y PERCEPCIÓN SOBRE SEGURIDAD PÚBLICA (ENVIPE) 2024. INEGI, 19 Sept. 2024, https://www.inegi.org.mx/contenidos/saladeprensa/boletines/2024/ENVIPE/ENVIPE_24.pdf. Accessed 29 July 2026.

---. Encuesta Nacional de Victimización Y Percepción Sobre Seguridad Pública 2025. ENVIPE. Cuestionario Principal. INEGI, 2025, https://www.inegi.org.mx/contenidos/programas/envipe/2025/doc/cuest_principal_envipe2025.pdf. Accessed 29 July 2026.

International Bar Association Legal Policy & Research Unit. “50:50 By 2030: A Longitudinal Study into Gender Disparity in Law.” Ibanet.Org, 2024, https://www.ibanet.org/document?id=IBA-Gender-Report-Mexico-2024. Accessed 29 July 2026.

Juanola, Paula Folino. “Trust Me, I’ll Judge Fairly: Breaking down the Judicial Reform in Mexico.” HRRC, Human Rights Research Center, 23 Jan. 2025, https://www.humanrightsresearch.org/post/trust-me-i-ll-judge-fairly-breaking-down-the-judicial-reform-in-mexico. Accessed 29 July 2026.

Kossick, Robert. “The RULE of LAW and DEVELOPMENT in MEXICO.” Arizona Journal of International & Comparative Law, vol. 21, no. 3, 2004, http://arizonajournal.org/wp-content/uploads/2015/11/Kossick.pdf. Accessed 29 July 2026.

LA OCTAVA. “SHEINBAUM EXHIBE ESTUDIO De ONG FUNDADA Por El JUNIOR TÓXICO Sobre NEPOTISMO JUDICIAL.” YouTube, 5 Nov. 2024, https://www.youtube.com/watch?v=BFf8_bZOMAY. Accessed 29 July 2026.

Lappe, Jorge Gaxiola. “Why Institutional Reputation Matters.” Verfassungsblog, Sept. 2024, https://doi.org/10.59704/ebc6a6f112d168c5. Accessed 29 July 2026.

López Bárcenas, Francisco. “Access to Information and Justice for Indigenous Peoples.” Justice and Rights, pp. 146–50, https://www.fundar.org.mx/mexico/pdf/right_to_know/SEC3%20Framcisco%20Lвpez%202.pdf.

Mattiace, Tyler. “AMLO’s Judicial Reform Overlooks the Key Weakness of Mexican Justice.” Americas Quarterly, 22 July 2024, https://www.americasquarterly.org/article/amlos-judicial-reform-overlooks-the-key-weakness-of-mexican-justice/. Accessed 29 July 2026.

MILENIO. “¿Por Qué No Se Paró?: Sheinbaum Reprocha a Norma Piña #Milenioshorts.” YouTube, 18 July 2024, https://www.youtube.com/shorts/oBDI8z6-pJ8. Accessed 29 July 2026.

MND Staff. “2,685 Prisoners Released under Amnesty Law, Security Ministry Reports.” Mexico News Daily, 16 Sept. 2022, https://mexiconewsdaily.com/news/prisoners-released-amnesty-law/. Accessed 29 July 2026.

Mora, David. “A People’s Court? Weighing Mexico’s First Elections for Judges.” Crisisgroup.Org, International Crisis Group, 26 May 2025, https://www.crisisgroup.org/qna/latin-america-caribbean/central-america/mexico/peoples-court-weighing-mexicos-first-elections-for-judges. Accessed 29 July 2026.

National Taxpayers Union Foundation. “Salaries for Members of Congress, Supreme Court Justices, and the President.” National Taxpayers Union, https://www.ntu.org/foundation/tax-page/salaries-for-members-of-congress-supreme-court-justices-and-the-president. Accessed 29 July 2026.

OHCHR. “Mexico: UN Expert Concerned over Criminalisation, Arbitrary Detention and Long Sentences for Indigenous Defenders.” Ohchr, United Nations, 8 Nov. 2024, https://www.ohchr.org/en/press-releases/2024/11/mexico-un-expert-concerned-over-criminalisation-arbitrary-detention-and-long. Accessed 29 July 2026.

Omar Fierro, Juan. “Corte Invalida En Su Totalidad Primera Reforma Electoral Del ‘Plan B.’” Aristegui Noticias, 8 May 2023, https://aristeguinoticias.com/0805/mexico/corte-invalida-en-su-totalidad-primera-reforma-electoral-del-plan-b/. Accessed 29 July 2026.

Orozco y Villa, Luz Helena, and Mariana Velasco-Rivera. “Unpacking the Rhetoric behind Mexico’s Judicial Reform.” Rice University’s Baker Institute for Public Policy, Claudio X. González Center for the US and Mexico, 30 Apr. 2025, https://www.bakerinstitute.org/research/unpacking-rhetoric-behind-mexicos-judicial-reform. Accessed 29 July 2026.

Redacción Animal Político. “Ministra Norma Piña Presenta Una Propuesta Alternativa De Reforma Judicial.” Animal Político, 8 Sept. 2024, https://grupoanimal.mx/politica/reforma-judicial-norma-pina-propuesta-alternativa. Accessed 29 July 2026.

Romero, Luis Gómez. “López Obrador Clashes with Courts after Vowing ‘Poverty’ for Mexican Government.” The Conversation, 8 Feb. 2019, https://doi.org/10.64628/aai.yxh3mcefu. Accessed 29 July 2026.

Rubio, Vanessa. “The next Front in Mexico’s Battle over Institutions.” Americas Quarterly, 17 Jan. 2024, https://www.americasquarterly.org/article/the-next-front-in-mexicos-battle-over-institutions/. Accessed 29 July 2026.

Ríos, Julio. “El Déficit Meritocrático Nepotismo Y Redes Familiares En El Poder Judicial De La Federación.” Mexicanos Contra La Corrupción Y La Impunidad, 27 Aug. 2018, https://contralacorrupcion.mx/el-deficit-meritocratico-2/. Accessed 29 July 2026.

Sarabia, Tomas Lopez. “Indigenous People Can’t Wait.” Open Society Foundations, 18 Mar. 2021, https://www.opensocietyfoundations.org/voices/a-travesty-of-justice-for-indigenous-people-in-mexicos-prisons. Accessed 29 July 2026.

SCJN. “Análisis de La Iniciativa de Reforma al Poder Judicial En México: Problemas Asociados Con La Iniciativa de Reforma Constitucional Del Poder Judicial Presentada El 5 de Febrero De 2024.” Centro de Estudios Constitucionales de La Suprema Corte de Justicia de La Nación (SCJN), 2024, https://www.sitios.scjn.gob.mx/cec/sites/default/files/page/files/2024-06/Ana%CC%81lisis%20de%20la%20iniciativa%20de%20reforma.%20Problemas%20asociados_final.pdf. Accessed 29 July 2026.

Shirk, David. “Mexico’s 2024 Judicial Reform: The Politicization of Justice.” Wilson Center, 20 Mar. 2025, https://www.wilsoncenter.org/article/mexicos-2024-judicial-reform-politicization-justice. Accessed 29 July 2026.

Shirk, David A. “Justice Reform in Mexico: Change and Challenges in the Judicial Sector - GSDRC.” GSDRC - Governance, Social Development, Conflict and Humanitarian Knowledge Services, GSDRC Applied Knowledge Services, 15 Feb. 2013, https://gsdrc.org/document-library/justice-reform-in-mexico-change-and-challenges-in-the-judicial-sector/. Accessed 29 July 2026.

Singapore Statutes Online. “Judges’ Remuneration (Annual Pensionable Salary) Order - Singapore Statutes Online.” Sso.Agc.Gov.Sg, 1 Sept. 1994, https://sso.agc.gov.sg/SL/JRA1994-OR1?DocDate=20201223. Accessed 29 July 2026.

Singh, Amrit, and Graci Gianmarco Coronado. “Mexico’s Democratic Disaster | Journal of Democracy.” Journal of Democracy, Sept. 2024, https://www.journalofdemocracy.org/online-exclusive/mexicos-democratic-disaster/. Accessed 29 July 2026.

Spitalier, Alejandra. “Justice Denied: The Case for Judicial Reform in Mexico.” Wilson Center, 5 Sept. 2024, https://www.wilsoncenter.org/article/justice-denied-case-judicial-reform-mexico. Accessed 29 July 2026.

StashAway. “Average Salary and Median Income in Singapore: Find out How Do You Compare In 2025.” StashAway Singapore, StashAway, 13 Jan. 2026, https://www.stashaway.sg/r/average-salary-median-income-singapore. Accessed 29 July 2026.

Statista. “Total Population of Mexico.” Statista, 21 Apr. 2026, https://www.statista.com/statistics/1392327/total-population-mexico/. Accessed 29 July 2026.
The Economist. “AMLO’s Dangerous Last Blast Threatens Mexico.” The Economist, The Economist, 29 Aug. 2024, https://www.economist.com/the-americas/2024/08/29/amlos-dangerous-last-blast-threatens-mexico. Accessed 29 July 2026.
Transparency International. “Corruption Perceptions Index 2025.” Transparency.Org, 10 Feb. 2026, https://www.transparency.org/en/cpi/2025. Accessed 29 July 2026.
U.S. Mission to Mexico. “On Mexico’s Judicial Reform Proposal.” U.S. Embassy & Consulates in Mexico, 22 Aug. 2024, https://mx.usembassy.gov/on-mexicos-judicial-reform-proposal/. Accessed 29 July 2026.
Velasco Rivera, Mariana. “A Democratic Mandate to Overhaul Mexico’s Judiciary?” Verfassungsblog, Front Matter, July 2024, https://doi.org/10.59704/881d1459cf195258. Accessed 29 July 2026.
Villaseñor, Mariana Campos. “Threats to Judiciary Independence: Are They Becoming Policies?” Www.Wilsoncenter.Org, Wilson Center, 16 Jan. 2024, https://www.wilsoncenter.org/article/threats-judiciary-independence-are-they-becoming-policies. Accessed 29 July 2026.
Vision of Humanity. “Failing Justice: Mexico’s Institutional Weaknesses.” Vision of Humanity, Institute for Economics & Peace, 29 May 2018, https://www.visionofhumanity.org/failing-justice-mexicos-institutional-weaknesses/. Accessed 29 July 2026.
---. “Índice De Paz México 2017: Principales Hallazgos.” Vision of Humanity, Institute for Economics & Peace, 4 Apr. 2017, https://www.visionofhumanity.org/indice-de-paz-mexico-2017/. Accessed 29 July 2026.
Vizcarra-Mendez, Reynaldo. “Mexico: Corruption Perceptions Index 2025 | Insight.” Baker McKenzie, 18 Feb. 2026, https://www.bakermckenzie.com/en/insight/publications/2026/02/mexico-corruption-perceptions-index-2025. Accessed 29 July 2026.
Wilkinson, Daniel. “Mexico: Torture and Historical Truth.” Human Rights Watch, 29 Oct. 2018, https://www.hrw.org/news/2018/10/29/mexico-torture-and-historical-truth. Accessed 29 July 2026.
Órgano de Administración Judicial. Informe de Las Relaciones Registradas En El Padrón Electrónico de Relaciones Familiares (PERF). Consejo de la Judicatura Federal (CJF) — Secretaría Ejecutiva de Adscripción (SEADS), 22 Sept. 2022, https://apps.cjf.gob.mx/NuevoPJF/media/pdf/Punto_SEADS_informe_PERF_9_12_22.pdf. Accessed 29 July 2026.

The Barrier from Within: Understanding the Manufactured Stigma Surrounding SNAP Participation By Jiya Summer Shah

Abstract

Although the Supplemental Nutrition Assistance Program (SNAP) provides food assistance to more than 40 million Americans each month, many eligible individuals do not participate because of the stigma associated with receiving public benefits. This paper examines how stigma has become a barrier to food security in its own right and how it continues to shape recipients' experiences, public opinion, and federal policy. Drawing on historical analysis and government reports alongside recent quantitative and qualitative studies, this paper traces the origins of American attitudes toward public assistance—from the English Poor Laws through the "welfare queen" narrative to modern reforms—before testing those narratives against contemporary evidence about who SNAP participants actually are and what it costs them to participate.

This research demonstrates that many of the assumptions underlying public attitudes and recent policy changes are inconsistent with the empirical evidence. While political rhetoric has long emphasized fraud, dependency, and undeserving recipients, most participants are children, people with disabilities, or members of working households. Recent studies further show that stigma is not simply a social perception but a measurable barrier tied to greater food insecurity and diminished well-being. This burden also falls unevenly, landing hardest on recipients whose race, gender, or immigration status already exposes them to discrimination.

These findings suggest that SNAP cannot be evaluated solely by its economic impact. The 2025 reductions were the largest cuts in the program's history, and they were justified by the very assumptions this evidence contradicts. Understanding stigma as a product of historical narratives and policy design provides a foundation for developing reforms that improve participation, strengthen food security, and ensure that assistance is delivered with greater dignity. Future research should be designed with participants rather than about them, following models in which people with lived experience of food insecurity help write the questions, so that studies capture the forms of stigma recipients themselves identify as most consequential. As those debates continue, recognizing stigma as a policy problem rather than a social attitude is essential to strengthening one of the nation's largest anti-hunger programs.

Introduction

In the 2024 fiscal year, the Supplemental Nutrition Assistance Program (SNAP) reached an average of 41.7 million Americans per month, distributing $99.8 billion in federal benefits at an average of $187.20 per participant each month (SNAP - Key Statistics and Research). By that measure, SNAP is one of the most effective anti-poverty programs in American history. Yet a persistent paradox sits at the center of the program: even when people qualify for benefits, many do not enroll. The USDA's own Food Stamp Program Access Study found that 44 percent of eligible non-participants cited stigma as the reason they did not apply for benefits (Bartlett et al.

26). Stigma, in this context, refers to the negative judgments, stereotypes, and feelings of shame that get attached to people based on a single trait or status, in this case, receiving public food assistance. It operates on two levels at once—the way recipients are viewed by others, and the way they come to view themselves. For a program built to address hunger, the social cost and stigma attached to participation function as a barrier in its own right, keeping food away from the people it was designed to serve.

SNAP, formerly known as "food stamps," is administered through Electronic Benefit Transfer (EBT) cards and governed under the Farm Bill, which is part of why it has survived politically for so long. Rural states want the Farm Bill, urban states want food aid, so by bundling them together, it has kept SNAP alive across decades of partisan turnover (Caswell and Yaktine 45). However, survival is not the same as stability, and the political coalition that has held SNAP together for half a century is now under more strain than it has been in decades.

The stakes have intensified in the past year. In July 2025, President Donald Trump signed H.R. 1, commonly referred to as the Big Beautiful Bill, which cut roughly $187 billion from SNAP, the largest reduction in the program's history. The law expanded work requirements to include adults aged 55 to 64 and parents of children 14 and older, shifted administrative costs from the federal government to the states, and removed prior exemptions for veterans, homeless individuals, and adults aging out of foster care (Bleich and Plata-Nino 1). The effects of this were almost immediate as SNAP enrollment fell from 42.8 million in January 2025 to 38.6 million in January 2026, a loss of over four million people in a single year ("SNAP Participation"). The Center for American Progress projects that the cuts could lead to roughly 70,000 avoidable deaths by 2040 (Ross). These projections suggest that the consequences of the cuts may ultimately be measured not just in dollars, but also in lives. They mark a reversal of one of the country's most established anti-hunger initiatives, a lifeline for tens of millions of Americans.

The political cases associated with these cuts rest on long-standing narratives of fraud and dependency, with USDA Secretary Brooke Rollins justifying the changes by telling Fox Business that they would protect taxpayers from "fraudsters" and those "taking advantage" of the program (Joffe-Block). While Rollins's rhetoric is presented as a response to present-day abuse of the program, this framing isn't new. It traces back through Reagan, through the welfare reforms of the 1990s, and through centuries of American debates about who counts as deserving of public aid. What ties these moments together is a persistent suspicion of the poor that each era inherits. Whether or not it matches the data, it shapes public policy, and more importantly, it shapes how SNAP recipients are perceived and treated by cashiers, caseworkers, their families, and even themselves. The result is a gap between what SNAP actually does and how the people who use it are seen. The difference today is that this suspicion is no longer just shaping public opinion. It is shaping access to basic nutrition.

This paper argues that stigma is not simply an unintended consequence of SNAP but is produced through the program's design and administration. Existing literature treats stigma as something that happens to recipients, whether as a feeling to be measured or an experience to be

documented, but it has not accounted for where it comes from. By bringing together historical scholarship, policy analysis, and research on recipient experiences, this paper argues that administrative and policy features—including benefit delivery, restrictions on purchases, eligibility verification, recertification procedures, and work requirements—shape how recipients are perceived by others and how they perceive themselves. Rather than treating stigma as an unavoidable feature of public assistance, this paper shows that it is reinforced through the historical narratives, political discourse, and administrative structures, and is therefore neither inevitable nor beyond reform.

The review proceeds in three parts. The first traces the historical roots of US food assistance and the long arc of public attitudes toward the poor, including the legacy of the "welfare queen" narrative. The second turns to the present, comparing who receives SNAP and how the program is actually used against the assumptions that drive policy. It then draws on recent quantitative and qualitative research to examine how stigma operates in the program's administrative design and in the daily experience of using it. The third considers what this literature reveals about the program's limits and points toward directions for future research.

Historical Foundations

To understand why stigma is so deeply tied to SNAP today, it is worth tracing where both the program and the attitudes toward its users came from. SNAP did not arrive fully formed in the modern political landscape. It was built across nearly a century of compromises, and the suspicions attached to it were already in place long before the first food stamp was ever issued.

The earliest version of what would become SNAP appeared in 1939, in the middle of the Great Depression. The country was facing two problems at once. Farmers were producing more food than the market could absorb, which drove prices down and threatened their livelihoods. At the same time, millions of Americans could not afford to buy food at any price ("A Short History of SNAP"). The first Food Stamp Program tried to solve both problems with a single mechanism. Recipients bought orange stamps equivalent to their normal food spending, and for every dollar of orange stamps purchased, they received fifty cents in blue stamps that could be used only to buy surplus food designated by the USDA. The idea was to feed hungry families while simultaneously clearing the agricultural backlog (Caswell and Yaktine 29).

The first iteration of the program ended in 1943, when wartime employment closed both the hunger gap and the agricultural surplus that had created the need for it. Nearly two decades later, President Kennedy revived it as a pilot in 1961, and the program was made permanent through the Food Stamp Act of 1964, signed by President Lyndon Johnson as part of the War on Poverty ("A Short History of SNAP"; Caswell and Yaktine 31). Even after the program stabilized, it carried the same dual purpose it began with: feeding the poor and supporting agricultural producers. Recipients were still required to purchase their stamps until 1977. However, when that requirement was finally eliminated, its benefits began to be provided directly to eligible households rather than through subsidized purchases ("A Short History of SNAP").

Today, SNAP still lives inside the Farm Bill, the omnibus agricultural legislation that Congress reauthorizes roughly every five years ("A Short History of SNAP"; Caswell and Yaktine 44). This placement means that SNAP's funding, eligibility rules, work requirements, and benefit levels are not debated as a standalone anti-hunger policy. Instead, they are negotiated alongside crop insurance, conservation programs, commodity supports, and dairy pricing. For example, decisions about how much a family of four can receive in monthly food benefits sit in the same place as decisions about subsidies for soybean producers. The structural consequence is that SNAP is treated, in practice, as one line item in a much larger agricultural package, which both protects it from outright elimination and exposes it to being cut, restructured, or used as a bargaining chip whenever the Farm Bill comes up for renewal. The 2025 reductions were partly enabled by this arrangement, which allowed significant modifications to food assistance policy to be embedded within a larger legislative package, avoiding a separate debate focused specifically on hunger and nutrition assistance.

Negative perceptions and scrutiny directed toward SNAP recipients predate the program. They trace back centuries to the framework that shaped how English-speaking societies thought about poverty long before there was a United States. In 1601, Queen Elizabeth I signed the English Poor Laws, often considered the first systematic codification of state responsibility for the poor in the Western world (Nestle 1632). The laws established tax-funded relief administered through local parishes, but also embedded a principle that would endure for centuries, the division of the poor into categories based on their perceived deservingness for aid.

The Poor Laws distinguished between the "deserving poor," people who could not work due to age, disability, or circumstances beyond their control, and the "undeserving poor," able-bodied individuals whose poverty was attributed to idleness or moral failings (Nestle 1632; "Poor Law"). The deserving poor were eligible for relief, while the undeserving poor were often subjected to workhouses, forced labor, or public punishment. In this way, the system recognized a collective responsibility to provide assistance while simultaneously framing poverty as a moral condition that required discipline as much as support. By embedding these distinctions into the administration of relief, the Poor Laws ensured that judgments about deservingness became part of how public assistance was delivered.

English settlers carried these assumptions to North America. The transmission was not just a transfer of legal ideas. It happened alongside the racialized labor systems of slavery and indenture, which meant that from the start, American debates over who counted as deserving were entangled with questions of race. Poor relief systems in Massachusetts, Virginia, and other early colonies were modeled on the Elizabethan Poor Laws, making the distinction between those who were deserving of assistance and those who were not a foundational element of American approaches to public assistance (Kennedy). Although the specific groups placed into each category changed over time, the underlying logic remained remarkably consistent. Some individuals were viewed as worthy of help because their hardship was seen as beyond their control, while others were regarded with suspicion because their poverty was assumed to stem from personal failure. This impulse to distinguish between legitimate need and perceived

dependency has shaped debates over public assistance and influenced nearly every major American welfare program since.

Of all the developments in the history of American welfare, few have shaped contemporary SNAP policy more directly than the rise of the "welfare queen" narrative during the 1970s. It was also the moment when public suspicion of welfare recipients took on a distinctly racialized and gendered character, one that continues to influence how SNAP recipients are perceived today.

The narrative originated with a real person. Linda Taylor, a woman from Chicago, became the subject of investigative reporting by Chicago Tribune journalist George Bliss in 1974 after he uncovered her use of multiple aliases to collect welfare benefits. The Tribune was one of the first to apply the label "welfare queen" to Taylor that year (Levin, ch. 3). In 1977, she was convicted of illegally obtaining 23 welfare checks through two aliases and sentenced to two to six years in prison. The documented fraud amounted to approximately $8,000.

What transformed Taylor from a local news story into a national political symbol was Ronald Reagan. During his 1976 campaign for the Republican presidential nomination, Reagan repeatedly referenced her case, though he never used her name. At a January 1976 rally in New Hampshire, he described a woman in Chicago who allegedly used over 80 names, 30 addresses, and at least 15 phone numbers to collect food stamps, welfare payments, Social Security benefits, and veterans' benefits, claiming that her tax-free income totaled $150,000 annually (Levin, ch. 1; Black and Sprague). Despite the exaggeration of the figures, the performance was effective regardless, and Reagan returned to the story repeatedly throughout both the 1976 and 1980 campaigns.

The racial coding embedded within the welfare queen image is also central to its political power. Reagan never explicitly identified Taylor's race, but he did not need to. The image of a woman dressed in fur, driving a Cadillac, and exploiting public assistance emerged in a political climate already saturated with racialized portrayals of urban poverty (Levin, ch. 3). Although most welfare recipients were and still are white, the narrative helped establish a lasting public image of the typical recipient as Black, female, and untrustworthy, an image durable enough that policy debates now still take place on its terms.

The most comprehensive examination of how this narrative reshaped public opinion comes from political scientist Martin Gilens. In his 1999 book *Why Americans Hate Welfare*, Gilens analyzed survey data and media coverage spanning more than four decades to investigate how Americans form opinions about welfare policy. He found that attitudes toward welfare were shaped less by economic self-interest than by racialized perceptions of who received public assistance. His content analysis showed that sympathetic stories about poverty disproportionately featured white subjects, while critical stories about welfare disproportionately featured Black subjects (Gilens 103-107). As a result, many Americans substantially overestimated the proportion of welfare recipients who were Black, a misconception that often persisted even when respondents were presented with accurate statistics. Gilens's findings suggest that the welfare queen narrative was effective not because it reflected reality, but because it shifted attention

away from the structural causes of poverty and toward judgments about the character of welfare recipients. In other words, this narrative offered a psychologically and politically convenient explanation for poverty, allowing many Americans to place responsibility on individuals instead of confronting the broader economic and policy failures that shaped their circumstances. Once welfare became associated with stereotypes of dependency and dishonesty, receiving assistance carried not only economic implications but also social ones, as recipients became subject to assumptions about their morality and worthiness.

Political scientist Anne Whitesell, writing twenty-five years after Gilens, argues that the effects of the welfare queen narrative extend beyond public opinion and into the design of welfare policy itself. In her 2024 book *Living Off the Government? Race, Gender, and the Politics of Welfare*, Whitesell contends that policies such as work requirements, time limits, drug testing, and benefit caps are often justified by assumptions about recipient behavior that empirical evidence does not consistently support (Whitesell 88, 142-155). In this sense, the welfare queen stereotype did more than shape how Americans viewed welfare recipients; it helped shape the rules governing public assistance. Its influence can therefore be seen not only in how recipients are perceived, but also in the restrictions placed upon them. Together, Gilens and Whitesell show how stereotypes about welfare recipients shaped both public opinion and public policy. Understanding how those stereotypes became institutionalized is essential to understanding the modern structure of SNAP. Once embedded in policy, these assumptions no longer depended on the beliefs of individual policymakers or members of the public to shape recipients' experiences; they became part of the routine operation of the program.

The welfare queen narrative endured because it gave a centuries-old suspicion a new face. The Poor Laws had already established the idea that poverty could be interpreted as a moral failing, and American welfare policy had been shaped by that assumption for generations. What changed in the 1970s was who that suspicion became attached to. The image of a Black woman defrauding the system gave older anxieties a clearer target. Once this stereotype became embedded in public consciousness, it provided a powerful justification for policies designed to monitor, restrict, and discipline welfare recipients.

If the welfare queen narrative reshaped public opinion in the 1970s and 1980s, the welfare reform law of 1996 translated that opinion into federal policy. After campaigning on a promise to 'end welfare as we know it,' President Bill Clinton signed the Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) into law in August 1996 (Dong 113-114; Nadasen). The legislation replaced Aid to Families with Dependent Children (AFDC), a federal entitlement program established in 1935, with Temporary Assistance for Needy Families (TANF), a block grant system that granted states greater authority while imposing stricter requirements on recipients. These measures included a five-year lifetime limit on benefits, mandatory work requirements, and the denial of most forms of public assistance to legal immigrants for the first five years after their arrival in the country.

One detail worth noting is that PRWORA did not stop at cash assistance. It also cut the value of food stamp benefits and, for the first time, imposed work requirements on able-bodied

adults without dependents, often referred to as ABAWDs (Harris 73). Supporters argued that the ABAWD requirements promoted self-sufficiency by encouraging work and job training, while critics contended that the rules could cut off food assistance to unemployed adults who faced barriers to employment or lived in areas with limited job opportunities. The food assistance system that Bill Clinton signed into law in 1996 is, in its basic structure, the system that SNAP recipients still navigate today.

The thread running through history is not the policies themselves but the question underneath them: who counts as deserving of help, and who has to prove it. That question has been asked in different ways across four centuries, but the answer has consistently been used to draw a line between citizens who receive assistance freely and those who must receive it conditionally, under greater scrutiny, and at a social cost. Across four centuries, these judgments repeatedly moved beyond public attitudes and became embedded in the institutions that administer assistance. SNAP recipients today remain on the conditional side of that line, and what that looks like in practice is the focus of what follows.

Stigma in Policy and Daily Experiences

The Big Beautiful Bill, signed into law by President Donald Trump in July of 2025, illustrates how many of the assumptions embedded in the welfare queen narrative continued to shape debates about public assistance. The expansion of work requirements reflects a long-standing suspicion that recipients are avoiding employment, while the removal of exemptions reflects another effort to recalibrate who is considered deserving of assistance. These ideas have appeared throughout the history of American welfare policy, even as the reality of program participation has changed. Yet they do not accurately reflect who SNAP recipients are or how the program fits into their daily lives. Understanding that gap is essential to understanding the stigma that surrounds SNAP today.

The most recent comprehensive data on SNAP participants comes from the USDA's Characteristics of SNAP Households report for fiscal year 2023, which draws on quality-control data verified by state agencies. The picture it shows is extremely different from the welfare queen image still operating in debates. Roughly 39 percent of SNAP participants are children, 20 percent are older adults aged sixty or above, and another 10 percent are non-elderly adults living with a disability (Monkovic and Ward). Combined, that means nearly seventy percent of all SNAP participants are children, the elderly, or the disabled. The same trend appears at the household level. Four out of five SNAP households (79 percent) include a child, an elderly individual, or a non-elderly person with a disability (Monkovic and Ward).

Income data reflects a similar trend. Seventy-three percent of households participating in SNAP have a gross monthly income at or below the federal poverty line, which in fiscal year 2023 was $27,750 for a family of four (Walcott and Ziegeweid). The average SNAP household brings in $1,059 in gross monthly income and only $527 after deductions, roughly $250 a week for an entire household. Yet many SNAP recipients are already working. Nearly a third of SNAP households have earned income, and among households with children, that figure rises to 55

percent (Walcott and Ziegeweid). For many families, the problem is not a lack of work but the inability of low-wage employment to cover basic necessities. These statistics challenge a deeply rooted American cultural belief that hard work alone guarantees economic security. Yet many people continue to assume that those receiving SNAP simply are not working hard enough, even when the data show that many recipients are employed. In reality, millions of Americans are working full-time jobs that do not pay enough to cover basic necessities such as groceries, meaning SNAP functions less as a program for the unwilling to work and more as a subsidy for wages that have failed to keep pace with the rising cost of living.

The racial composition of the program also matters because so much of the political rhetoric surrounding SNAP relies on assumptions about who receives it. According to FRAC's analysis of USDA data, more than 35 percent of SNAP participants identify as white, nearly 26 percent as Black or African American, almost 16 percent as Hispanic, 4 percent as Asian, and a little over 1 percent as Native American (Walcott and Ziegeweid). The largest single racial group of SNAP participants is white. While Black and Hispanic Americans make up a larger share of SNAP participants than they do of the overall U.S. population, the program serves people from every racial and ethnic background. However, the welfare queen image, which portrays the typical recipient as a Black woman exploiting the system, bears little resemblance to the actual demographics of the program. The persistence of this stereotype illustrates how political narratives can become more influential than empirical reality, reinforcing racialized assumptions about SNAP recipients despite evidence that the program serves a diverse population.

The significance of these statistics extends beyond correcting misconceptions about who receives SNAP. They reveal a disconnect between the people the program serves and the people many Americans imagine when they think about welfare. Children, older adults, people with disabilities, and low-income workers make up much of the program's participant base, yet conversations about SNAP often continue to focus on concerns about dependency, fraud, and undeserving recipients. That disconnect matters because stereotypes do not remain confined to campaign speeches or media narratives. They shape how recipients are viewed, how programs are designed, and how participation in those programs is experienced.

Just as the welfare queen stereotype misrepresents who participates in SNAP, it also misrepresents how participants use the program. SNAP fraud is, by almost every credible measure, extremely rare. The trafficking rate, meaning the share of benefits exchanged illegally for cash or ineligible items, sits at around 1.6 percent according to the USDA's most recent published rate, covering FY 2015 to FY 2017 (Wilson 8). Recipient-side fraud, meaning intentional misrepresentation by households applying for SNAP, is even smaller. In FY 2021, state agencies attempted to collect $54 million in overpayments resulting from recipient trafficking and recipient application fraud combined. By contrast, $352 million in overpayments came from unintentional recipient errors, and $85 million came from governmental agency errors (Aussenberg). The largest sources of money lost in SNAP are mistakes, not fraud, and most of those mistakes are not made by recipients at all.

Public opinion runs in the opposite direction. A YouGov survey of US adults found that 59 percent believe it is “very” or “somewhat” common for people to lie about SNAP eligibility (“Welfare Fraud Statistics”). The gap between perception and reality is big, and it is the perception, not the reality, that has shaped the political case for cutting SNAP. This disconnect is not a harmless misunderstanding because public opinion often shapes public policy. When Americans believe fraud is widespread, they are more likely to support stricter eligibility rules, increased surveillance, and benefit reductions, even though the evidence shows these policies are responding to a largely imagined problem. Repeated for decades in political narratives and media coverage, the welfare queen narrative has become accepted as common sense rather than a claim to be tested against evidence. Correcting that misconception is essential because policies grounded in myth rather than evidence undermine the effectiveness and purpose of SNAP itself.

What is often overlooked is who is actually responsible for the most significant losses associated with SNAP fraud. While public attention frequently focuses on recipients allegedly abusing the program, a growing share of losses comes from criminals stealing benefits from recipients themselves. Through methods such as EBT skimming and card cloning, criminals use hidden devices to copy a recipient’s card information during a transaction; that data is then copied onto a blank card and used to make fraudulent purchases or withdrawals (“Stolen SNAP Benefits”). Between October 2022 and December 2024, states reported replacing more than $320 million in stolen SNAP benefits (“Stolen SNAP Benefits”). As of the start of 2025, however, the full extent of this theft remains difficult to measure: laws have capped recipients at two replacement claims per year, and states can no longer use federal funds to replace stolen benefits, meaning more of this loss now falls directly on recipients themselves (“Stolen SNAP Benefits”). The U.S. Secret Service has also identified EBT skimming as part of a broader rise in payment card fraud, estimating that skimming costs financial institutions and consumers more than $1 billion annually (“Law Enforcement Agencies”). The welfare queen narrative imagines recipients as the people committing fraud against the system. The reality is closer to the opposite. Recipients are increasingly the victims of fraud, while still carrying the social stigma of being viewed as its perpetrators.

The administrative design of SNAP also contributes to the stigma that recipients experience. Many of these features are rooted in the policy framework established by PRWORA and earlier welfare reforms, which treated recipients as people who needed to be monitored rather than simply assisted. Recipients must repeatedly recertify their eligibility, often through caseworker interviews that demand documentation that many low-income households struggle to assemble. Work requirements add another layer of verification. Because the program is administered by states, recipients may also face inconsistent rules, lost paperwork, and bureaucratic delays. Many of these requirements are not inherent to distributing food itself. Each requirement is a decision, made by an agency or a legislature, that could have been made otherwise. The result is a system that carries constant implicit accusation, focused on proving eligibility over and over again rather than ensuring that people have enough food on their tables.

A more specific example is the design of the EBT card. In Michigan, where the Blau et al. study was conducted, the EBT card, known as the Bridge Card, is bright orange and easily recognizable. Researchers found that parents repeatedly described feeling exposed at the checkout counter because the card visually marked them as recipients before any interaction with a cashier even began. One participant said she used self-checkout exclusively in order to hide her Bridge Card from other shoppers (Blau et al. 5). The color of an EBT card is an administrative choice. Michigan chose orange, and in doing so converted a private financial circumstance into a public announcement that a recipient makes involuntarily every time they reach into their wallet. This kind of stigma is not the byproduct of how people personally feel about welfare. It is the product of a specific design choice made by state agencies about how to display, identify, and process a public benefit.

The relatively small amount of assistance involved makes this dynamic even more notable. The average SNAP recipient receives about $6 per person per day (Walcott and Ziegeweid). Recipients are being watched, lectured, and stereotyped over a benefit that amounts to less than the cost of a single fast-food meal. The level of social judgment attached to SNAP is difficult to reconcile with the relatively modest size of the benefit itself. At the checkout counter, recipients are not simply being judged for receiving assistance. They are being judged for what that assistance is assumed to say about them.

Restrictions on what can be purchased with SNAP function in a similar way. Recipients cannot use SNAP for hot prepared food, vitamins, household supplies, or, in a growing number of states, items like soda or candy (Blau et al. 5). The stated rationale is nutritional, but the underlying message is one of paternalism, the idea that recipients cannot be trusted to make their own food choices for their families. Bauer, one of the authors of the Michigan study, has argued that recent state-level restriction proposals amplify stigma rather than improve diet quality, and that they may even discourage participation altogether by adding more judgment and inconvenience to the shopping experience (“Restriction vs. Incentives”).

From an anthropological standpoint, this is a denial of food sovereignty, the principle that people should have the right to make decisions about what they eat and how they feed their families. SNAP succeeds at the narrow goal of providing calories, but it is structured in a way that strips away the cultural and personal autonomy that comes with controlling one's own food. Losing food autonomy has consequences beyond nutrition. Food is one of the most direct ways people express care for their families, honor their cultural traditions, and exercise judgment about what is best for their children. When SNAP participants are told which foods they may or may not buy, that message travels beyond checkout and into how recipients experience themselves as parents, as members of a community, and as adults capable of making decisions. A program built to relieve hunger ends up narrowing the everyday choices that give food meaning in the first place.

A very recent and rigorous quantitative study of SNAP stigma comes from Hatton et al., a team of researchers at Johns Hopkins. The team analyzed survey data from 1,383 SNAP participants nationwide to examine how stigma relates to food insecurity and how experiences of

stigma vary by gender. Their findings strengthen the argument that stigma is not merely a subjective feeling but a measurable aspect of SNAP participation, as participants who reported stigma were significantly more likely to experience food insecurity (Hatton et al. 7).

The study found that SNAP participants who reported experiencing stigma were more than three times as likely to report food insecurity. Put simply, feeling judged for using SNAP was associated with a substantially greater likelihood of going hungry. The study also found that male SNAP participants reported significantly higher levels of stigma than female participants, despite making up a smaller share of program participants. Hatton et al. suggest that this pattern reflects cultural expectations surrounding masculinity and self-reliance. Because men are often expected to be financially independent, receiving public assistance may carry a greater sense of shame, which in turn is associated with worse food outcomes (Hatton et al. 8-10). Taken together, these findings suggest that stigma is more than an emotional burden. It has measurable consequences for recipients' well-being and affects different groups in different ways.

They also challenge the idea that stigma is primarily a product of public visibility. The study found no significant relationship between stigma and online grocery shopping, despite expectations that online ordering would reduce stigma by making SNAP use less visible. This implies that the source of stigma extends beyond visible purchasing and is rooted in broader social perceptions of SNAP use. Recipients who feel stigmatized have poorer diet quality and greater psychological distress, with some groups bearing a disproportionate share of that burden. This suggests that reducing stigma requires more than making SNAP participation less visible. As long as receiving assistance is associated with personal failure or moral weakness, stigma will continue to discourage participation, undermine well-being, and limit the program's ability to fully address food insecurity.

If Hatton et al. provide a national quantitative picture of SNAP stigma, then Blau et al. deliver a qualitative account of how that stigma is experienced in daily life. Working through the Feeding MI Families project at the University of Michigan, the research team surveyed 811 English and Spanish-speaking parents experiencing food insecurity across three Michigan cities between November 2022 and June 2023. Their study examined how stigma shapes the experience of using food assistance, particularly among recipients who hold multiple marginalized identities in daily life (Blau et al. 1-2).

More than one-third of participants reported experiencing discrimination because they used food assistance, and over half of those born outside the US feared that using assistance would affect their immigration status (Blau et al. 1, 3). Black, Hispanic, Latino, and immigrant families were disproportionately affected, with stigma at the grocery store, in caseworker interactions, and in the emergency food system, layering onto existing experiences of racism and sexism. Participants described being treated with suspicion by cashiers, judged for their food purchases by other shoppers, and being lectured by strangers about taking advantage of taxpayers (Blau et al. 5-6).

What makes this study distinctive is the intersectional framing. The study does not treat stigma as a uniform experience. Instead, it shows that the experience of using SNAP is filtered

through every other marginalized identity a recipient holds. A Spanish-speaking immigrant woman shopping for her child does not experience SNAP the same way an English-speaking white man does. The stigma she encounters is layered, with the welfare queen narrative compounding the racism and xenophobia she already navigates. The implication is significant. Stigma is not a single phenomenon that can be measured uniformly across the SNAP population. It is a variable burden that falls hardest on the recipients with the least social capital to resist it.

The findings of Hatton et al. and Blau et al. paint a consistent picture. Hatton shows that stigma is associated with measurable outcomes such as food insecurity, while Blau shows how that stigma is experienced in everyday life. Yet both studies stop at documenting stigma rather than locating its source. Each treats stigma as a condition to be measured or described, something recipients encounter, rather than something the program itself generates. Read alongside Whitesell's account of how narrative hardens into policy, these findings describe the downstream effects of upstream choices that remain open to reform.

Conclusion

Taken together, the evidence gathered in this paper suggests that SNAP cannot be evaluated on economic terms alone. Although the program provides food assistance to over forty million Americans each month, the research shows that the social cost of participating has become a barrier in its own right. Stigma discourages eligible individuals from enrolling, is associated with greater food insecurity, and shapes how recipients experience both the program and understand themselves. As the earlier sections have shown, this stigma is not accidental. It reflects centuries of distinctions on who is considered "deserving," decades of racialized political framing, and policy structures built around misconceptions that continue to influence public opinion and program design.

Recent research also shifts the conversation by centering recipients' experiences rather than treating them solely as policy targets or statistics. Hatton et al. and Blau et al. show that stigma is measurable, has real consequences for food security, and is experienced differently across race, gender, immigration status, and other intersecting identities.

Stigma is not experienced uniformly; it is a variable burden that falls hardest on recipients holding multiple marginalized identities. A Spanish-speaking immigrant mother, a Black woman in a caseworker interview, and a man whose sense of masculinity has been shaped around economic self-reliance may all participate in the same program, yet each experiences SNAP differently. These findings suggest that efforts to reduce stigma must recognize that recipients encounter different forms of judgment depending on the broader social and cultural contexts in which they live. Any serious reform of the program must begin with the recognition that a single policy fix cannot address a stigma that is layered, cultural, and intersectional.

These findings are especially relevant in light of recent changes to federal SNAP policy. The 2025 Big Beautiful Bill was justified on many of the same assumptions about fraud and dependency that have shaped welfare debates for decades, despite the evidence reviewed here showing those assumptions to be inconsistent with how the program actually operates.

Addressing this disconnect will require more than additional data. It will require policymakers to reconsider the narratives that shape the public understanding of public assistance.

Research grounded in the recipient voice will be able to reveal aspects of SNAP that administrative data alone cannot capture. Therefore, future research should expand qualitative and intersectional approaches while examining how administrative choices, such as recertification requirements and EBT card design, shape participation and stigma over time. Increased collaboration with SNAP recipients is needed so the direction of the research is informed by the lived experiences and concerns of those who rely on the program.

Recognizing stigma as a product of historical narratives and policy choices, rather than an inevitable consequence of public assistance, provides an important foundation for future reforms that seek not only to feed people, but to do so with dignity.

Works Cited

Aussenberg, Randy Alison. Supplemental Nutrition Assistance Program: Errors and Fraud. Congressional Research Service, 7 Apr. 2025, www.congress.gov/crs-product/IF10860.

Bartlett, Susan, et al. Food Stamp Program Access Study: Eligible Nonparticipants. U.S. Department of Agriculture, 12 May 2004. Economic Research Service, www.ers.usda.gov/publications/43389.

Black, Rachel, and Aleta Sprague. "The Rise and Reign of the 'Welfare Queen.'" New America, 22 Sept. 2016, www.newamerica.org/insights/rise-and-reign-welfare-queen/.

Blau, Sarah J., et al. "'It Makes You Feel Worthless.' The Live Experience of Discrimination in the US Food Assistance System." Social Science & Medicine, vol. 372, May 2025, p. 117959, https://doi.org/10.1016/j.socscimed.2025.117959.

Bleich, Sara N., and Gina Plata-Nino. "Changes to SNAP under HR 1 and the Implications for Food Insecurity." JAMA Health Forum, vol. 7, no. 1, 29 Jan. 2026, p. e260158, https://doi.org/10.1001/jamahealthforum.2026.0158.

Caswell, Julie A., and Ann L. Yaktine, editors. Supplemental Nutrition Assistance Program: Examining the Evidence to Define Benefit Adequacy. National Academies Press, 2013, https://doi.org/10.17226/13485.

Dong, Kimberly R. "The Supplemental Nutrition Assistance Program (SNAP) Ban and Perpetual Punishment for Justice-Affected Populations." American Journal of Public Health, vol. 115, no. 2, Feb. 2025, pp. 113-15, https://doi.org/10.2105/ajph.2024.307943.

Gilens, Martin. Why Americans Hate Welfare: Race, Media, and the Politics of Antipoverty Policy. U of Chicago P, 1999.

Harris, Timothy F. "Do SNAP Work Requirements Work?" Economic Inquiry, vol. 59, no. 1, 20 Sept. 2020, pp. 72-94, https://doi.org/10.1111/ecin.12948.

Hatton, C. Ross, et al. "Food for Thought: The Intersection between SNAP Stigma, Food Insecurity, and Gender." Social Science and Medicine, vol. 361, Nov. 2024, pp. 1-25, https://doi.org/10.1016/j.socscimed.2024.117367.

Joffe-Block, Jude. "The Agriculture Secretary Says SNAP Changes Are Coming. Here's What We Know." NPR, 1 Dec. 2025, www.npr.org/2025/12/01/nx-s1-5608225/snap-rule-changes-usda-rollins.

Kennedy, Lesley. "How 'Poor Laws' Tried to Tackle Poverty in Colonial America." History, A&E Television Networks, 27 May 2025, www.history.com/articles/colonial-america-poor-laws.

"Law Enforcement Agencies Conduct EBT Fraud and Card Skimming Outreach." United States Secret Service, U.S. Secret Service Media Relations, 31 Jan. 2025, www.secretservice.gov/newsroom/releases/2025/01/law-enforcement-agencies-conduct-ebt-fraud-and-card-skimming-outreach. Press release.

Levin, Josh. The Queen: The Forgotten Life Behind an American Myth. Little, Brown and Company, 2019.

Monkovic, Mia, and Ben Ward. Characteristics of Supplemental Nutrition Assistance Program Households: Fiscal Year 2023. U.S. Department of Agriculture, 2025. Food and Nutrition Service, www.fna.usda.gov/research/snap/characteristics-fy23.

Nadasen, Premilla. "Welfare Reform and the Politics of Race: 20 Years Later." Perspectives on History, American Historical Association, 22 Aug. 2016, www.historians.org/perspectives-article/welfare-reform-and-the-politics-of-race-20-years-later-september-2016/.

Nestle, Marion. "The Supplemental Nutrition Assistance Program (SNAP): History, Politics, and Public Health Implications." American Journal of Public Health, vol. 109, no. 12, Dec. 2019, pp. 1631-35, https://doi.org/10.2105/ajph.2019.305361.

"Poor Law." Encyclopedia Britannica, www.britannica.com/event/Poor-Law. Accessed 17 July 2026.

"Restriction Vs. Incentives: The Complex Reality of SNAP Food Policies." Michigan Public Health News Center, U of Michigan School of Public Health, 4 Apr. 2025, sph.umich.edu/news/2025posts/restrictions-incentives-snap-food-policies.html.

Ross, Kyle. "SNAP Cuts Could Lead to 70,000 Avoidable Deaths." Center for American Progress, 19 Mar. 2026, www.americanprogress.org/article/snap-cuts-could-lead-to-70000-avoidable-deaths/.

"A Short History of SNAP." Food and Nutrition Administration, U.S. Department of Agriculture, 29 Aug. 2025, www.fna.usda.gov/snap/history.

"SNAP Participation, January 2025 to Present." Food Research and Action Center, Apr. 2026, frac.org/snap-participation-data-january-2025-present.

"Stolen SNAP Benefits Cost Beneficiaries Millions." WatchBlog, U.S. Government Accountability Office, 2 Dec. 2025, www.gao.gov/blog/stolen-snap-benefits-cost-beneficiaries-millions.

"Supplemental Nutrition Assistance Program (SNAP) - Key Statistics and Research." Economic Research Service, U.S. Department of Agriculture, 24 July 2025, www.ers.usda.gov/topics/food-nutrition-assistance/supplemental-nutrition-assistance-program-snap/key-statistics-and-research.

Walcott, Lauren, and James Ziegeweid. "Characteristics Report by USDA Provides Insights into Who Participates in SNAP." FRAC Chat, Food Research and Action Center, 27 June 2025, frac.org/blog/characteristics-report-by-usda-provides-insights-into-who-participates-in-snap.

"Welfare Fraud Statistics in the US 2026." The World Data, 27 Jan. 2026, theworlddata.com/welfare-fraud-statistics-in-the-us/.

Whitesell, Anne M. Living off the Government? Race, Gender, and the Politics of Welfare. New York UP, 2024.

Wilson, Hoke. The Extent of Trafficking in the Supplemental Nutrition Assistance Program: 2015–2017. U.S. Department of Agriculture, Sept. 2021. Food and Nutrition Service, www.fna.usda.gov/research/snap/extent-trafficking-2015-2017.

The Body Beyond Death: A Psychological Account of Posthumous Bodily Concern
By Vicky Wang

Abstract

Concern for the fate of one's body after death is a pervasive yet psychologically underexplored aspect of human attitudes toward mortality. This paper argues that such concern cannot be reduced to a generalized fear of death or explained solely as a product of cultural convention. Rather, it emerges from the interaction of embodied selfhood, mortality awareness, cognitive limitations, agency, and symbolic meaning. Drawing on phenomenology, existential psychology, cognitive psychology, and anthropology, the paper argues that the body is psychologically experienced as the primary medium of personhood, allowing the corpse to retain symbolic continuity with the self despite biological death. Posthumous bodily decisions—including burial, cremation, and organ donation—thus function as attempts to preserve dignity, exercise agency, and maintain narrative coherence at the threshold where selfhood appears to end. By integrating the work of Maurice Merleau-Ponty, Ernest Becker, Terror Management Theory, Sigmund Freud, and anthropological accounts of mortuary ritual, this paper offers a unified psychological account of why humans remain deeply concerned with the fate of their bodies after death.

Introduction

If death is the end of subjective experience, concern over the fate of the corpse presents a psychological puzzle. A corpse cannot feel humiliation, confinement, or neglect; it cannot care whether it is buried, cremated, or left to decompose. And yet human beings care intensely about bodily handling—they write funeral instructions, purchase burial plots, donate organs, and recoil at indignities to remain—as though the self lingers even after life has gone.

This concern is often overgeneralized as "fear of death," which is true, but insufficient. Humans do not merely fear death in the abstract, but what death does to the body, because the body is not psychologically experienced as a neutral object. It is the site through which the self is lived, recognized, and sustained. Humans care about the body after death because it is psychologically experienced as the final residue of personhood: the primary vessel of selfhood, social identity, and existential continuity. Anxiety about the corpse is therefore not about flesh, but about the mind's inability to fully imagine its own disappearance, and its need to preserve dignity, control, and meaning at the threshold where selfhood appears to end.

I. The self is embodied before it is abstract

The psychological justification must begin with an anchoring idea: humans do not live as disembodied minds. We know ourselves through our physical form before we theorize identity at all. As Merleau-Ponty argued in Phenomenology of Perception, the body is not an object we inhabit but "our general medium of having a world" (147). Our face, voice, gestures, and posture are not external accessories but part of everyday expression and social identification. Merleau-Ponty's concept of intercorporeality captures this: we recognize others through their

faces, voices, and gestures, and we know ourselves through the responses our bodies elicit (Merleau- Ponty, pt. 4). Even inner life is structured through bodily feelings like hunger, fatigue, pain, attraction, shame, and the slow testimony of ageing. Contemporary psychology supports this intuition, showing that selfhood is not merely housed in the body but partly constituted through bodily experience (Gallagher).

If the self is lived through the body, then the body cannot be perceived as inert matter, even when reason says death has rendered it so. To imagine one's dead body abandoned, violated, or decaying is to imagine the disintegration of the very thing through which one has been a person. The corpse remains the last visible form of the person—the final bodily trace through which a life remains intelligible.

II. The corpse makes annihilation visible

The death of the body becomes psychologically disturbing because it makes mortality visible and undeniable.

Humans have long been evading the idea of death. Ernest Becker argued that human life is structured around managing the terror of death—not just dying, but the knowledge that we will die. "Man is literally split in two," he wrote: we possess "an awareness of his own splendid uniqueness in that he sticks out of nature with a towering majesty, and yet he goes back into the ground a few feet in order to blindly and dumbly rot and disappear forever" (Becker 26). The corpse is the visible proof of this split, revealing the disillusionment that we are exempt from nature's indifference.

Becker, drawing on Otto Rank, argued that this evasion is not pathological but structural. "Repression is normal self-protection," he wrote; what Rank called "partialization"—the capacity to narrow the world for comfortable action—is what allows the "well-adjusted man" to function. "Life is impossible without it" (Becker 178). We filter out the full implications of our mortality just to get through the day. The corpse is hence psychologically devastating because it cannot be partialized. It is a straightforward representation of mortality, in a form that no amount of cognitive filtering can soften.

Terror Management Theory later formalized this insight, proposing that cultural worldviews, moral systems, religion, legacy, and self-esteem buffer the anxiety mortality awareness would otherwise produce. Although the theory remains debated, its central claim—that awareness of mortality exerts measurable effects on human thought and behaviour—has received substantial empirical support (Greenberg et al.). Concern for the body after death is where this anxiety is managed most directly. The corpse reveals what the living mind cannot comfortably accept: that the self can become a thing of radical insignificance. A person who once loved, feared, chose, and spoke can become physically present yet personally absent. That collapses the distinction on which ordinary selfhood depends: the distinction between someone and something.

III. The mind cannot properly imagine its own absence

This existential terror has a cognitive underpinning. Humans can understand death

conceptually, but only so far; they struggle to represent non-existence phenomenologically.

One can abstractly comprehend that, after death, there will be no self to witness or feel anything. But when one attempts to picture selflessness, they do so from a perspective that smuggles the self back in—whether contained within the body or lingering as a spectral observer. Freud observed this directly: "We cannot, indeed, imagine our own death; whenever we try to do so we find that we survive ourselves as spectators. The school of psychoanalysis could thus assert that at bottom no one believes in his own death, which amounts to saying: in the unconscious every one of us is convinced of his immortality" ("Thoughts for the Times on War and Death" 289). The mind cannot evacuate the subject position when picturing an unexperienced death.

This suggests that concern for the body after death stems as much from cognitive limitations as from emotional resonance. The mind simulates the world by projecting some form of subject into it; it struggles to model a condition in which the subject is completely absent. Death is not an event one experiences but the end of the capacity to experience events at all, yet simulations of death keep smuggling the self back in. The corpse presents a failure of cognitive closure, revealing the mind's inability to resolve the ambiguous status of a human form that is recognizably a person yet utterly devoid of personhood. The corpse is the ultimate uncanny object, and the mind recoils.

IV. The body after death becomes a final domain of agency

If the mind cannot imagine its own disappearance, one response is to control the terms under which that disappearance is managed.

Burial preferences, cremation wishes, and organ donation decisions function psychologically as more than logistical arrangements. They impose order on an event defined by helplessness, at the very moment when the owner of the body no longer possesses control over it. Death is where agency collapses absolutely. The body becomes one of the last domains over which the self can exercise authorship in advance.

This is about dignity: to care what happens to one's body is to care that one's final transition is not to be random, degrading, or morally incoherent. "I do not want to be left in a way that contradicts the person I took myself to be" is what many such wishes amount to. Concern for the corpse is concern for the continuity of one's moral identity.

Jeremy Bentham exemplifies this impulse. He requested that his body be preserved and displayed as an "Auto-Icon." His clothed skeleton, topped with a wax head, remains on public display at University College London. This was a carefully articulated posthumous plan: his remains were to be integrated into the intellectual life he had inhabited while alive ("The Auto-Icon"). Bentham is useful not because he is representative, but because he makes explicit a motive that is often implicit: the desire to retain authorship over the symbolic meaning of one's body after death. He ensured his body would remain legible as Bentham rather than vanishing into biological anonymity. This reveals a broader truth: people care about the body after death because they wish to remain coherent to themselves, even where coherence is biologically impossible.

This explains why "death with dignity" debates are so charged. Whether discussing palliative care, assisted dying, or funeral preference, the issue is a struggle over whether a person may continue to shape the meaning of their own ending. The body becomes the last medium through which the self resists reduction into passive matter. But private control alone does not explain why these concerns appear in stable, elaborate forms across cultures. What individuals feel privately is being collectively organized.

V. Ritual and culture rescue the body from meaninglessness

Human beings build institutions, rituals, and symbolic systems to manage posthumous bodily concerns collectively.

Funerary practice is one of culture's deepest organizing functions. The dead body is never treated as merely biological because societies cannot afford to let it remain so. A corpse left as unadorned biological fact threatens the symbolic order of the living, exposing the possibility that a person can become an object.

Funeral rituals transform decomposition into passage, loss into ceremony. Robert Hertz argued that death is a social process in which treatment of the body manages the transition from personhood to absence (Hertz 24). Funerary systems stabilize the boundary between self and non-self. As Becker put it, "Man cannot endure his own littleness unless he can translate it into meaningfulness on the largest possible level" (28). Ritual performs precisely this translation. The corpse, left untreated, announces our insignificance. Ritual transforms it into something that participates in a larger order—cosmic, ancestral, or sacred.

This becomes especially clear when comparing cultures whose practices differ radically in form but not in function. Tibetan sky burial, in which the body is offered to scavenging birds, seems the opposite of Egyptian mummification. One conserves the body; the other relinquishes it. Yet psychologically, they solve the same problem: both prevent the body from becoming meaningless (Gouin; Riggs). Humans do not always care about keeping the body intact. Instead, they care that its destruction is meaningful—that dissolution occurs within a symbolic framework preserving dignity and intelligibility.

VI. Objections considered

Two objections merit attention. The first is that concern for the body after death is entirely socially learned. Cultural scripts undeniably shape bodily concern—funerary practices vary dramatically, and individuals within a culture vary in their degree of concern. But the claim that culture is the sole cause is difficult to sustain. The near-universality of mortuary ritual across historically isolated societies suggests that culture is amplifying a pre-existing psychological tension rather than inventing it wholesale. Culture is not the origin of the concern; it is the machinery for managing it.

A stronger objection originates with Epicurus, who argued that death cannot harm the person who dies because there is no longer any subject capable of experiencing harm: "When we exist, death is not yet present, and when death is present, we no longer exist" (Epicurus 29). On this view, concern for the corpse appears fundamentally confused.

Yet this objection defines the problem too narrowly. The question is not whether the corpse itself can suffer, but why living persons anticipate its future treatment with such concern. The mechanisms discussed throughout this essay—embodiment, mortality awareness, narrative identity, and the difficulty of imagining nonexistence—operate before death occurs. Concern for the corpse does not require the dead to retain interests. It requires only that living persons experience their future as symbolically continuous with themselves. Epicurus may be correct that the corpse cannot be harmed while still leaving unexplained why human beings persistently care about it.

Conclusion

To ask why we care what happens to our body after death is to ask why the mind cannot leave the body behind as easily as reason says it should. We care because the self is lived through the body and the corpse makes mortality visible. We care because imagination cannot represent a world where the body remains while the subject has vanished. And we care because control, dignity, and ritual allow us to resist the reduction of personhood to matter. The corpse occupies an ambiguous position between person and object: biologically inert, yet symbolically saturated with identity. It is the final psychological boundary at which selfhood confronts its disappearance.

Works Cited

Becker, Ernest. The Denial of Death. Free Press, 1973. https://humanposthuman.wordpress.com/wp-content/uploads/2014/01/ernest_becker_the_denial_of_deathbookfi-org.pdf.

Epicurus. "Letter to Menoeceus." The Epicurus Reader: Selected Writings and Testimonia, translated and edited by Brad Inwood and L. P. Gerson, Hackett, 1994, pp. 28-31. PDF.

Freud, Sigmund. "Thoughts for the Times on War and Death." The Standard Edition of the Complete Psychological Works of Sigmund Freud, vol. 14, Hogarth Press, 1915, pp. 273-300. https://ia902907.us.archive.org/17/items/SigmundFreud/Sigmund%20Freud%20%5B1918%5D%20Reflections%20On%20War%20And%20Death%20%28A.%20A.%20Brill%20translation%2C%201918%29.pdf.

Gallagher, Shaun. How the Body Shapes the Mind. Oxford UP, 2005. https://archive.org/details/howbodyshapesmin0000gall/page/n9/ mode/2up.

Greenberg, Jeff, et al. "The Causes and Consequences of a Need for Self-Esteem: A Terror Management Theory." Public Self and Private Self, edited by Roy F. Baumeister, Springer, 1986, pp. 189-212. https://www.researchgate.net/profile/Tom-Pyszczynski/publication/200008816_Public_Self_and_Private_Self/links/548f78840cf2d1800d86276b/Public-Self-and-Private-Self.pdf.

Hertz, Robert. "A Contribution to the Collective Study of the Representation of Death." Death and the Right Hand, translated by Rodney Needham and Claudia Needham, Free Press, 1960, pp. 19-33. Originally published 1907. PDF.

Kastenbaum, Robert. The Psychology of Death. 3rd ed., Springer, 2000. https://books.google.com/books?hl=en&lr=&id=3z9EpgisKOgC.

Merleau-Ponty, Maurice. Phenomenology of Perception. Translated by Donald A. Landes, Routledge, 2012. https://ia600600.us.archive.org/17/items/G.BachelardThePoeticsOfSpace/ Phenomenology%20of%20Perception.pdf.

Riggs, Christina. Unwrapping Ancient Egypt: The Shroud, the Secret, and the Sacred. Bloomsbury, 2014. https://dokumen.pub/qdownload/unwrapping-ancient-egypt-9780857855398-9780857855077-9781474214056-9780857854988.html.

"Sky Burial in Tibet." Global Buddhism, edited by Margaret Gouin, 2010. PDF.

Vess, Matthew, et al. "The Dynamics of Death and Meaning." The Existential Psychology of Death, Texas A&M University, 2020. https://existentialpsych.sites.tamu.edu/wp-content/uploads/sites/152/2020/02/The-Dynamics-of-Death-and-Meaning.pdf.

"The Auto-Icon." UCL Museums and Collections, University College London, https://www.ucl.ac.uk/museums-collections/auto-icon-jeremy-bentham/ auto-icon.

"7 Unique Burial Rituals Across the World." Encyclopædia Britannica, https://www.britannica.com/list/7-unique-burial-rituals-across-the- world.

“The Hand That Hates The Cradle”: Blackpill’s Influence On The Political Ideologies of Young Men By Saahil Khanna

Abstract

This article argues that the blackpill ideology, a byproduct of the digital incel subculture, can dangerously transform the insecurities of young men into political alienation and violence. The blackpill doctrine frames masculine struggles as direct consequences of a rigged, feminist-dominated democracy. When young men believe that failure reflects systemic discrimination rather than personal shortcomings, reactionary action and civic withdrawal become appealing. Examining specific case studies including the 2014 Isla Vista killings and the 2018 Toronto van attack, this paper tracks a three-step question-diagnosis-blame process, through which a young man’s personal shame becomes political grievance.

Introduction

“"If [I] killed 100 people, [I] would set a world record and be placed on top of a leaderboard of mass killers,"” Alek Minassian told forensic psychologists after driving a van into bystanders on Toronto’s Yonge Street, killing ten (Rozdilsky et al.). A post-incident report by York University’s Rozdilsky and Snowden identified that Minassian’s motivations for the terror attack originated from his engagement in the blackpill community. Blackpill ideology posits that a man’s social position is biologically predetermined and immutable, beyond the influence of personal agency or political reform (Preston et al.). This fatalistic worldview is central to the online subculture of involuntary celibates, or "incels”.

Believing that young men are particularly vulnerable to the blackpill ideology, criminologists Solea & Sugiura of the University of Portsmouth sought to understand how digital environments promote ideological extremism to boys. Through a qualitative analysis of 52 pieces of blackpill content on TikTok and 1,657 associated comments, they identified two mechanisms driving incel apathy: 1) the pursuit of masculine dominance as a form of power, and 2) the weaponization of personal failures as proof of institutional discrimination. The ideology represents a new form of political alienation where young men withdraw not because democracy has failed to serve them, but rather because they believe “that there can be no personal solutions to systemic oppression” (Lindsay).

Thus, the blackpill ideology fosters a sense of apathy toward the political system, by which young men use their sense of alienation to justify withdrawal from civic participation. This paper uses a political perspective to study the influence of blackpill on a young man’s civic decision-making.

The Political Gender Gap

Recent studies indicate an expansion of the political gender gap, suggesting that gendered patterns of political participation are becoming more pronounced. A study in the European Sociological Review analyzed left–right beliefs among ~466,000 adolescents across 32 countries (Nennstiel & Hudde). France, Denmark, and Germany display widening gaps: young men are

moving to the right, and young women to the left (Milosav et al). In a 2025 study, Milosav et al. attributed this rift to: 1) a failure of young men to meet traditional expectations of success, such as being a breadwinner; and 2) a rejection of progressive gender norms.

Timing makes these factors decisive for young men. A psychological study led by the University of Calgary found that "adolescence is a critical period as boys are exploring, distilling, and solidifying how gender norms shape and affect their behaviors" (Exner-Cortens et al.). When adolescents feel their masculinity is being constrained, they come to view society as restrictive, fostering political apathy. Yet, research by Pontes et al. suggests that politically disengaged youth tend to choose less conventional forms of participation, such as online activism and social media commentary. While these avenues can be productive and offer a sense of connection, they can also create echo chambers where young men become more receptive to harmful ideologies such as blackpill (Regehr).

This dynamic is reflected in historical political behaviour. In the 2024 U.S. election, the Democratic platform alienated young male voters over "the feminist movement… teaching men to be ashamed of their masculinity," resulting in Trump winning the voter segment by 14 points (David). Trump's rhetoric appealed to the demographic by reinforcing their sense of identity, rather than challenging it. Applying O'Donnell and Shor's research, when young men interpret political parties as undermining their character, it can foster civic disengagement, mirroring patterns seen in incel communities. In this way, the political gender gap reflects not just demographics, but the way young men embrace harmful ideologies, like blackpill, to navigate threats to their masculinity.

Restoring Patriarchy

Blackpill transforms a young man's masculine identity crisis into political alienation by framing personal struggles as betrayals by democratic institutions. O'Donnell of Harvard University and Shor of McGill University conducted a qualitative analysis of 3,658 online comments present in blackpill communities, following the 2018 Toronto van attack. They determined that young men utilize blackpill rhetoric to justify personal failure as a symptom of broader discrimination. O'Donnell and Shor's work is supported by that of Baele et al., who determined that incels believe, "with the rise of feminism and the women's rights movement, men lost their 'rightful entitlement' to dominate women". Thus, blackpill reframes democracy as a matriarchy, where feminist policies marginalize low-status men, while elevating all women.

Today, young men face genuine challenges: 63% of young men are single, as compared to only 34% of their female counterparts; suicide rates are four times higher among young men than young women (Kamarck & Muchnik). Rather than interpreting these statistics as issues addressable through policy change, blackpill asserts them as incontrovertible proof of matriarchal oppression. If a man succeeds, he is being uplifted by unfair policies, rather than individual merit; if he fails, it is because the system is rigged against him (Preston et al.). Either outcome validates the flawed belief that democratic institutions operating on feminist principles cannot serve male interests, influencing young men to reject civic participation or align with reactionary agendas. Political scientists refer to this behaviour as grievance-based identity

formation, where personal strain serves as the foundation of a group's political belonging (Lounela et al.).

Justifying Political Violence

Blackpill ideology encourages young men to use political violence to address personal frustrations. In their analysis, O'Donnell and Shor outlined the ideology's rationale: 1) to attract attention to the community, 2) to seek revenge against women, and 3) to mobilize political change. Incels see the status quo as "irreformable and intolerable", making public violence appear as the only way to challenge biased institutions (Piazza). Young men learn that violence is not criminal deviance but legitimate political resistance against matriarchal democracy.

According to Hoffman et al., there have been approximately 50 violent attacks attributed to incels. The two most famous incidents are: the 2014 Isla Vista killings, in which 22-year-old Elliot Rodger murdered seven; and the aforementioned 2018 Toronto van attack. Rodger's manifesto positioned his killings as a "Day of Retribution" and a broader political statement (White). Four years later, Alek Minassian killed ten in the Toronto van attack, explicitly invoking the 'Incel Rebellion' (Baele et al.). In response to the incident, an incel forum user declared, "This is a political movement, friend. We talk about how people should act and how they should be governed" (O'Donnell and Shor). When young men believe that their biologically predetermined flaws render their democratic voices mute, terrorism becomes a legitimate political response (Lindsay; Piazza). Violence is the ultimate consequence of blackpill-driven political alienation, where a perceived systemic bias leads young men to pursue extreme, ideologically justified action.

Conclusion

Engagement with blackpill communities creates political alienation among adolescent males during a key stage of masculine identity formation. Blackpill reframes personal shortcomings as the result of a flawed democratic system, rather than individual failure. The process operates in three stages: intercepting young men during a period of identity formation, when they ask, "What does it mean to be a man?" (Exner-Cortens et al.); second, diagnosing their insecurities as biologically predetermined weaknesses that render them politically powerless (Preston et al.); and third, blaming democracy itself, particularly feminist policies, for developing a matriarchal political system. This question-diagnosis-blame framework converts a young man's personal shame into political grievance, while offering patriarchal restoration or political violence as lone solutions (O'Donnell and Shor; Piazza). When young men accept this 'path to dignity', they begin to see Rodger's "Day of Retribution" and Minassian's "Incel Rebellion" as legitimate acts of political awakening (Lindsay). For adolescent boys, blackpill poses a unique threat: it recasts feelings of alienation and anger into a framework that validates extremist masculine ideology as a legitimate political stance.

Works Cited

Baele, Stephane J., et al. “From ‘Incel’ to ‘Saint’: Analyzing the Violent Worldview behind the 2018 Toronto Attack.” Terrorism and Political Violence, vol. 33, no. 8, Aug. 2019, pp. 1–25, https://doi.org/https://doi.org/10.1080/09546553.2019.1638256.

Costello, William, and Andrew G Thomas. “Seeing through the Black-Pill: Incels Are Wrong about What People Think of Them.” Personality and Individual Differences, vol. 237, Elsevier BV, Jan. 2025, pp. 113041–41, https://doi.org/10.1016/j.paid.2025.113041.

David, Samuel. “The Kids Aren’t All Right: Investigating Ontological (in)Security Frames in Gen Z Political Behaviour Surrounding the 2024 US Presidential Election.” Doi.Org, University of British Columbia, Oct. 2025, https://doi.org/10.14288/1.0449888. Accessed 8 Oct. 2025.

Exner-Cortens, Deinera, et al. “Preliminary Evaluation of a Gender-Transformative Healthy Relationships Program for Adolescent Boys.” Psychology of Men & Masculinities, Jan. 2019, https://doi.org/10.1037/men0000204. Accessed 16 Oct. 2019.

Hoffman, Bruce, et al. “Assessing the Threat of Incel Violence.” Studies in Conflict & Terrorism, vol. 43, no. 7, Apr. 2020, pp. 565–87, https://doi.org/https://doi.org/10.1080/1057610X.2020.1751459.

Kamarck, Elaine, and Jordan Muchnick. “The Growing Gender Gap among Young People.” Brookings, 23 May 2024, https://www.brookings.edu/articles/the-growing-gender-gap-among-young-people/.

Lindsay, Angus. “Swallowing the Black Pill: Involuntary Celibates’ (Incels) Anti Feminism within Digital Society.” International Journal for Crime, Justice and Social Democracy, vol. 11, no. 1, 2022, pp. 210–24, https://doi.org/10.5204/ijcjsd.2138.

Lounela, Emilia, et al. “‘The Good Years Have Passed and Will Never Come Again’: Political Functions of Nostalgic Fantasies in Incel Discussions.” Social Media + Society, vol. 11, no. 2, SAGE Publishing, Apr. 2025, https://doi.org/10.1177/20563051251332679.

Milosav, Đorđe, et al. “The Youth Gender Gap in Support for the Far Right.” Journal of European Public Policy, Routledge, Mar. 2025, pp. 1–25, https://doi.org/10.1080/13501763.2025.2481181.

Nennstiel, Richard, and Ansgar Hudde. “Is There a Growing Gender Divide among Young Adults in Regard to Ideological Left–Right Self-Placement? Evidence from 32 European Countries.” European Sociological Review, Oxford University Press (OUP), June 2025, https://doi.org/10.1093/esr/jcaf021.

O’Donnell, Catharina, and Eran Shor. “‘This Is a Political Movement, Friend’: Why ‘Incels’ Support Violence.” The British Journal of Sociology, vol. 73, no. 2, Jan. 2022, pp. 336–51, https://doi.org/10.1111/1468-4446.12923.

Piazza, James A. “Incel Beliefs and Support for Political Violence Among U.S. Males: The Mediating Effects of Masculinity Stress, Aggression, Outgroup Hate, and Illiberalism.” Crime & Delinquency, Jan. 2025, https://doi.org/10.1177/00111287241310820.

Pontes, Ana, et al. “Towards a Conceptualization of Young People’s Political Engagement: A Qualitative Focus Group Study.” Societies, vol. 8, no. 1, Mar. 2018, p. 17, https://doi.org/10.3390/soc8010017.

Preston, Kayla, et al. “The Black Pill: New Technology and the Male Supremacy of Involuntarily Celibate Men.” Men and Masculinities, vol. 24, no. 5, May 2021, https://doi.org/10.1177/1097184x211017954.

Regehr, Kaitlyn, et al. “Normalizing Toxicity: The Role of Recommender Algorithms for Young People’s Mental Health and Social Wellbeing.” Frontiers in Psychology, vol. 16, Frontiers Media SA, Nov. 2025, https://doi.org/10.3389/fpsyg.2025.1523649.

Rozdilsky, Jack L., et al. “The 2018 Toronto Van Attack: Understanding the Disaster by Looking at Vulnerability, Tactics, and Motives.” Canadian Journal of Emergency Management, vol. 1, no. 1, Jan. 2021, https://doi.org/10.25071/g87bdy24. Accessed 3 Dec. 2025.

Solea, Anda Iulia, and Lisa Sugiura. “Mainstreaming the Blackpill: Understanding the Incel Community on TikTok.” European Journal on Criminal Policy and Research, vol. 29, no. 3, Springer Science+Business Media, Aug. 2023, pp. 311–36, https://doi.org/10.1007/s10610-023-09559-5.

White, Stephen G. “Case Study: The Isla Vista Campus Community Mass Murder.” Journal of Threat Assessment and Management, vol. 4, no. 1, Mar. 2017, pp. 20–47, https://doi.org/10.1037/tam0000078.

High Schoolers' Confidence and Ability in Medical Misinformation Detection
By Charles Skidmore

Medical misinformation poses a significant threat to public health, as inaccurate or misleading health information can influence individual decision-making, treatment adherence, and trust in medical institutions (Maertens et al., 2023). Unlike other forms of misinformation, medical misinformation is particularly dangerous because it often involves complex scientific concepts, evolves as medical knowledge advances, and can have direct consequences for physical and mental well-being (Indiana University, 2025). As access to health information increasingly occurs through digital and social media platforms, the ability of experts to debunk false claims diminishes and individuals must rely on their own evaluative skills to determine the credibility of medical claims. As a result, individual level cognitive skills, such as critical thinking, are essential in understanding why some people resist misinformation while others fall victim to it.

Critical thinking has been defined as the ability to clarify and evaluate information, interpret evidence, and arrive at informed judgments (Monash University, 2025). Critical thinking skills play a central role in identifying and resisting misinformation, as research indicates that misinformation detection depends heavily on skills such as reasoning, source evaluation, and analytical judgment, all of which are core components of critical thinking (Yarchi et al., 2023). Individuals with lower levels of education are more likely to accept misinformation as accurate, suggesting that formal educational experiences may influence susceptibility to false information (Rolfsen, 2025). As such, strengthening critical thinking skills through education is essential in reducing susceptibility to misinformation and allowing individuals to make more informed and reasoned judgments.

In secondary education, critical thinking skills are largely developed through structured coursework, particularly in academically rigorous classes. Advanced Placement (AP) courses, designed by the College Board, emphasize higher-order cognitive skills such as analytical reading, problem-solving, and evidence-based reasoning (College Board, n.d.). These skills align closely with those required to assess the credibility of medical information, and as a result, AP coursework is often assumed to enhance students' ability to identify misinformation by strengthening evaluative and reasoning skills, where research is currently deficient.

While AP courses are designed to foster critical thinking, the extent to which increased AP participation translates into improved misinformation identification, particularly medical misinformation, remains unclear. Additionally, prior research suggests that overconfidence in one's ability to detect misinformation may paradoxically increase susceptibility to it, as individuals may fail to engage in careful evaluation when they believe they are already skilled at detection, caused by a distorted sense of their own immunity to bias and false information (Adams et al., 2023; Lyons et al., 2021). To complicate this, it's seen that less education results in an increased susceptibility, further expanding the problem (Rolfsen, 2025). This tension between confidence, actual ability, and educational experience underscores the need for further

investigation, as confidence does not always equal competence. Furthermore, there is limited empirical evidence examining whether the quantity of AP coursework a student completes is associated with their confidence in identifying misinformation. Specifically, it remains unclear whether students with heavier AP course loads perceive themselves as more capable of identifying medical misinformation than their peers with fewer AP courses. More crucially, existing research does not sufficiently address whether increased AP participation is associated with *actual ability* to identify misinformation, rather than perceived ability alone. While critical thinking skills are emphasized in AP curricula, it is unknown whether these skills translate into measurable improvements in students' performance on validated misinformation detection assessments. This gap is particularly relevant given evidence suggesting that confidence and actual ability do not always align and may even diverge (Yarchi et al., 2023). In all, it is unclear if greater AP participation increases students' ability to identify medical misinformation, and whether those with greater participation are more confident in such identification.

What's more, there is limited research examining the relationship between confidence and demonstrated ability in misinformation identification among high school students. Understanding whether higher confidence corresponds to greater accuracy, or to increased vulnerability, has important implications for educational practice. If students with higher academic exposure are more confident but not more accurate, this may suggest the need for explicit instruction in misinformation literacy rather than reliance on generalized critical thinking development. Addressing these gaps will contribute to a clearer understanding of how advanced academic coursework relates to both perceived and actual resistance to medical misinformation, particularly during a developmental stage when students increasingly engage with health information independently.

To truly understand how AP affects confidence and ability, this research study will, using an ex post facto design, determine to what extent XXXXXXXXXX High School juniors and seniors during the 2025–2026 school year with differing levels of AP course participation differ in (a) their self-reported confidence in identifying medical misinformation and (b) their demonstrated ability to identify medical misinformation, as measured by the Misinformation Susceptibility Test (MIST-20). Following what's known, it's hypothesized that students who take larger amounts of AP classes will: (a) demonstrate the greatest ability to identify medical misinformation; (b) demonstrate the most confidence in identifying medical misinformation; and (c) demonstrate a greater disparity between confidence and ability than students with lower AP participation. These hypotheses are informed by prior research suggesting that because AP coursework emphasizes analytical skills, students' metacognition will increase their confidence even though AP does not specifically teach misinformation identification.

Methods

This study employed a quantitative, ex post facto research design to determine the relationship between AP participation with confidence and ability in identifying medical misinformation. The ex post facto method was the most optimal method and was chosen because

the AP participation of surveyed individuals had already occurred, and it allowed for statistical analysis between variables. Since this study occurred “after the fact”, in accordance with AP participation, individuals’ participation could not be manipulated at any point when participating in the study, hence ex post facto was chosen (Condron, 2023).

Data was collected at a mid-sized public high school in the United States, specifically at XXXXXXXXXX High School in XXXXXXX XXXXXX School District, during the three weeks before the end of the first semester of the 2025–2026 school year. XXXXXXXXXX High School was chosen due to its selection of 18 of AP courses offered to students for in-person instruction, as well as its opportunity for students to participate in non-offered AP courses online. The research took place during the last three weeks of first semester because this allowed students to receive the maximum amount of instruction within their classes before the study was administered, and the timing prevented any students from exiting any of their courses in order to avoid participating in the study.

Due to the usage of live participants, Institutional Review Board (IRB) approval was secured before the study was conducted. Participants signed a consent form (see Appendix A) before gaining access to the study, and were offered no incentives to partake in the study. Consent was garnered to ensure that participants were informed of the purpose of the study and the personal information they would be providing. Participants were shown a debriefing form (see Appendix B) after the study that detailed how to withdraw from the study if desired and restated the purpose of the study

Participants consisted of 67 high school juniors and seniors. Juniors and seniors were selected because they exhibit greater variation in AP course participation compared to underclassmen. Participants were grouped based on total AP courses taken: (1) low AP participation: 0–1 AP courses; (2) medium AP participation: 2–4 AP courses; and (3) high AP participation: 5 or more AP courses. These groupings are informed by College Board participation distributions and were designed to create comparably sized groups for statistical analysis (College Board, 2018). A sample size of 50 was chosen as the minimum number of respondents to ensure that the study was representative of the whole. Data was collected through a survey administered through Google Forms. The survey included three sections: the first asked participants to select what AP courses they’ve taken or are currently taking using a checklist of all AP courses offered by the college board; the second section had a pre-test questionnaire that asked participants their self-reported confidence in identifying medical misinformation; the last section contained an assessment of their ability to identify misinformation, taken in whole from the 20 Misinformation Susceptibility Test questions, the MIST-20 being a validated instrument designed to assess individuals’ ability to distinguish true from false information (Maertens et al., 2023). To ensure roughly equal numbers of respondents for each grouping of AP participation, the survey was administered through a random sampling of AP and non-AP classes. Permission to use the survey was obtained before administration (see Appendix A). The complete survey can be located in Appendix C for transparency and replicability purposes.

The independent variable in this study is total AP participation, measured as the number of AP courses participated in. The dependent variables consisted of confidence in identifying medical misinformation and actual ability to identify medical misinformation, measured as numbers zero through 10 and zero through 20, respectively. Because the study employed an ex post facto design, the independent variable was measured rather than manipulated.

When administering the survey, participants were verbally informed of the purpose of the study and the information they would be providing while they read the consent forms within the survey. Participants were told the point of every section of survey and the order in which they would answer the questions. Critically, participants were given the confidence section before the MIST-20 questions in order to ensure that confidence wasn't skewed following positive or negative performance. After five minutes, the participants were verbally informed of the purpose of the study once again, and told about the debrief form at the end of the survey, if they had not already reached it. Participants were thanked for their participation, and after exiting the classroom, all responses were examined. Responses indicating implausible AP participation were flagged and verified with school administration when possible before inclusion in analysis. This process was repeated until enough responses were garnered to ensure accurate results. Responses were stored in a password protected document, and respondents personally identifying information was removed to ensure anonymity was maintained.

Once all data was collected from participants, standard statistical analysis was performed to determine the mean, standard deviation, and Cohen's *d* value for each variable in each group. The data also underwent two-tailed, independent-sample t-tests to compare group means in order to determine statistical significance between group means. Statistical significance was assessed to determine whether observed differences were unlikely to be due to chance. As such, this study necessitated a confidence level of 95% ($p<0.05$), the standard value for scientific research owing to it offering the best combination of high confidence and small confidence interval. Welch's independent t-test was used to calculate the t-statistic because it assumes unequal variances when comparing means. Accordingly, the Welch-Satterthwaite equation was used to determine degrees of freedom for each group, as Welch-Satterthwaite is also applied under the assumption of unequal variances.

Three t-tests compared confidence levels across AP participation groupings, and three additional t-tests compared MIST-20 scores across the same groupings. The groupings in question included high participation versus low participation, high participation versus medium participation, and medium participation versus low participation. Using the degrees of freedom and t-statistic for each group, the critical t-value was calculated. If the corresponding p-value to each critical value was less than 0.05, the results were determined to be statistically significant. If otherwise, no significant difference was found between group means. Each of these analysis steps was curated to provide an unbiased environment where data could be ethically analyzed and ensure accurate results so correct conclusions could be drawn.

Results

The purpose of this study was to see how differing levels of AP participation affect students' confidence and ability in identifying medical misinformation. Since sample size across the three groups of AP participation was unequal, the t-tests were performed under the assumption of unequal variance in the spread of the data.

The study revealed that all the differences between the means of low and medium AP, as well as medium and high AP were not statistically significant with p values higher than .05, while the difference in means between low and high were statistically significant with a p value of less than .05. Table 3 shows that the distance between group means of low and high were .960 and .977 standard deviation values, as measured by Cohen's *d*. Cohen's *d* values near 1.0 indicate a large effect size, suggesting a substantial difference between low and high AP participation. while Tables 1 and 2 show that between medium/high and medium/low it was closer to one half of a standard deviation.

Table 1

Comparing confidence versus ability of low and medium AP participation.

AP Participation	Low		Medium		Critical T Value	Degrees of Freedom	P Value	Cohen's *d*
	M	SD	M	SD				
Ability	13.750	3.239	15.235	2.728	1.648	38.428	>.05	.485
Confidence	4.357	1.967	5.471	1.772	1.961	36.717	>.05	.587

Note: M=Mean, SD=Standard deviation

Table 2

Comparing confidence versus ability of medium and high AP participation.

AP Participation	High		Medium		Critical T Value	Degrees of Freedom	P Value	Cohen's *d*
	M	SD	M	SD				
Ability	16.728	2.914	15.235	2.728	1.645	35.579	>.05	.527
Confidence	6.318	2.056	5.471	1.772	1.380	36.505	>.05	.437

Note: M=Mean, SD=Standard deviation

Table 3

Comparing confidence versus ability of low and high AP participation.

AP Participation	Low		High		Critical T Value	Degrees of Freedom	P Value	Cohen's *d*
	M	SD	M	SD				
Ability	16.728	2.914	13.750	3.239	3.415	47.065	<.05	.960
Confidence	6.318	2.056	4.357	1.967	3.412	44.261	<.05	.977

Note: M=Mean, SD=Standard deviation

The data showed that students with low AP participation had the lowest average score on the MIST-20, 13.75, as well as having the lowest average confidence in identifying medical misinformation, 4.357. The trend continues upward, with medium students having the second highest average confidence and ability in identifying medical misinformation. Lastly, students with high AP participation had the highest average score on the MIST-20 with a mean value of 16.728, and the highest confidence in identifying medical misinformation with a mean value of 6.318. Notably, while medium AP participation had no statistically significant data when compared to the other groups, its mean values for confidence and ability—5.471 and 15.234 respectively—were near directly in between the corresponding mean values for low and high AP Participation.

Overall, the data showed that the difference in the means of low versus high AP participation for both confidence and ability is statistically significant, while the differences in the means for low versus medium AP, and medium versus high AP, were not statistically significant.

Discussion

The overall goal of the research was to find out if AP participation correlates with confidence and ability in identifying medical misinformation. The research shows that there is a statistically significant difference between the means of high and low participating AP students. This means that students with high levels of AP participation are more capable and confident in identifying medical misinformation than students who have low levels of AP participation. These results partially support the hypotheses proposed in the study. The first two hypotheses—high AP students having greater confidence and ability at identifying medical misinformation—were directly supported by the data, suggesting that increased exposure to AP coursework strengthens students' evaluative abilities and their perception of such abilities. The third hypothesis—high AP students showing the greatest disparity between confidence and ability—was not supported by the data, indicating that perceived competence is aligned with actual ability. In addition to statistical significance, Cohen's *d* values for these groups were approximately .96, which is generally interpreted as a large effect size. This indicates that the difference in means between the two groups is not only statistically significant but practically meaningful, A large effect size indicates that there are meaningful differences in students' identification capabilities rather than small or trivial differences.

One possible explanation for the observed differences is the greater amount of critical thinking skills among high AP students. As noted in the literature, critical thinking skills involve the ability to clarify and evaluate information, interpret evidence, and arrive at informed judgments (Monash University, 2025). Since AP is designed to teach these skills, they likely translated over into the discipline of misinformation identification, including medical Misinformation.

The findings of this study contradict that of Lyons et al. who noted that the more confident a person was that they were able to identify misinformation, the more susceptible they were to misinformation. It also contradicts the findings of Yarchi et al. whose findings coincide with that of Lyons et al., saying that confidence and ability do not always align and perhaps even diverge. A possible explanation for this discrepancy is that Lyons et al. and Yarchi et al. conducted their study among broader adult populations, whereas the present study engaged specifically with high school students enrolled in AP courses. Students enrolled in AP courses regularly practice source evaluation and reasoning skills, potentially reducing the overconfidence bias noted by others. In such AP environments, confidence may develop alongside ability rather than independently of it. In contrast, this study's findings agree with the findings of Rolfsen, who argues that lack of formal education experiences may influence susceptibility to false information, and that the less education an individual possesses, the more likely they are to accept misinformation as true.

Unexpectedly, the difference in means between low versus medium AP and medium versus high AP were not statistically significant, yet the means for both confidence and ability for medium AP were almost directly in between the corresponding means of low and high AP. This suggests a gradual increase in and linear relationship between confidence and ability across the three groups. The lack of statistical significance can be attributed to limited statistical power, rather than the absence of a true relationship. Due to the medium sample only containing 17 participants, variability in the data may have reduced the likelihood of detecting any statistically significant differences despite observable trends in the data.

Among the research, there were found to be four major limitations. The first is the questions on the MIST-20 test. The MIST-20 questions are designed to identify ones' ability to identify misinformation as a whole, and is not specific to medical misinformation, although there are many questions related to medicine. Consequently, the assessment may not perfectly reflect students' ability to evaluate medical misinformation specifically as opposed to misinformation in broader contexts, as medical misinformation detection can rely on specialized scientific knowledge, continuously evolving evidence, and technical terminology. It is to be noted that there is a correlation between specific misinformation and general misinformation identification, but due to the deficiency in pure medically misinformative questions, the true extent of AP's ability to aid in detection is, while still largely accurate, slightly muddled.

The second major limitation is the limitation of sample size. While the sample size overall was large (N=67), the sample sizes for individual groups differed (N=28, low AP; N=17 medium AP; N=22, high AP). The reason for this discrepancy is that there was limited time and

access for administration of the survey, as well as a limited number of people who fall into these categories, making it harder to achieve large sample sizes for each group. This limited generalizability and may have led to an over or underestimation of the true size of the effect, due to smaller sample sizes being prone to greater variances in the data, leading to the data not being representative of the whole. As such, the data of the low AP participating groups can be more accurately extrapolated to the whole constituent population, because of the sample size being 11 persons greater than the medium sample and six persons greater than the high sample. Even so, no group breaks the threshold of 50 people to ensure generalizability.

The third major limitation is that during analysis, the number of AP courses was taken into account, while not the type of AP course. This means that by this study it could not be determined whether there are specific AP courses that increase ones' ability to identify medical misinformation, as there could be a different effect with AP STEM courses as compared to AP English or history courses. These effects, if any, would likely result from AP English and history courses focusing more on analyzing texts, writing skills, and use of rhetoric, all of which are important skills in developing critical thinking. AP STEM courses focus more on mathematical skills and course-specific knowledge, which is less applicable outside of their respective disciplines. However, due to the nature of this study these effects, if any, could not be determined.

The fourth limitation is the limitation of selection bias in AP course enrollment. Students who enroll in multiple AP courses may possess higher levels of academic motivation or cognitive ability as compared to their peers, affecting internal validity (causation). This could inflate the relationship between AP coursework and identification capabilities, as it could be measuring student characteristics in place of the effects of AP coursework. As a result, the relationship observed between AP participation and misinformation identification may be due to pre-existing differences rather than the direct influence of AP coursework on students.

The findings of this study have important implications for educational practices. As students increasingly encounter health information online and through social media, the ability to critically evaluate these claims becomes increasingly important and a greater part of digital literacy. If participation in AP level coursework is associated with increased ability to identify medical misinformation, then incorporation of similar analytical and evaluative techniques into general coursework and curricula may strengthen students' resistance to false or misleading Information.

Future research can be targeted to filling in the gaps of the aforementioned limitations. This includes creating a misinformation test similar to that of the MIST-20, but with only medical misinformation. Maertens et al. includes a description of how the MIST-20 was created, and following their creation methodology similar tests could be designed and administered, all with the same credibility and accuracy as the original MIST-20. Future research could also employ a similar method to this one but instead of counting the quantity of AP courses taken, the research could be done with respect to the type of AP class to determine if subject, rather than quantity, determines ability to detect medical misinformation. One last area for future

research includes longitudinal studies, where AP participation and ability to identify false medical claims for individual students are tracked over the course of their high school years, to figure out if increases in AP participation over time is correlated with measurable improvements in medical misinformation detection.

Conclusion

Because of the lack of knowledge regarding whether AP participation correlates with ability to identify medical misinformation and confidence in identifying it, particularly regarding how AP participation relates to both students' confidence and their actual ability to identify medical misinformation, the overall purpose of this study was to examine whether greater AP participation is associated with more confidence in and ability to identify medical misinformation. Through this study's ex post facto design, it was found that students who took the highest numbers of AP classes had the highest average levels of both confidence and ability regarding medical misinformation, suggesting that AP participation is associated with stronger evaluative skills relating to evaluating medical misinformation. It also found that students who had the lowest levels of AP participation had the lowest average confidence and ability ratings. These findings and the study overall suggest that greater participation in AP coursework is associated with a higher confidence and ability regarding their skill in identifying it. Although additional research is needed to clarify the mechanisms underlying this relationship, the results of this study provide preliminary evidence that advanced coursework like AP coursework may play a role in strengthening students' evaluative skills in the identification of medical misinformation.

This research is important, as young individuals like high school students are increasingly exposed to harmful medical misinformation through digital media platforms, making the ability to critically evaluate medical claims an increasingly important component of students' health and media literacy. This knowledge is particularly useful for educators, curriculum designers, and policymakers, as they suggest that incorporating more evidence-based reasoning and evaluative skills into greater curricula could decrease susceptibility to misinformation. Future research within this discipline can employ longitudinal studies, to track how continuous AP participation over time changes susceptibility to medical misinformation. Future research can also examine the effects of specific AP classes, comparing AP STEM to AP English and history courses to determine if there is a specific type of AP course that reinforces the ability to identify medical misinformation.

Overall, these findings suggest that resistance to misinformation not only depends on individual access to accurate information, but also the development and use of evaluative and critical thinking skills. This underscores the importance of educational environments in how individuals engage with constantly evolving health and medical information, suggesting that the development of these evaluative and critical thinking skills is a crucial first step to addressing medical misinformation at the societal level.

Works Cited

Adams, Zoë, et al. “(Why) Is Misinformation a Problem?” Perspectives on Psychological Science, vol. 18, no. 6, 16 Feb. 2023, pp. 1436–1463, https://journals.sagepub.com/doi/full/10.1177/17456916221141344, 10.1177/17456916221141344.

College Board. “How and Why to Take Advanced High School Classes - BigFuture.” Bigfuture.Collegeboard.Org, https://bigfuture.collegeboard.org/plan-for-college/stand-out-in-high-school/how-and-why-to-take-advanced-high-school-classes. Accessed 9 Oct. 2025.

College Board. NUMBER of AP EXAMS per STUDENT. 2018. https://reports.collegeboard.org/media/pdf/Number-of-Exams-Per-Student_9.pdf

Condron, Nate. “Ex Post Facto Research.” My Dissertation Editor, 28 Feb. 2023, https://mydissertationeditor.com/ex-post-facto-research/.

Indiana University. “Health Misinformation: How to Identify Reliable Sources Online.” IU Health, Indiana University Health, 10 Apr. 2025, https://iuhealth.org/thrive/health-misinformation-how-to-identify-reliable-sources-online.

Lyons, Benjamin A., et al. “Overconfidence in News Judgments Is Associated With False News Susceptibility.” Proceedings of the National Academy of Sciences, vol. 118, no. 23, 8 June 2021, https://www.pnas.org/content/118/23/e2019527118, 10.1073/pnas.2019527118.

Maertens, Rakoen, et al. “The Misinformation Susceptibility Test (MIST): A Psychometrically Validated Measure of News Veracity Discernment.” Behavior Research Methods, vol. 56, 29 June 2023, 10.3758/s13428-023-02124-2.

Monash University. “What Is Critical Thinking?” Student Academic Success, Monash University, 2025, https://www.monash.edu/student-academic-success/enhance-your-thinking/critical-thinking/what-is-critical-thinking. Accessed 8 Oct. 2025.

Rolfsen, Erik. “Who Falls for Fake News? Study Reveals Surprising Patterns - Neuroscience News.” Neuroscience News, 9 Apr. 2025, https://neurosciencenews.com/fake-news-belief-psychology-28580/.

Yarchi, Moran, et al. “Perceived Versus Actual Ability to Identify Fake News: Evidence From Israel’s 2019-2020 Elections.” International Journal of Communication, vol. 17, 2023, pp. 4974–4996, https://ijoc.org/index.php/ijoc/article/viewFile/20796/4275.

Annihilation and Delegation: Comparing Fear Frames in Cold War Nuclear and Contemporary AI Discourse By Eleanor Chen

Abstract

This study examines fear expressed in Cold War nuclear discourse and contemporary artificial-intelligence (AI) discourse using LLM-assisted content analysis. The corpus included 60 Cold War documents and two AI datasets of 120 documents each, collected for 2025 and 2026. Each document was coded 25 times on a 1-10 Likert-style fear-intensity scale and across 10 fear categories; repeated ratings were averaged within documents before analysis. For the primary overall fear-intensity outcome, Cold War documents scored somewhat higher than 2026 AI documents (M = 6.641 vs. 6.121), but the difference did not reach the conventional .05 significance threshold: mean difference = 0.520, t(105.93) = 1.97, p = .052, 95% CI [-0.004, 1.044], Hedges' g = 0.32. The 2025 and 2026 AI means were nearly identical (6.132 vs. 6.121), mean difference = 0.011, t(236.17) = 0.06, p = .957, 95% CI [-0.383, 0.405], Hedges' g = 0.01. After Holm adjustment across the 10 category tests, Cold War documents were higher in Survival, Extinction, and Geopolitical Instability, whereas 2026 AI documents were higher in Economic Crisis, Surveillance, Delegated Agency/Loss of Human Control, and Information Disorder. Geopolitical Instability was the only category that differed significantly between the 2025 and 2026 AI samples after adjustment. Because the purposive corpora differed in period, genre, geography, and collection method, the findings describe patterns in the sampled discourse rather than the prevalence of fear among the general public. The strongest result was a thematic contrast between annihilation-oriented nuclear fear and AI concerns involving displacement, monitoring, misinformation, delegated judgment, and loss of control.

Keywords artificial intelligence, nuclear anxiety, technological risk, content analysis, risk perception, public discourse

1. Introduction

Its deadly and wide-spread consequences were demonstrated in the destruction of entire cities such as Hiroshima and Nagasaki to the Chernobyl incident. And with the nuclear arms race and radioactive fallout, it showed that nuclear technology could wipe out entire civilizations. Through public education films, shelters, and exercises, Cold War civil-defense activities introduced this threat into daily life. Residents in certain locations were forced to seek shelter when Operation Alert was implemented countrywide in 1954 while authorities assessed their backup plans and communications (American Experience, 2019). As a result, the dread of nuclear war extended beyond widespread devastation. Rather, it was supported by organizations, media, and strategies that educated people how to prepare for and handle disasters.

Today, artificial intelligence (AI) is the greatest cause of technological fear in our society with researchers noting that it stems from job insecurity, loss of human control, and loss of privacy (Cave et al., 2019). Public attitudes are mixed rather than uniformly fearful. A large U.S. survey found that the public was substantially less optimistic about AI than surveyed AI experts.

Both groups found common ground in the want for greater personal control and worried that regulation could be too weak (McClain et al., 2025). Research on public narratives also shows that AI attitudes are shaped by recurring cultural images, including autonomous machines, replacement, and loss of control (Cave et al., 2019). Unlike nuclear weapons, AI usually appears not as a single visible instrument of destruction but as a collection of systems embedded in work, education, medicine, media, government, and daily communication.

This study asks: How does fear expressed in Cold War nuclear discourse compare with fear expressed in contemporary AI discourse? The comparison does not assume that identical fear simply moved from one technology to another. Nuclear weapons and AI create different hazards, operate through different institutions, and produce different consequences. Nevertheless, both periods generated substantial public and institutional discussion of technological risk, and both involved uncertainty, limited control, moral disruption, and concern about large-scale social consequences. The analysis therefore compares shared dimensions of expressed fear while preserving the historical differences between the two technologies.

1.1 Theoretical Framework

The study draws on appraisal theory and risk-perception research. Appraisal theory explains emotion as a response to how people evaluate a situation's relevance, harmfulness, predictability, controllability, and compatibility with personal or social goals (Lazarus, 1991). A technology is more likely to be described fearfully when it appears dangerous, difficult to understand, morally disruptive, or beyond effective control. These dimensions provide a common framework for comparing nuclear and AI discourse without treating the underlying technologies as equivalent.

The psychometric paradigm further shows that perceived risk is shaped not only by probability but also by qualities such as dread, catastrophic potential, involuntariness, unfamiliarity, and lack of control (Slovic, 1987). Nuclear weapons score highly on dread and catastrophic potential because they can cause immediate mass death and long-term environmental harm. AI often scores highly on unfamiliarity and perceived uncontrollability because its operations can be opaque, rapidly changing, and distributed across many institutions. This distinction supports the study's central contrast between annihilation-oriented fear and delegation-oriented fear.

1.2 Previous Research and Methodological Context

Historical research treats Cold War nuclear anxiety as both an emotional response to possible annihilation and a product of organized public communication. Boyer (1994) examines the cultural consequences of the atomic bomb in the years immediately following Hiroshima, showing how Americans struggled with the weapon’s morality and whether nuclear technology should be controlled, expanded for deterrence, or eliminated through disarmament. His study demonstrates that many of the arguments that later shaped nuclear politics had already emerged at the beginning of the atomic age. Oakes (1995) focuses more specifically on civil-defense policy: programs involving preparedness, self-discipline, and household responsibility. He argues

that these programs offered little realistic protection from thermonuclear destruction. They were intended to control public panic and develop the emotional resolve needed to support Cold War national-security policies. McEnaney (2000) extends this argument by examining how civil defense entered ordinary homes. Bomb shelters, survival supplies, volunteer programs, and school drills placed responsibility for nuclear preparedness on families, turning domestic life into part of the national-defense system while also producing public debate over how far Cold War militarization should reach. Together, these studies show that nuclear fear was simultaneously catastrophic and normalized: Americans were encouraged to imagine civilization-level destruction while also treating preparation for it as a routine personal and household responsibility.

There is a less consistent pattern in research on public perceptions of AI. Public attitudes toward AI are shaped by familiar cultural stories as well as uncertainty about what the technology can actually do. People tend to understand AI by fearing job losses and reduction of human control (Cave et al, 2019). At the same time, people can feel both optimistic and worried about AI (Schepman and Rodway, 2020, 2023). In cases such as employment, surveillance, and misinformation, the public is more cautious than experts (McClain et al., 2025). These findings indicate that the public's discussion of AI involves a mix of emotions rather than representing a single negative reaction.

Framing theory further emphasizes that communicators select particular aspects of an issue and make them more salient, thereby shaping how audiences understand problems, causes, moral judgments, and possible responses (Entman, 1993). In the present study, media and institutional texts are therefore treated as representations of risk, not as direct measurements of population-level emotion.

Automated text analysis can extend traditional content analysis to larger corpora, but its validity depends on task design. Chew et al. LLM-assisted content analysis is useful not because the model can replace researchers, but because it can apply a researcher-designed coding system across a large dataset more efficiently. Its reliability depends on how clearly the categories are defined, how carefully the prompt is tested, and whether the model's decisions are checked against human judgment. Although ChatGPT has done well on some annotation tasks, that success relies heavily on the type of text, the clarity of the categories, and subjectivity (Chew et al., 2023; Gilardi et al., 2023; Ziems et al., 2024). A model may classify simple categories consistently. This makes it hard to apply high accuracy from one study to another. However, with nuanced cases, the accuracy is not as high. For this reason, LLM-assisted coding should be seen as a controlled research method and not a replacement. Clear model settings, repeated testing, and independent validation help determine if the results show stable interpretation or are influenced by prompt wording and model variability (Törnberg, 2024). In LLM-assisted research, a matched human-coded sample can reveal categories where the model performs well or not. In the case it doesn't perform well, that means there needs to be revision in the prompt or definitions. The human review in this study is therefore treated as an exploratory diagnostic check, not as a complete reliability study.

2. Materials and Methods

Three purposive corpora were assembled: 60 Cold War nuclear documents from 1945-1989, 120 AI documents from January-June 2025, and 120 AI documents from January-June 2026. The Cold War corpus included presidential and congressional speeches, declassified government reports, newspaper articles, memoirs, testimony, and civil-defense materials concerning nuclear weapons, testing, fallout, preparedness, and geopolitical conflict. Candidate documents were screened for period, topical relevance, substantive content, and duplication, but they were not assigned fear scores before LLM coding. The None category was retained for accepted documents that ultimately contained little or no substantive fear language. The AI corpora were discovered through a BigQuery-based workflow using GDELT data and topic queries related to employment, autonomy, misinformation, surveillance, national security, and infrastructure. The workflow downloaded available article text, removed duplicate or unusable records, and saved each source as a separate text file (Google Cloud, n.d.; The GDELT Project, n.d.). Because source selection emphasized risk-related discourse and the corpora were not matched by genre or geography, the study compares how fear was framed within selected texts; it does not estimate how common fear was across all media coverage or among all Americans.

The author developed the codebook, category definitions, decision rules, and fixed prompt, while GPT-4o mini performed the large-scale coding. The model was selected because its cost and throughput made 25 repeated assessments per document feasible. The author also conducted an exploratory human review of six Cold War documents and 12 documents from the 2026 AI corpus. The human-reviewed subset means were compared descriptively with the corresponding full-corpus LLM means, but the original worksheet did not preserve matched source-level LLM scores for those exact documents. Formal human-LLM agreement statistics therefore could not be calculated. The human review is reported only as a transparency and diagnostic check; it was not used as evidence of intercoder reliability or to modify the primary results. Appendix A documents the reviewed texts, descriptive comparisons, and this limitation.

The Cold War corpus was manually curated because sources from 1945-1989 are not consistently searchable through modern scraping systems and often survive as scanned newspaper pages, archival PDFs, speeches, memoranda, and congressional records with uneven metadata or OCR quality. The Library of Congress and National Security Archive served primarily as repositories for materials originally produced by varied newspapers, journalists, scientists, elected officials, military personnel, and government agencies. Documents were included when they were contemporaneous primary sources that substantially addressed nuclear technology and contained an argument, warning, judgment, recommendation, or expression of concern. Modern retrospectives, duplicate texts, sources outside the selected period, and purely administrative or fragmentary records were excluded. The resulting purposive sample is not statistically representative of all Americans or all Cold War publications, but it is suitable for identifying patterns within a documented collection of nuclear discourse.

The coding framework contained 10 categories, each represented as a source-level proportion from 0 to 1 after repeated coding: Survival, Existential Dread, Extinction, Economic Crisis, Geopolitical Instability, Surveillance, Delegated Agency/Loss of Human Control, Information Disorder, Infrastructure Anxiety, and None. Survival captured threats to bodily safety or immediate life. Existential Dread captured purposelessness, identity loss, human irrelevance, or loss of uniqueness. Extinction captured species-level annihilation or the end of civilization. Economic Crisis captured job displacement, labor disruption, deprivation, or financial harm. Geopolitical Instability captured war, arms races, national-security threats, political disorder, or societal collapse. Surveillance captured monitoring, privacy loss, tracking, data control, or reduced autonomy. Delegated Agency/Loss of Human Control captured the transfer of judgment, authority, creativity, labor, military power, or governance to AI systems. Information Disorder captures misinformation, deepfakes, synthetic media, manipulation, deception, or loss of trust in public information. Infrastructure Anxiety captured concerns about data centers, electricity, water, land, chips, grids, environmental strain, or local community effects. None was assigned only when no substantive fear category was detected.

Each document was submitted to the same prompt 25 times. Repeated coding was used because model outputs are probabilistic and interpretive categories can overlap, especially in borderline cases between limited concern and None. The 25 Likert ratings were averaged to create one source-level fear-intensity score, and each binary category indicator was averaged to create a source-level category proportion. The repeated runs were treated as measurements of the same document, not as independent observations. Appendix B documents preprocessing, model settings, response parsing, aggregation, and quality control.

Two-tailed Welch independent-samples t-tests compared the Cold War and 2026 AI corpora and the 2025 and 2026 AI corpora. The overall Likert score was designated as the primary outcome, while the Holm procedure was applied separately to the 10 category tests in each comparison. For the two primary outcomes, the paper reports group sample sizes, Welch-Satterthwaite degrees of freedom, 95% confidence intervals for the mean difference, and Hedges' g. Mean differences were calculated as the first named group minus the second. Hedges' g was calculated from the pooled source-level standard deviation with a small-sample correction. Category-level results are interpreted using Holm-adjusted p-values. Appendix C provides the formulas and reporting details.

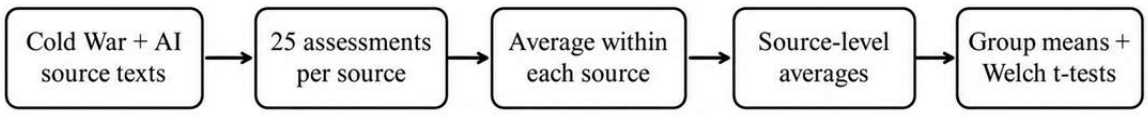


Figure 1. Workflow used to prepare source texts for analysis. Each document was assessed 25 times with the same LLM-assisted coding prompt. The repeated ratings were averaged within each document to create one source-level observation, after which group means and Welch independent-samples t-tests were calculated.

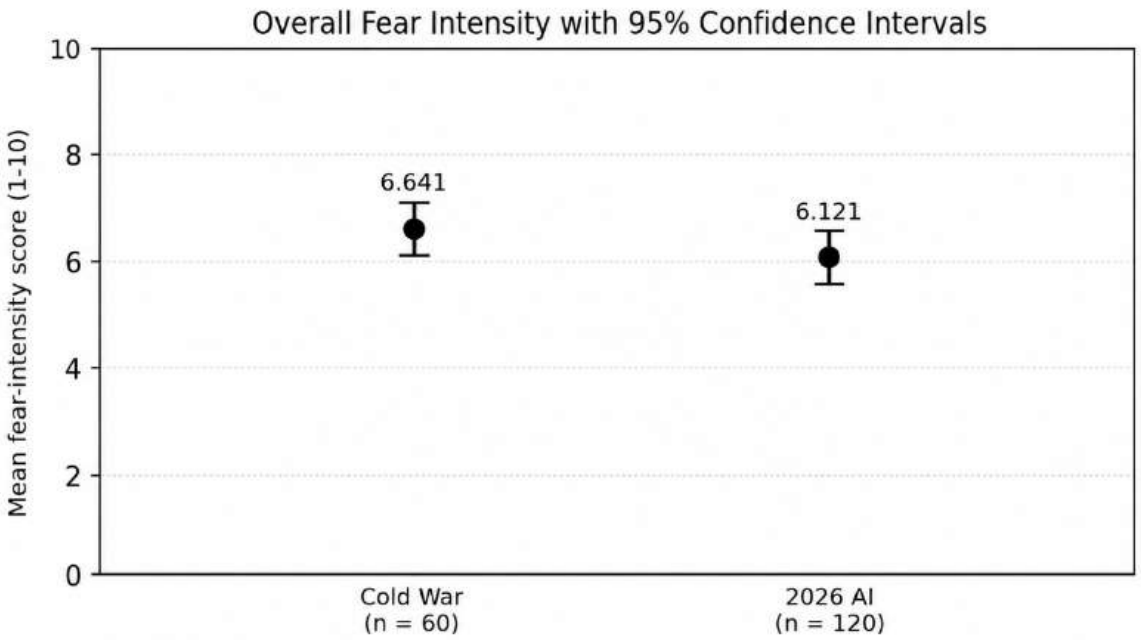


Figure 2. Mean source-level fear-intensity ratings and 95% confidence intervals for the Cold War and 2026 AI corpora. The Cold War mean was 6.641 and the 2026 AI mean was 6.121. The mean difference was small and did not reach the conventional .05 threshold, t(105.93) = 1.97, p = .052, 95% CI [-0.004, 1.044], Hedges' g = 0.32.

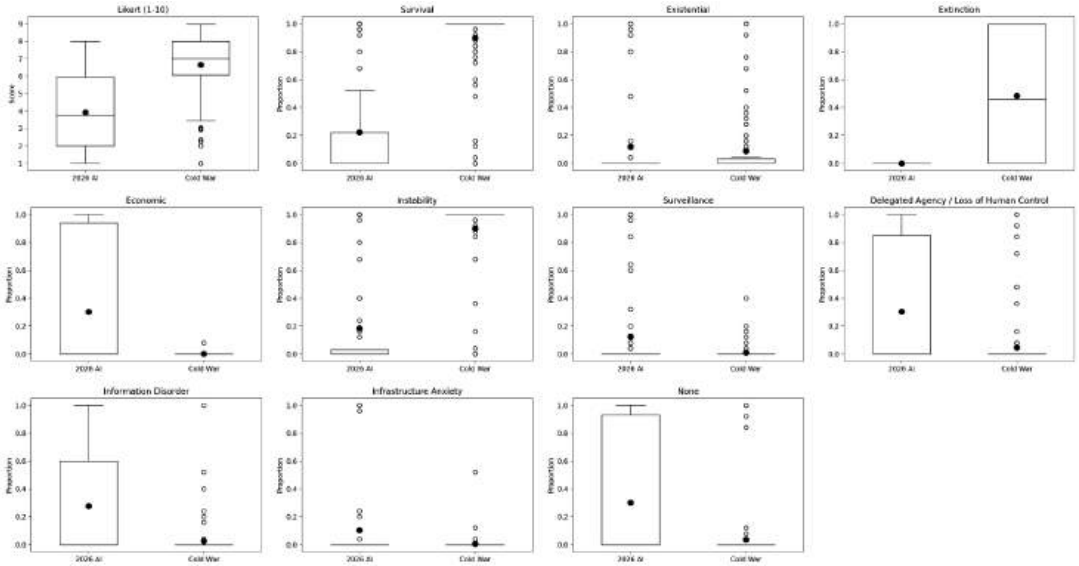


Figure 3. Source-level distributions for overall fear intensity and selected fear categories in the Cold War and 2026 AI corpora. Cold War documents show stronger emphasis on Survival and Extinction, whereas 2026 AI documents show stronger emphasis on Economic Crisis, Delegated Agency/Loss of Human Control, and Information Disorder. The plots describe variation across documents after repeated LLM assessments were averaged within sources.

3. Results

3.1 Cold War and 2026 AI Comparison

The Cold War corpus (n = 60) had a mean fear-intensity score of 6.641 (SD = 1.736), compared with 6.121 (SD = 1.532) for the 2026 AI corpus (n = 120). The most prominent Cold War categories were Geopolitical Instability (0.899), Survival (0.898), and Extinction (0.483). The most prominent 2026 AI categories were Delegated Agency/Loss of Human Control (0.682), Information Disorder (0.659), Survival (0.557), and Geopolitical Instability (0.383). Because coding was multi-label, category proportions were not mutually exclusive and do not sum to 1.00.

For the primary overall fear-intensity outcome, the mean difference between Cold War and 2026 AI documents was 0.520 points, t(105.93) = 1.97, p = .052, 95% CI [-0.004, 1.044], Hedges' g = 0.32. The confidence interval narrowly includes zero, and the standardized effect is small; the study therefore does not claim a statistically significant difference in total fear intensity. The category results showed a clearer thematic separation. After Holm adjustment, Cold War documents were higher in Survival, Extinction, and Geopolitical Instability, whereas 2026 AI documents were higher in Economic Crisis, Surveillance, Delegated Agency/Loss of Human Control, and Information Disorder. Existential Dread, Infrastructure Anxiety, and None did not differ significantly after adjustment.

Table 1. Mean source-level fear-intensity and category scores for Cold War (n = 60) and 2026 AI documents (n = 120). The Likert score was the primary outcome and is reported with its unadjusted Welch-test p-value. Holm adjustment was applied to the 10 category tests.

Measure	**Cold War (n = 60)**	**2026 AI (n = 120)**	**Raw p-value**	**Holm-adjusted p-value**	**Significant?**
Likert (1-10)	6.641	6.121	0.052	NA	No
Survival (0-1)	0.898	0.557	7.61E-12	4.57E-11	Yes
Existential Dread (0-1)	0.089	0.135	0.202	0.202	No
Extinction (0-1)	0.483	0.007	1.19E-19	8.33E-19	Yes
Economic Crisis (0-1)	0.001	0.156	3.87E-6	1.55E-5	Yes
Geopolitical Instability (0-1)	0.899	0.383	9.41E-21	7.53E-20	Yes
Surveillance (0-1)	0.010	0.168	1.53E-7	7.65E-7	Yes
Delegated Agency/Loss of Human Control (0-1)	0.045	0.682	8.86E-35	8.86E-34	Yes

Measure	Cold War (n = 60)	2026 AI (n = 120)	Raw p-value	Holm-adjusted p-value	Significant?
Information Disorder (0-1)	0.024	0.659	1.03E-30	9.27E-30	Yes
Infrastructure Anxiety (0-1)	0.006	0.051	0.020	0.060	No
None (0-1)	0.035	0.006	0.095	0.190	No

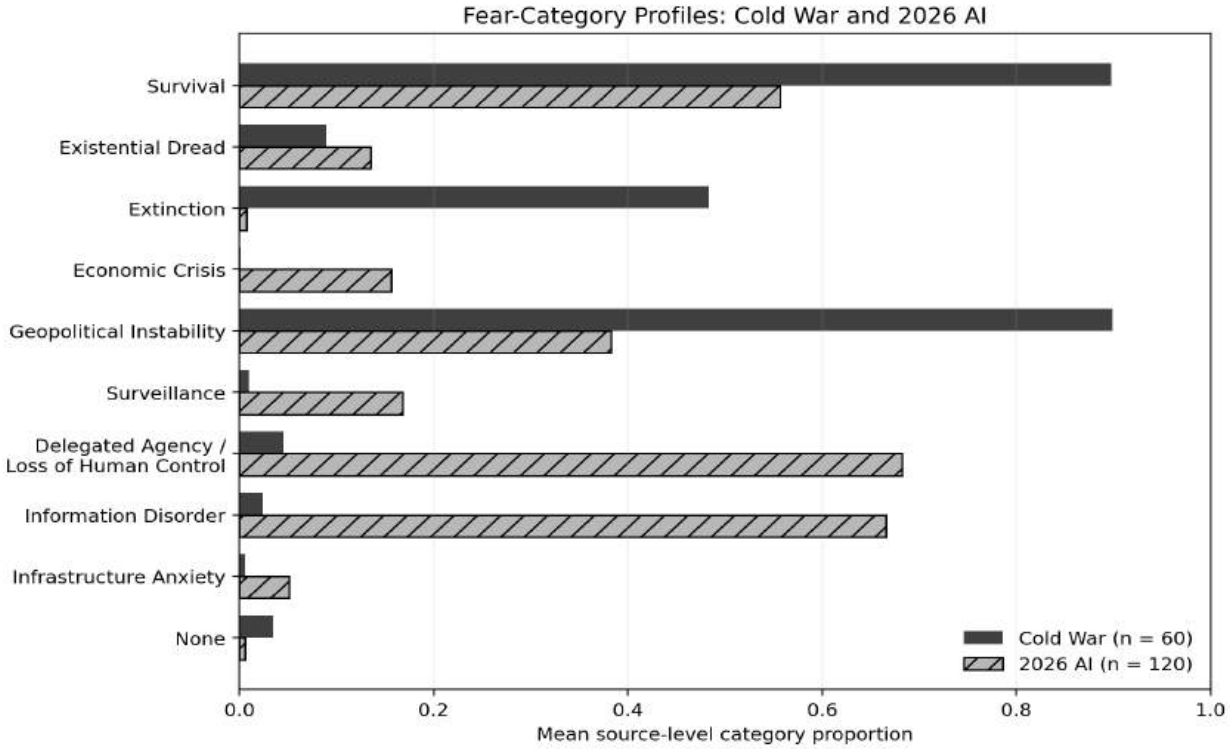


Figure 4. Mean fear-category proportions in the Cold War and 2026 AI corpora. Cold War documents were substantially higher in Survival, Extinction, and Geopolitical Instability. The 2026 AI documents were higher in Economic Crisis, Surveillance, Delegated Agency/Loss of Human Control, and Information Disorder. These seven category differences remained significant after Holm adjustment.

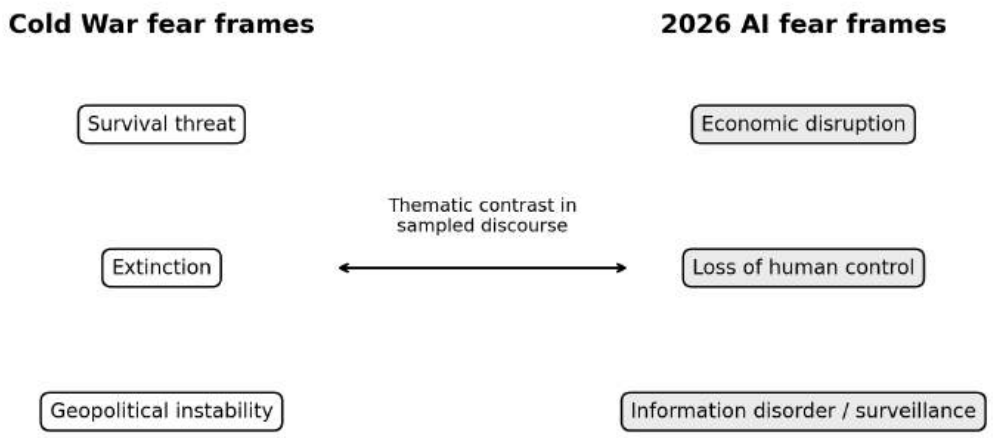


Figure 5. Summary of the principal thematic contrast in the sampled discourse. Cold War nuclear texts emphasized physical survival, extinction, and geopolitical conflict, whereas the 2026 AI texts emphasized economic disruption, monitoring, information disorder, and transfer of human authority to automated systems.

3.2 2025 and 2026 AI Comparison

Overall fear intensity was nearly unchanged between the 2025 AI corpus (n = 120, M = 6.132) and the 2026 AI corpus (n = 120, M = 6.121). The mean difference was 0.011 points, t(236.17) = 0.06, p = .957, 95% CI [-0.383, 0.405], Hedges' g = 0.01. The confidence interval includes zero and the standardized effect is negligible. In both years, Delegated Agency/Loss of Human Control and Information Disorder were among the most prominent categories. Geopolitical instability increased from 0.181 to 0.383 and was the only category that remained significant after Holm adjustment (adjusted p = .00193). Surveillance was higher in 2025 and reached the unadjusted threshold (p = .0443), but it did not remain significant after adjustment (adjusted p = .3987). These findings support stability in overall AI fear intensity alongside a specific increase in geopolitical and national-security framing in the sampled 2026 corpus.

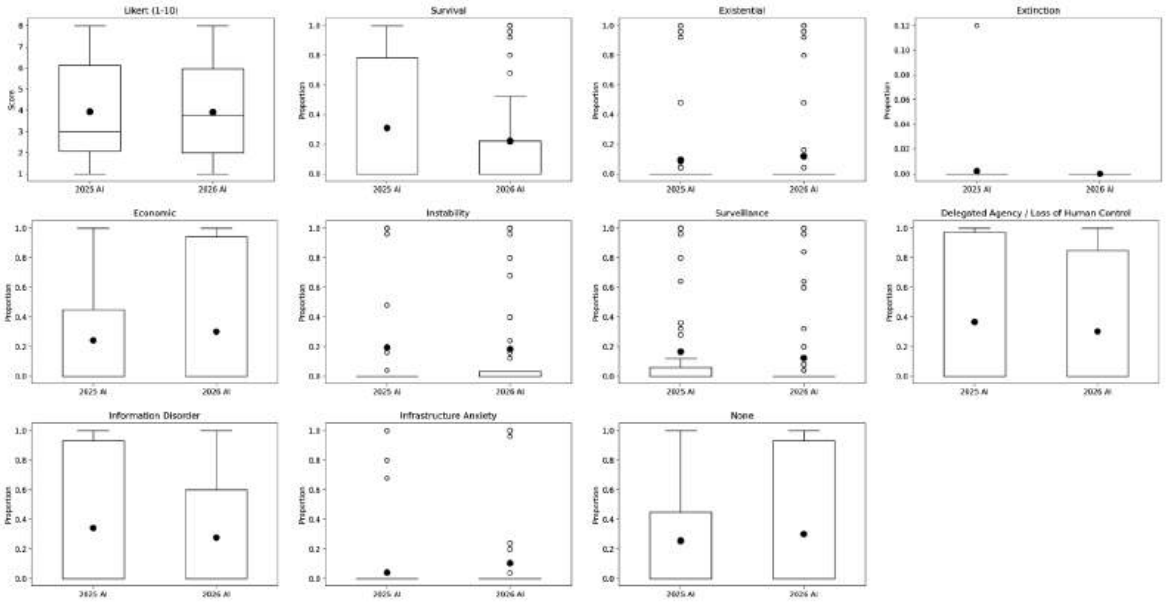


Figure 6. Source-level distributions for overall fear intensity and fear-category proportions in the 2025 and 2026 AI corpora. The overall means were nearly identical (6.132 and 6.121), and most category differences were statistically uncertain after Holm adjustment.

Table 2. Average source-level fear-intensity and category scores for AI documents from 2025 and 2026. The 10 category tests were subjected to Holm adjustment and the only adjusted category difference was geopolitical instability.

Measure	**2025 AI (n = 120)**	**2026 AI (n = 120)**	**Raw p-value**	**Holm-adjusted p-value**	**Significant?**
Likert (1-10)	6.132	6.121	0.957	NA	No
Survival (0-1)	0.481	0.557	0.190	1.000	No
Existential Dread (0-1)	0.164	0.135	0.493	1.000	No
Extinction (0-1)	0.027	0.007	0.174	1.000	No
Economic Crisis (0-1)	0.185	0.156	0.539	1.000	No
Geopolitical Instability (0-1)	0.181	0.383	0.000193	0.00193	Yes
Surveillance (0-1)	0.259	0.168	0.0443	0.3987	No

Measure	2025 AI (n = 120)	2026 AI (n = 120)	Raw p-value	Holm-adjusted p-value	Significant?
Delegated Agency/Loss of Human Control (0-1)	0.676	0.682	0.908	1.000	No
Information Disorder (0-1)	0.702	0.659	0.449	1.000	No
Infrastructure Anxiety (0-1)	0.056	0.051	0.876	1.000	No
None (0-1)	0.0	0.006	0.319	1.000	No

Table 3. Primary overall fear-intensity comparisons with uncertainty and standardized effect-size estimates. Mean differences are calculated as the first group minus the second group.

Comparison	Sample sizes	Mean difference	t (df)	p	95% CI	Hedges' g
Cold War - 2026 AI	60 / 120	0.520	1.97 (105.93)	.052	[-0.004, 1.044]	0.32
2025 AI - 2026 AI	120 / 120	0.011	0.06 (236.17)	.957	[-0.383, 0.405]	0.01

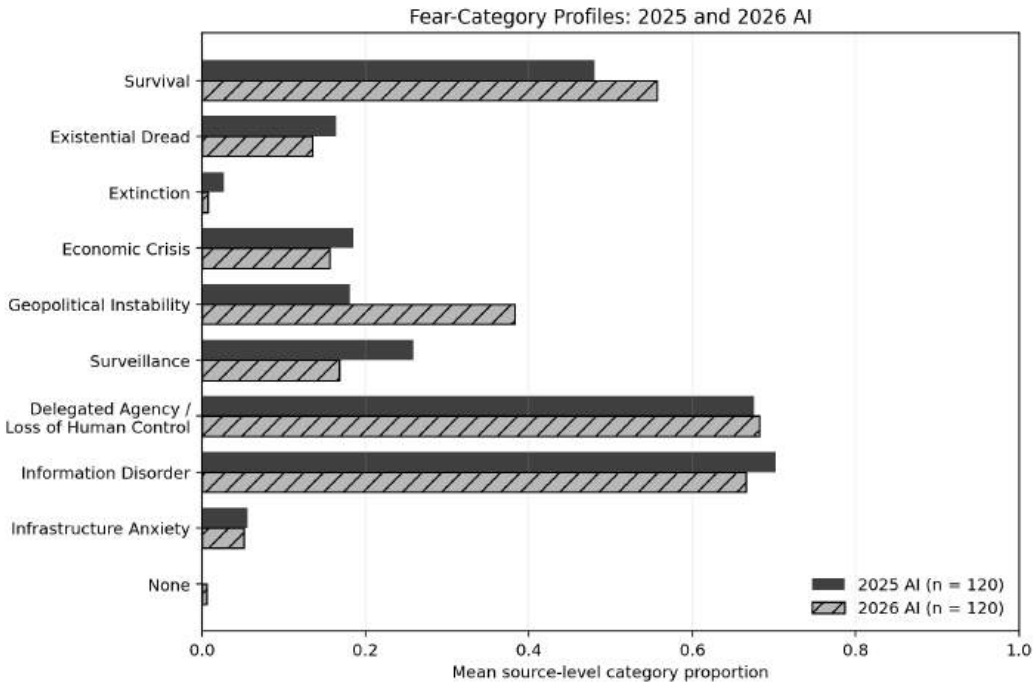


Figure 7. Mean fear-category proportions in the 2025 and 2026 AI corpora. Most differences were small or statistically uncertain after Holm adjustment. Geopolitical instability was higher in 2026 and was the only category that remained significant; Surveillance was higher in 2025 but did not remain significant after adjustment.

4. Discussion

The results indicate that fear-related technological discourse appeared in both historical settings, but its composition differed substantially. The overall Cold War-2026 AI difference was small and did not reach the conventional significance threshold (Hedges' $g = 0.32$, $p = .052$), whereas seven of the ten category comparisons remained significant after Holm adjustment. The central finding is therefore not that one period was conclusively more fearful than the other, but that the sampled corpora organized fear around different objects and consequences.

Cold War documents were dominated by Survival, Extinction, and Geopolitical Instability. This pattern is consistent with scholarship showing that nuclear culture centered on mass death, radiation, deterrence, civil defense, and the possibility of global war (Boyer, 1994; McEnaney, 2000; Oakes, 1995). The documents represented danger as immediate, physical, and civilization-level. Civil-defense discourse could normalize preparedness, but it did so against a background in which the failure of deterrence could mean widespread destruction.

The sampled 2026 AI discourse displayed a more diffuse pattern. Delegated Agency/Loss of Human Control and Information Disorder were especially prominent, while Economic Crisis and Surveillance were also significantly higher than in the Cold War corpus. These categories describe concern that automated systems may displace workers, mediate public knowledge, monitor individuals, or make consequential decisions without clear accountability. The results do

not establish that AI is society's greatest technological fear; they show that, within the selected documents, AI concern was frequently expressed through social, informational, economic, and control-based frames.

Risk-amplification and framing theory help explain this contrast. The two corpora do not simply reflect objective danger; they also reflect which consequences institutions and media selected, emphasized, and connected to possible responses (Entman, 1993; Kasperson et al., 1988). Nuclear discourse foregrounded concentrated catastrophe, whereas AI discourse foregrounded distributed changes across work, privacy, information, governance, and infrastructure. This interpretation should remain tied to the sampled texts, because different collection strategies or genres could produce different thematic profiles.

The 2025-2026 comparison further limits claims of rapid change. Overall AI fear intensity was essentially stable, with a mean difference of 0.011 and Hedges' $g = 0.01$. Geopolitical instability was the only category that remained significant after adjustment, suggesting a specific increase in national-security and geopolitical framing rather than a broad rise in fear. In the sampled AI discourse, concern often centered on whether AI might displace human labor, reshape decisions, expand monitoring, or weaken control over information. This is more precise than saying that AI fear simply asks whether technology will replace people.

4.1 Limitations

Several limitations constrain the conclusions. First, GPT-4o mini may reproduce biases, misunderstand historical language, or apply overlapping categories inconsistently. Repeated runs quantify model variability but do not establish validity. The exploratory human review was small and did not retain matched LLM scores for the same documents, so it cannot support formal intercoder-reliability claims. Second, the corpora differs in period, genre, geography, and collection method. Cold War sources include speeches, archival records, and newspapers, whereas the AI sources include contemporary news, reports, and online publications, including some international material. These differences may affect tone and category prevalence independently of the technology discussed.

Third, BigQuery discovery and web scraping include only sources that were indexed, accessible, successfully downloaded, and retained by the screening rules. The AI corpora therefore cannot represent all relevant coverage. The risk-oriented selection criteria also mean that this study cannot estimate the prevalence of fear in the broader information environment. Fourth, the categories and Likert scale are researcher-designed operationalizations of expressed fear rather than direct measures of readers' or authors' psychological states. Finally, the document is the independent unit of analysis; treating the 25 repeated runs as separate observations would create pseudoreplication. Confidence intervals and effect sizes improve interpretation of the primary comparisons, but causal claims remain unwarranted.

4.2 Future Research

Future research should use at least two independent human coders on a larger matched sample and report category-specific agreement using measures such as Cohen's kappa or

Krippendorff's alpha. Human and LLM ratings should be compared on the same documents, with disagreements used to refine definitions and decision rules. Reporting precision, recall, confusion patterns, and prompt-stability tests would also clarify which categories can be coded reliably and which require human adjudication.

A longitudinal design could divide Cold War discourse into periods such as the early atomic era, the Cuban Missile Crisis, detente, and the later Reagan years. For the AI discourse, it could do the same thing with phases centered on automation, generative AI, deepfakes, infrastructure, national security, and governance. Such a design would show how frames change as technologies, institutions, and public familiarity evolve rather than treating each era as internally uniform.

Future studies should also compare manual and database-assisted collection strategies, stratify by source genre, and test whether results remain stable after removing duplicated wire stories or highly similar articles. Survey or interview data could then be paired with discourse analysis to determine whether the frames found in texts correspond to audience beliefs and emotions.

Finally, the framework could be expanded beyond fear to include other emotions. Public attitudes toward powerful technologies are rarely one emotion, so both nuclear and AI discourse can combine anxiety with optimism, adaptation, or demands for governance.

5. Conclusion

This paper compared fear expressed in Cold War nuclear discourse with fear expressed in contemporary AI discourse. The overall Cold War-2026 AI difference was small and did not reach the conventional .05 significance threshold, while the 2025 and 2026 AI means were virtually identical. The study's strongest evidence concerns thematic composition rather than a difference in total fear intensity.

Cold War nuclear discourse was significantly more centered on Survival, Extinction, and Geopolitical Instability. The sampled 2026 AI discourse was significantly more centered on Economic Crisis, Surveillance, Delegated Agency/Loss of Human Control, and Information Disorder. Nuclear fear was therefore more concentrated on physical annihilation and war, whereas AI fear was more distributed across employment, privacy, misinformation, automated judgment, and institutional control.

Cold War discourse often posed the question of whether technology could destroy human life and civilization. In the sampled AI discourse, concern more often centered on whether AI might displace human labor, monitor people, mislead the public, or make decisions that reduce human authority. The shift from annihilation toward delegation is not a claim that the technologies or their risks are equivalent; it is a description of how fear was framed within the selected corpora.

Works Cited

American Experience. (2019, March 22). Operation Alert. PBS. https://www.pbs.org/wgbh/americanexperience/features/bomb-operation-alert

Boyer, P. (1994). By the bomb's early light: American thought and culture at the dawn of the atomic age. University of North Carolina Press. (Original work published 1985)

Cave, S., Coughlan, K., & Dihal, K. (2019). “Scary robots”: Examining public responses to AI. In Proceedings of the 2019 AAAI/ACM Conference on AI, Ethics, and Society (pp. 331-337). Association for Computing Machinery. https://doi.org/10.1145/3306618.3314232

Chew, R., Bollenbacher, J., Wenger, M., Speer, J., & Kim, A. (2023). LLM-assisted content analysis: Using large language models to support deductive coding. arXiv. https://doi.org/10.48550/arXiv.2306.14924

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. Journal of Communication, 43(4), 51-58. https://doi.org/10.1111/j.1460-2466.1993.tb01304.x

Gilardi, F., Alizadeh, M., & Kubli, M. (2023). ChatGPT outperforms crowd workers for text-annotation tasks. Proceedings of the National Academy of Sciences, 120(30), e2305016120. https://doi.org/10.1073/pnas.2305016120

Google Cloud. (n.d.). BigQuery public datasets. Retrieved July 7, 2026, from https://cloud.google.com/bigquery/public-data

Kasperson, R. E., Renn, O., Slovic, P., Brown, H. S., Emel, J., Goble, R., Kasperson, J. X., & Ratick, S. (1988). The social amplification of risk: A conceptual framework. Risk Analysis, 8(2), 177-187. https://doi.org/10.1111/j.1539-6924.1988.tb01168.x

Krippendorff, K. (2018). Content analysis: An introduction to its methodology (4th ed.). SAGE.

Lazarus, R. S. (1991). Emotion and adaptation. Oxford University Press.

Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. Human Communication Research, 28(4), 587-604. https://doi.org/10.1111/j.1468-2958.2002.tb00826.x

McClain, C., Kennedy, B., Gottfried, J., Anderson, M., & Pasquini, G. (2025, April 3). How the U.S. public and AI experts view artificial intelligence. Pew Research Center. https://www.pewresearch.org/internet/2025/04/03/how-the-us-public-and-ai-experts-view-artificial-intelligence/

McEnaney, L. (2000). Civil defense begins at home: Militarization meets everyday life in the fifties. Princeton University Press.

Oakes, G. (1995). The imaginary war: Civil defense and American Cold War culture. Oxford University Press. https://doi.org/10.1093/oso/9780195090277.001.0001

Schepman, A., & Rodway, P. (2020). Initial validation of the General Attitudes towards Artificial Intelligence Scale. Computers in Human Behavior Reports, 1, 100014. https://doi.org/10.1016/j.chbr.2020.100014

Schepman, A., & Rodway, P. (2023). The General Attitudes towards Artificial Intelligence Scale (GAAIS): Confirmatory validation and associations with personality, corporate distrust, and general trust. International Journal of Human-Computer Interaction, 39(13), 2724-2741. https://doi.org/10.1080/10447318.2022.2085400

Slovic, P. (1987). Perception of risk. Science, 236(4799), 280-285. https://doi.org/10.1126/science.3563507

Stanford Institute for Human-Centered Artificial Intelligence. (2025). The 2025 AI Index report. Stanford University. https://hai.stanford.edu/ai-index/2025-ai-index-report

Stanford Institute for Human-Centered Artificial Intelligence. (2026). The 2026 AI Index report. Stanford University. https://hai.stanford.edu/ai-index/2026-ai-index-report

The GDELT Project. (n.d.). Data: Querying, analyzing and downloading. Retrieved July 7, 2026, from https://www.gdeltproject.org/data.html

Törnberg, P. (2024). Best practices for text annotation with large language models. Sociologica, 18(2), 67-85. https://doi.org/10.6092/issn.1971-8853/19461

Ziems, C., Held, W., Shaikh, O., Chen, J., Zhang, Z., & Yang, D. (2024). Can large language models transform computational social science? Computational Linguistics, 50(1), 237-291. https://doi.org/10.1162/coli_a_00502

Appendix A. Exploratory Comparison of Human-Reviewed Samples and Corpus-Level LLM Assessments

The author manually evaluated six Cold War documents and twelve 2026 AI documents as an exploratory comparison with the LLM-generated results. The human averages were calculated from these reviewed subsets, whereas the LLM averages represent the entire corresponding corpora. Therefore, the comparisons below do not constitute formal human-LLM agreement, intercoder reliability, or model-accuracy tests. Differences may reflect both coding judgments and differences between the small human-reviewed samples and the full corpora.

A.1 Cold War Documents

Cold War Document	Likert Score	Dominant Fear Categories
Virginia's "Swimming Pool" for Atoms	2	Survival; Information Disorder
U.S. Policy on Military Actions in a Berlin Conflict	7	Survival; Geopolitical Instability; Extinction
Can Your City Control an "Atomic Accident"?	8	Survival; Geopolitical Instability; Extinction
Additional Decisions	8	Survival; Geopolitical Instability
Your Memorandum on "Launch-on-Warning"	7	Survival; Geopolitical Instability; Extinction
NATO Arm's Buildup Stirs Fear of U.S. Intent	6	Survival; Geopolitical Instability

Human average fear-intensity score = (2 + 7 + 8 + 8 + 7 + 6) / 6 = 6.333.

The LLM average fear-intensity score for the entire Cold War corpus was 6.641. The human-reviewed sample mean was therefore approximately 4.64% lower than the full-corpus LLM mean: [(6.641 - 6.333) / 6.641] x 100 = 4.64%.

The human review and the full-corpus LLM assessment both identified Survival, Geopolitical Instability, and Extinction as prominent Cold War fear categories. This thematic similarity provides descriptive support for the Cold War interpretation, but it does not establish formal agreement because the human-reviewed subset was not compared with matched LLM ratings for those same six documents.

A.2 2026 AI Documents

AI 2026 Document	Likert Score	Dominant Fear Categories
SZA Blasts AI Companies for Stealing Her Music as Artists Battle Labels to Get Paid	7	Economic Crisis; Delegated Agency/Loss of Human Control
On AI, the US and China Have an Outdated Arms Race Mindset	6	Geopolitical Instability; Delegated Agency/Loss of Human Control
The 2026 AI Index Report	5	Economic Crisis; Geopolitical Instability; Delegated Agency/Loss of Human Control; Infrastructure Anxiety
Generative AI and the Reorganization of Labor Demand	4	Economic Crisis
Will AI Go Rogue? A Troubling Argument Emerges	8	Existential Dread; Extinction; Delegated Agency/Loss of Human Control
The Risks of U.S. Restrictions on Anthropic Exports	7	Economic Crisis; Geopolitical Instability; Surveillance; Delegated Agency/Loss of Human Control
Bernie Sanders Unveils Plan to Give the Public Direct Ownership of AI Companies	7	Economic Crisis; Delegated Agency/Loss of Human Control; Infrastructure Anxiety
The “Mass Affluent” Are Losing Their Allure for Wealth Managers Navigating AI	6	Economic Crisis; Delegated Agency/Loss of Human Control
AI Is Not Here to Replace the Winemaker, but to Save Hours of Excel	2	None
Tunisia: Capital Investment and AI—A New Challenge for the Profession?	3	None
RBC Sees AI Initiatives Supporting Margin Discipline Despite Lower PICS Price Target	3	Economic Crisis
Poll: 70% of Americans “Concerned” AI Will Take Jobs	7	Economic Crisis; Delegated Agency/Loss of Human Control

Human average fear-intensity score = (7 + 6 + 5 + 4 + 8 + 7 + 7 + 6 + 2 + 3 + 3 + 7) / 12 = 5.417.

The LLM average fear-intensity score for the entire 2026 AI corpus was 6.121. The human-reviewed sample mean was therefore approximately 11.50% lower than the full-corpus LLM mean: [(6.121 - 5.417) / 6.121] x 100 = 11.50%.

For the 2026 AI documents, the human review and the full-corpus LLM assessment shared only one prominent category: Delegated Agency/Loss of Human Control. Their remaining prominent categories differed. This divergence may reflect differences between the small human-reviewed subset and the full corpus, differences in how human and LLM coders interpreted the category definitions, or both.

The larger difference in mean fear intensity and the narrower thematic overlap indicate that the AI coding framework requires additional matched validation before strong claims about human-LLM agreement can be made.

A.3 Interpretation

The exploratory comparison showed closer descriptive alignment between the human-reviewed Cold War sample and the full-corpus Cold War LLM results than between the human-reviewed AI sample and the full-corpus 2026 AI results. The percentage differences should not be interpreted as error rates or accuracy estimates because the human and LLM averages were not calculated from the same matched documents. Formal validation would require human and LLM ratings for the same sources and document-level agreement statistics.

Appendix B. LLM Procedure for Article Classification and Analysis

1 INPUT: SCRAPED ARTICLE TEXT FILES

- Read individual .txt files from the selected article-text directory.
- Treat each file as one source document.

↓

2 PREPROCESS EACH TEXT

- Read with fallback encodings: UTF-8, UTF-8-SIG, CP1252, and Latin-1.
- Remove the scraper header and metadata; extract the URL as the source identifier.
- Exclude files shorter than 200 characters and log the error.
- For texts longer than 25,000 characters, preserve the beginning and ending and insert a truncation marker.

↓

3 SEND TO GPT-4O MINI FOR REPEATED CODING

- Use the same system message, coding prompt, and document text for every request.
- Model settings: temperature = 0.2; maximum response = 650 tokens.
- Submit 25 separate repeated API requests per document.
- Request a 1-10 fear-intensity score and one or more fear categories.

↓

4 RECEIVE AND STORE RAW RESPONSES

- Require valid JSON containing the Likert score, score reason, selected categories, and category reason.

- Remove code fences and isolate the JSON object before parsing.
- Save each successful response to a pickle dictionary after every run.
- Retry temporary API failures with exponential backoff, up to eight attempts.

CODING PROMPT OVERVIEW

- Appraisal dimensions: relevance, unexpectedness, threat or harm potential, coping potential, and norm compatibility.
- Return a Likert score from 1-10 with a brief explanation.
- Return a multi-label category list with a brief explanation.

MODEL PARAMETERS

- Model: GPT-4o mini.
- API: OpenAI Chat Completions.
- Temperature: 0.2.
- Maximum output: 650 tokens.
- Runs per document: 25.
- No explicit random seed or top_p setting.

↓

5 FLATTEN TO A RUN-LEVEL TABLE

- Convert the pickle results into a CSV with one row per model run.
- Preserve the source URL, run number, score, explanations, and raw category response.
- Convert the ten categories into standardized binary indicators (0 or 1).
- Mark None only when no substantive fear category is detected.

↓

6 AGGREGATE TO SOURCE-LEVEL SCORES

- Average the 25 Likert scores for each document.
- Average each binary category across runs to produce a category proportion from 0-1.
- Calculate the standard deviation and the number of completed runs.
- Remove duplicate rows and restrict Likert scores to the valid 1-10 range.

↓

7 CREATE THE FINAL ANALYSIS DATASET

- Use one source-level row per document as the independent observation.
- Compare Cold War, 2025 AI, and 2026 AI groups using Welch independent-samples t-tests.
- Treat the Likert score as the primary outcome and interpret its unadjusted p-value.
- Apply a Holm correction to the 10 fear-category comparisons within each analysis.
- Using source-level averages prevents pseudoreplication from the 25 repeated model runs.

TEN FEAR CATEGORIES

- Survival; Existential Dread; Extinction; Economic Crisis; Geopolitical Instability.
- Surveillance; Delegated Agency/Loss of Human Control; Information Disorder; Infrastructure Anxiety; None.

OUTPUT FILES

- Raw pickle containing complete JSON responses.

- Flattened run-level CSV with one row per run.
- Source-level summary CSV with one row per document.
- Overall summary CSV and an error-log CSV.

UNIT OF ANALYSIS

- Each document is one independent observation.
- The 25 model runs are repeated measurements of that document, not independent sources.

QUALITY CONTROL

- Retry transient API failures.
- Log malformed or unparseable responses.
- Skip texts that are too short.
- Save progress after every successful run.
- Remove duplicates before aggregation and validate score ranges.

Appendix C. Statistical Analysis and Effect-Size Reporting

C.1 Unit of Analysis

Each document was treated as one independent observation. Every source was assessed by the large language model 25 times using the same prompt. The 25 Likert ratings were averaged to create one source-level fear-intensity score. For each fear category, the binary results from the 25 runs were averaged to create a source-level proportion ranging from 0 to 1. The repeated model runs were treated as measurements of the same document rather than as independent observations.

C.2 Welch Independent-Samples t-Test

Two-tailed Welch independent-samples t-tests were used to compare the Cold War documents with the 2026 AI documents and to compare the 2025 AI documents with the 2026 AI documents. Welch's t-test was selected because the groups had different sample sizes in the Cold War comparison and equal variances were not assumed.

$$t = (\bar{X}_1 - \bar{X}_2) / \sqrt{[(s_1^2 / n_1) + (s_2^2 / n_2)]}$$

In this equation, $\bar{X}_1$ and $\bar{X}_2$ represent the group means, s_1^2 and s_2^2 represent the group variances, and n_1 and n_2 represent the numbers of source documents in the two groups. The approximate degrees of freedom were calculated using the Welch-Satterthwaite equation. A two-tailed significance level of $\alpha = .05$ was used. The direction of each difference was determined by comparing the group means.

C.3 Confidence Intervals and Hedges' g

For each primary Likert comparison, a 95% confidence interval was calculated as the observed mean difference plus or minus the two-tailed critical t value multiplied by the Welch standard error. The mean difference was defined as the first group named in the comparison minus the second group. Standardized effect size was reported as Hedges' g, which applies a small-sample correction to Cohen's d. Hedges' g was interpreted descriptively: values near 0 indicate little standardized separation, while values around 0.2, 0.5, and 0.8 are commonly

described as small, medium, and large, respectively. These thresholds were used only as general guides.

C.4 Primary Likert Outcome

The overall 1-10 Likert fear score was designated as the primary outcome. For the Cold War-2026 AI comparison, the groups contained 60 and 120 documents, respectively. The Cold War mean was 6.641 and the 2026 AI mean was 6.121, producing a mean difference of 0.520, $t(105.93) = 1.97$, $p = .052$, 95% CI [-0.004, 1.044], Hedges' $g = 0.32$. For the 2025-2026 AI comparison, both groups contained 120 documents. The means were 6.132 and 6.121, producing a mean difference of 0.011, $t(236.17) = 0.06$, $p = .957$, 95% CI [-0.383, 0.405], Hedges' $g = 0.01$.

C.5 Holm Adjustment for Fear Categories

Ten additional Welch t-tests were conducted within each comparison, one for each fear category: Survival, Existential Dread, Extinction, Economic Crisis, Geopolitical Instability, Surveillance, Delegated Agency/Loss of Human Control, Information Disorder, Infrastructure Anxiety, and None. Because testing several categories increases the probability of obtaining a statistically significant result by chance, the Holm procedure was applied to these 10 category tests. The Likert score was not included in the Holm family.

For each comparison, the 10 raw category p-values were ranked from smallest to largest. The smallest p-value was compared with $\alpha/10$, the second-smallest with $\alpha/9$, and so on. Holm-adjusted p-values were limited to a maximum of 1.000. A category result was treated as statistically significant only when its Holm-adjusted p-value was below .05. Holm adjustment was selected because it controls the familywise error rate while generally retaining more statistical power than the standard Bonferroni correction.

C.6 Interpretation of Statistical Significance

Statistical significance indicates whether an observed mean difference would be unlikely under the assumption that the two groups had equal population means. It does not determine whether the difference is large, socially important, or caused by the technology itself. These tests compare patterns in the sampled documents; they do not directly measure the emotional states of all Americans or establish that fear changed because of a particular historical event.

The primary Likert tests describe differences in overall model-coded fear intensity. Confidence intervals describe the range of mean differences compatible with the data under the model assumptions, and Hedges' g places the difference on a standardized scale. The Holm-adjusted category tests describe differences in thematic emphasis while reducing the likelihood that a category appears significant only because multiple tests were conducted. The findings were therefore interpreted using p-values, confidence intervals, effect sizes, direction, and substantive context together.

Appendix D. Source Code and Corpus Bibliographies

Prompt:

Rate the level of fear in the text on a scale of 1-10 using these psychological fear appraisal methods.

1. Appraisal Theory of Emotion:

Evaluate fear based on relevance, unexpectedness, threat or harm potential, coping potential, and norm compatibility.

2. Intensity Scale, Likert-based 1-10:

Assign fear intensity based on language markers, urgency or finality, tone and framing, and whether coping strategies or reassurances are present.

1 = little or no fear expressed.

10 = extreme fear, catastrophic framing, or urgent existential danger.

3. Categorize the fear using any category/categories that apply. This is multi-label, so more than one category may be selected.

Categories:

- Survival: Fear involving physical life, bodily safety, or immediate danger.
- Existential dread: Fear involving purposelessness, meaninglessness, identity loss, human irrelevance, or loss of human uniqueness.
- Extinction: Fear involving planetary destruction, species-level risk, or the end of civilization.
- Economic crisis: Fear involving job loss, financial insecurity, labor disruption, business disruption, or economic instability.
- Geopolitical instability: Fear involving war, arms races, national security, state conflict, political chaos, or global power competition.
- Surveillance: Fear involving privacy loss, monitoring, autonomy, data control, or tracking.
- Delegated agency/loss of human control: Fear that humans are transferring judgment, decision-making, creativity, labor, military authority, governance, or social authority to AI systems.
- Information disorder: Fear involving misinformation, deepfakes, synthetic media, political manipulation, AI-generated deception, or the collapse of trust in public information.
- Infrastructure anxiety: Fear involving the material systems behind AI, including data centers, electricity demand, water use, land use, environmental strain, energy grids, chips, or local community impacts.
- None: Use only when no significant fear is detected.

Return only a valid JSON object. Do not include markdown, code fences, emojis, or bold text.

Use exactly this structure:

```
{
  "Likert_scale": {
    "scale": 1,
```

```
    "reason": "brief reason for the fear score"
  },
  "Category": {
    "category": ["category name 1", "category name 2"],
    "reason": "brief reason for the chosen category/categories"
  }
}
```


The following links provide the analysis code, corpus bibliographies, and project website:

Parser Source Code:
https://github.com/tarobrightlynx/ColdWarVsAIFear/blob/main/Scrape_AI_Articles.py

Fear Categorizer Source Code:
https://github.com/tarobrightlynx/ColdWarVsAIFear/blob/main/Categorize_Scraped_Texts.py

Cold War Era Sources:
https://github.com/tarobrightlynx/ColdWarVsAIFear/blob/main/Bibliography_ColdWar.md

AI 2025 Sources:
https://github.com/tarobrightlynx/ColdWarVsAIFear/blob/main/Bibliography_AI2025.md

AI 2026 Sources:
https://github.com/tarobrightlynx/ColdWarVsAIFear/blob/main/Bibliography_AI2026.md

Research Paper Website: https://tarobrightlynx.github.io/ColdWarVsAIFear/index.html

Does Movement Enhance Memory? An Investigation Across Physical, Virtual, and Imagined Navigation By Huda Al-Abbadi

Abstract

Memory formation is shaped by movement through space, however it is unclear whether this relationship depends on physical movement itself or on a shared underlying neural mechanism that operates regardless of how that movement is generated. This paper investigates whether physical, virtual, and imagined movement all recruit an overlapping hippocampal-theta spatial encoding system to enhance memory formation, examined across three aims. Aim 1 examines physical movement by synthesizing seminal studies (O'Keefe & Dostrovsky, 1971; Van Praag et al., 1999; Maguire et al., 2000). Aim 2 examines virtual movement by analysing Dougherty and colleagues' (2022) study and conducting a supplementary data analysis on the same public dataset to extend their findings. Aim 3 examines imagined movement, via the Memory Palace technique, by synthesizing fMRI and behavioural evidence alongside an original pilot study of ten neurotypical adolescents — an understudied population in mnemonic research. Across all three aims, convergent evidence supports the central hypothesis: physical, virtual and imagined movement enhance memory formation through the hippocampal-theta mechanism. Physical movement enhances memory through hippocampal neurogenesis and structural plasticity; virtual movement engages the same system through theta-coordinated spatial encoding; and imagined movement, through spatially organized encoding, produces more durable episodic memory traces than rote memorization. These findings suggest practical applications for education (mnemonic strategies for curriculum-based learning) and neurorehabilitation (movement-based memory recovery following stroke or brain injury).

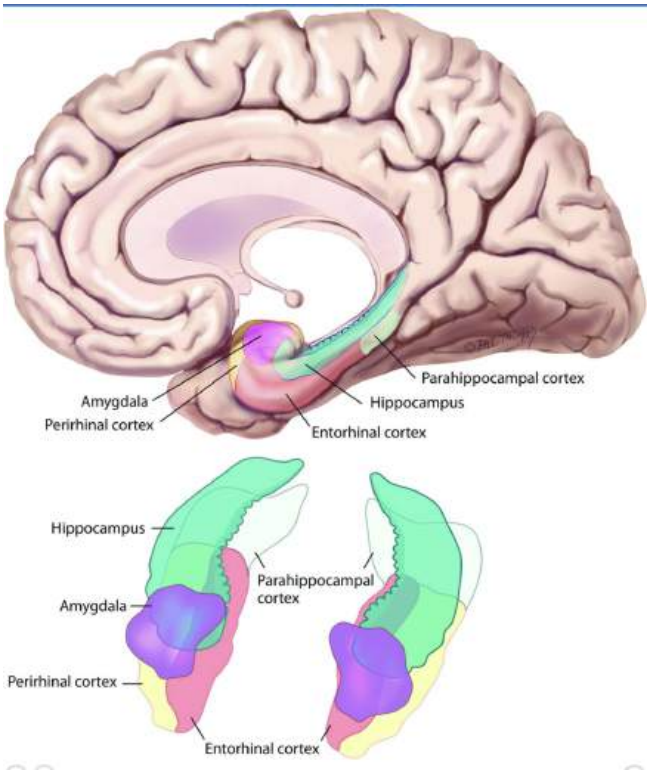
Keywords: hippocampus, retrosplenial cortex, parahippocampal cortex, entorhinal cortex, medial temporal lobe, neocortex, sharp wave ripples, dentate gyrus, EEG, theta oscillations, place cells, Memory Palace technique, spatial memory, virtual navigation, episodic memory, neurogenesis, long term potentiation, word concreteness, dual-coding theory,

Introduction

This research paper investigates how different types of movement facilitate memory formation in neural space. This is examined across three different modes of movement: physical, virtual, and imagined, by investigating whether these movements activate the hippocampus. This question is answered across three aims. Aim 1 investigates whether physical movement enhances memory formation and which neural mechanisms are responsible. Aim 2 investigates whether navigating a digital environment triggers the same brain processes involved in memory as physical movement. Aim 3 investigates whether imagined movement, specifically the Memory Palace technique, can trigger the same memory processes in the absence of physical movement.

Brain Anatomy

In order for the analysis presented in this paper to be understood, key neuroscientific terminology and critical brain processes must be defined. The brain is divided into specific regions that are responsible for memory, movement, cognition and organizing sensory input. Memory depends on a network of interconnected brain regions rather than a single one. The encoding, storage, and retrieval of memories primarily involve structures within the medial temporal lobe (MTL) and the neocortex. The MTL is a significant brain region associated with consolidation, organization and formation of long-term memories as well as spatial navigation and emotional processing (Squire & Zola-Morgan, 1991). The neocortex includes the outer cortex of the brain that carries out high level cognitive tasks (thinking/planning) and ultimately stores long term memories. At the center of the MTL is the hippocampus, a curved, seahorse-shaped structure located deep within both hemispheres. The hippocampus receives processed sensory information from the entorhinal cortex, which acts as the main gateway through which sensory information enters and exits the hippocampus (Buzsáki & Moser, 2013). The parahippocampal cortex and retrosplenial cortex surround these structures. The parahippocampal cortex provides spatial and contextual information, whilst the retrosplenial cortex links hippocampal activity with cortical regions involved in navigation and ego-centered memory. After encoding in the hippocampus, memories are consolidated through repeated communication with distributed regions of the neocortex in which long-term memories are stored. This communication occurs through networks of neurons which are specialized cells that transmit electrical and chemical signals across synapses. Repeated activation of neurons and their connections with each other strengthens the synaptic connections which is known as *brain plasticity* (Bliss & Lømo, 1973). This allows experiences to be encoded into stable long term memories. Figure one demonstrates the locations of each brain region discussed above.



– Figure 1. Anatomical locations of key memory-related brain structures. Adapted from [F.D. Raslau et al, 2015], American Journal of Neuroradiology.

Movement

In this study, there are three modes of movement: physical, virtual and imagined. Physical movement is the active process of changing position within the environment through muscular activity. Virtual movement is movement through a computer-generated environment without physical movement. Imagined movement is mentally simulating physical movement in an imagined environment without creating any physical movement. All these modes of movement employ spatial navigation. Spatial navigation engages the hippocampus, entorhinal cortex, and retrosplenial cortex for enhanced memory recall (Buzsáki & Moser, 2013).

Neural Basis of Memory

To understand the linkages between movement and memory consolidation, the process of memory consolidation must also be understood. Memory is consolidated in three main steps. In the first step, all memory enters the brain as sensory input. There are three types of long term memory: procedural, episodic and semantic. For this study, episodic memory is investigated only. Episodic memory is a memory store of vivid autobiographical sensory-contextual events (Tulving, 1972). Episodic memory is visual and auditory sensory input which is encoded into the occipital lobe and temporal lobe, respectively (Squire & Zola-Morgan, 1991). In the second step, the hippocampus is believed to extract the episodic fragments from occipital and temporal lobes

and integrate them into one full memory trace. In the third step, the hippocampus emits sharp wave ripples (150-250 Hz) that replay the full memory trace to the neocortex until the memory trace is represented permanently there after long term potentiation is achieved (Stickgold, 2005). Long Term Potentiation is the strengthening of synapses in neurons which reinforces connections between brain regions, occipital and temporal, that hosted the fragments (Bliss & Lømo, 1973). This third step is the final step that consolidates the memory trace into long term memory. Rote memorization and the Memory Palace technique are both strategies for encoding a wordlist in which both create an episodic memory trace. Rote memorization of wordlists would produce a shallow episodic memory trace that is located mainly in the temporal lobe and occipital lobe whereas the memory palace technique produces a richer episodic memory trace that is located in the temporal lobe, occipital lobe, and parietal lobe. The parietal lobe allows synthesis of egocentric spatial map whereas the hippocampus generates an allocentric spatial map which is why it is involved in the memory palace technique. Rote memorization has a less fragmented episodic memory trace than the memory palace technique which means it is less distributed across brain regions - therefore the episodic memory trace generated by rote memorization is more prone to decay in the neocortex. Therefore, it can be assumed that using the memory palace technique, the act of encoding abstract information into spatial visible context (richer episodic memory) should be a more effective memory consolidating technique than rote memorization that encodes information into a shallow episodic memory trace.

The Memory Palace Technique

It is important to understand the mechanism of the Memory Palace technique as it is in the center of this aim. The Memory Palace Technique or Method of Loci is an ancient memory encoding strategy derived from Ancient Greece. The memory palace technique works by taking information and assigning it with a specific location in a familiar physical environment that can be easily visualized. Mental checkpoints are defined at each point in the route. The information encoded is then converted into a bizarre or exaggerated mental format at each checkpoint. During recall, mentally walking through the memory palace allows the retrieval of information at each mental checkpoint. It is recommended that the imagined place is familiar as it will already have hippocampal spatial representations and does not require the added effort of constructing a spatial map whilst encoding. This technique utilizes hippocampal-entorhinal cortical relations to enhance encoding and retrieval of information. There are four types of hippocampal neurons that create the spatial encoding system: head (directional) cells, grid cells, border cells and place cells. Head directional cells are believed to fire when mental gaze shifts - the direction of the head changes regardless of body position. Grid cells are thought to fire when mentally walking through the imagined environment – they map out distance between two points and the body. It is suggested that border cells fire when a perceived physical boundary is approached in an imagined environment, example - a wall (Horner and colleagues, 2016). Place cells are thought to fire when a specific object is located at a specific location – mental checkpoint – (Alabi and colleagues, 2022). During spatial navigation through the imagined environment, head cells, grid

cells, border cells and place cells fire altogether to update and register the spatial map constructed inside the brain. Brain waves — specifically theta oscillations (4-8 Hz) — generated in the hippocampus are thought to coordinate the activity of place cells and grid cells during encoding and spatial navigation (Buzsáki & Moser, 2013). Those same four cells fire during physical and virtual navigation yet during the memory palace technique no physical movement occurs at all. Therefore the argument of Aim 3 is that mentally imagined movement alone without any motor output is enough to trigger the hippocampal spatial encoding system that fires during physical navigation. Combining spatial navigation with highly emotional/bizarre encoded information may artificially create an episodic-like memory trace (Dresler and colleagues, 2017). This richer episodic-like memory trace could bypass the shallow rote memorization route and form a detailed memory trace in the hippocampus that can be reinforced into a more stable long term memory. Additionally, the Memory Palace Technique is proposed to be more effective for concrete than abstract words due to the concreteness effect explained by Dual Coding Theory (Paivio, 1971).

Research Gap and Hypothesis

The research gaps are located in Aims 2 and 3. Aim 1 doesn't contain research gaps but rather lays down the foundation of the hippocampal-theta mechanism in which Aims 2 and 3 are based off of. Aim 1 serves as a comprehensive synthesis of establishing evidence on how physical movement is linked to hippocampal plasticity. The research gap addressed in Aim 2 concerns the behavioural variables correlates of virtual navigation and memory. Dougherty and colleagues' published analysis demonstrated that neural features -- specifically alpha/beta/theta oscillations – predict later recall during the Courier task (virtual navigation task). However, whether behavioural navigation variables independently predict recall (without brain wave data) remains unexamined in their published work. The present supplementary study fills this gap through a supervised machine-learning analysis of navigation behaviour extracted from the same dataset. An additional research gap addressed in Aim 3 is that neurotypical adolescents represent an understudied population in Memory Palace Technique research. Most studies have used sample populations of university students or adults, whose brain architecture and academic contexts differ substantially from those of high school students. Whilst there is one study that examined adolescents and memory training, the sample was atypical as it was a group of neurodivergent participants (Isaksson et al. 2022). There is no controlled study that has examined its effectiveness in neurotypical adolescents in a classroom despite high school institutions placing emphasis on recall of subject-specific vocabulary verbatim. It is proposed that all modes of movement somehow engage the hippocampal-theta mechanism whilst encoding information. The hippocampal-theta mechanism is when the spatial cells in the hippocampus are activated to encode spatial information – this is reflected in theta oscillations which coordinate these hippocampal spatial cells.

The following hypotheses are proposed

Central Hypothesis: Physical, virtual, and imagined movement all recruit the same hippocampal-theta spatial encoding system to enhance memory formation.

Aim 1: Physical movement enhances memory formation through the hippocampal-theta mechanism

Aim 2: Virtual movement recruits similar hippocampal-theta mechanisms to enhance memory formation.

Aim 3: Imagined movement, via the memory palace technique, enhances memory formation through the hippocampal-theta mechanism

Methodology

This methodology section will examine the current methods used by primary research papers and the research developed for this investigation to examine the link between the three modes of movement and memory formation.

Methodology (Aim 1)

For Aim 1, in this methodology section there will be a literature synthesis conducted on the seminal research studies to establish the link between physical movement and memory formation. This aim serves to establish the foundation of the hippocampal-theta mechanism which is critical for aims 2 and 3. As outlined by the three seminal research studies, the chain of events that occur between physical movement and memory formation is as follows: physical movement ⇒ hippocampal spatial cells fires ⇒ hippocampus strengthens structurally/synaptically and becomes more specialized ⇒ improved spatial memory and recall. The following seminal studies provide evidence for this proposed mechanism. O'Keefe and Dostrovsky (1971) analyzed firings of 76 hippocampal neurons in freely moving rats. Whilst the rats explored an open-spaced environment, the spatial firing specificity of neurons was measured using an inserted electrode. Hippocampal cells were classified as place-sensitive if they demonstrated higher discharge rate specific to a region in the environment whereas other cells were classified based on behavioural variables or as non-spatial cells in general. Furthermore, Van Praag and colleagues (1999) investigated the causal effect of physical exercise on hippocampal neurogenesis, spatial learning, and synaptic plasticity in 34 female adolescent mice. The independent variables were environments with a running wheel and environments without a running wheel (control group). The dependent variables were Morris water maze performance, quantity of new hippocampal neurons (from hippocampal neurogenesis), and long term potentiation (synaptic plasticity). Lastly, Maguire and colleagues (2000) investigated the causal effect of sustained physical spatial navigation on structural changes of the hippocampus in 16 licensed London taxi drivers. fMRI scans of the taxi drivers and healthy controls were obtained to measure structural differences (between groups) of the brain architecture of the hippocampus and general structure of the brain. Voxel based morphometry (VBM) and pixel counting volumetry (PCV) were used to analyze and measure those structural differences.

Methodology (Aim 2)

For Aim 2, there will be a literature synthesis conducted on one primary research paper and a supplementary analysis conducted to establish the link between virtual movement and memory formation. The literature synthesis of the existing research serves to establish the scientific mechanism behind virtual movement and memory formation whereas the supplementary research conducted will validate it. As outlined by Dougherty and colleagues 2022, the mechanism between virtual movement and memory formation is as follows: virtual movement ⇒ theta oscillations increase ⇒ hippocampal spatial cells coordinated ⇒ successful memory recall. This primary research paper and the supplementary analysis both provide evidence for this mechanism. Dougherty and colleagues (2022) investigated the link between virtual memory and memory recall in 30 young adults that completed a Courier task (virtual spatial navigation task). Brain waves, specifically theta oscillations and alpha/beta oscillations, were measured during periods of encoding and before successful and unsuccessful recall events using EEG scalp electrodes. Supervised machine learning models (classifiers), specifically Logistic Regression, were used to predict success at encoding or retrieval periods using the brain oscillations data from EEG. Whilst the primary research paper demonstrates this mechanism by proving that brain oscillations are reliable predictors of successful memory recall, the supplementary research serves to validate this mechanism by investigating if the hippocampal-theta mechanism leaves a detectable signature in virtual movement behaviour itself – this is done by investigating whether behavioural navigational variables can predict successful memory recall. The complementary analysis used supervised machine learning to analyze behavioural variables during the Courier task on the same publicly available OpenNeuro dataset (Rudoler and colleagues, 2023) as Dougherty and colleagues (2022). The sample consisted of 15 participants where 2250 individual delivery events were analysed. In each delivery event, behavioural features during navigation were extracted — this included the serial position within delivery sequence, store coordinates, distance from the centre of the environment and navigation distance travelled, time elapsed since the previous delivery, trial number, experimental phase, spatial quadrant and whether navigation assistance (POINTER_ON) was active. The outcome was free recall performance, binary results indicating if an item was recalled. Three supervised machine learning classifiers were implemented to assess the predictive power of behavioral navigation variables: Logistic Regression, Random Forest and a Support Vector Machine. Model performance was assessed using AUC together with classification accuracy. Random Forest classifier was additionally trained on the dataset to calculate feature importance scores to examine the effect of individual behavioral variables.

Methodology (Aim 3)

For Aim 3, there will be a literature synthesis conducted on three seminal primary research papers and a pilot study conducted to establish the link between imagined movement and memory formation. The seminal research papers in this aim constructs the scientific mechanism between imagined movement and memory whereas the pilot study serves to validate

it in an understudied population. As outlined by existing research, the mechanism between imagined movement and memory formation is as follows: imagined movement ⇒ hippocampal spatial cells fire ⇒ rich episodic memory trace constructed ⇒ successful memory recall. The primary research papers in this aim and the pilot study provide evidence for this mechanism. Legge and colleagues (2012) investigated how imagined movement versus virtual movement improves memory recall onto 35 university students. This was a repeated measures design in which participants completed both conditions then did immediate recall. The dependent variable was the number of words correctly recalled out of their word list. Legge and colleagues used paired T-tests to compare raw recall scores between the VR and conventional Memory Palace Technique conditions on the same participants. Furthermore, Wang and Thomas (2000) assessed the relationship between the Memory Palace technique and the format of words recalled. There were multiple independent variables used, memory palace vs control; abstract vs concrete; delay vs no delay. The serial recall paradigm was used to collect scores out of the wordlist recalled in correct order between groups and mixed ANOVA design was used to analyze the scores. Additionally, Dresler and colleagues (2017) assessed brain activity pattern changes in 51 participants across memory palace training, maintenance rehearsal training, and passive control conditions. fMRI scans were obtained to assess brain connectivity pattern differences between the participants and memory athletes. Seed-based functional connectivity analysis was used to analyze those differences between groups and memory athletes. This conducted pilot study investigated the relationship between the memory palace technique and format of words recalled on 10 neurotypical adolescents – a population that is understudied in mnemonic strategy research. Similar to Wang and Thomas (2000), the study used multiple independent variables, memory palace vs control (rote memorization); abstract vs concrete; immediate recall vs one-week-later recall. Group B (memory palace group) had six participants with Group C (control group) having four participants. A secondary independent variable, the word format, were within groups with Group B having 3 abstract, 3 concrete and Group C having 2 abstract, 2 concrete. Participants from both groups were brought to a lab room and told to memorize wordlists given to them either using the memory palace technique or any way they wish (rote memorization). Their encoding period was five minutes with a one minute recall period in which they wrote the words they encoded onto a sheet of paper. The dependent variables were raw score and serial score obtained through the serial recall paradigm. Although this study contains low statistical power due to its small sample size, it affords the opportunity to validate Dresler's and colleagues' study in a high school population with descriptive statistics and insights from observations.

Results

Results (Aim 1)

Overall, the results of these key studies establish that physical movement through space changes the structure of the hippocampus at the cellular, synaptic, and structural levels (O'Keefe

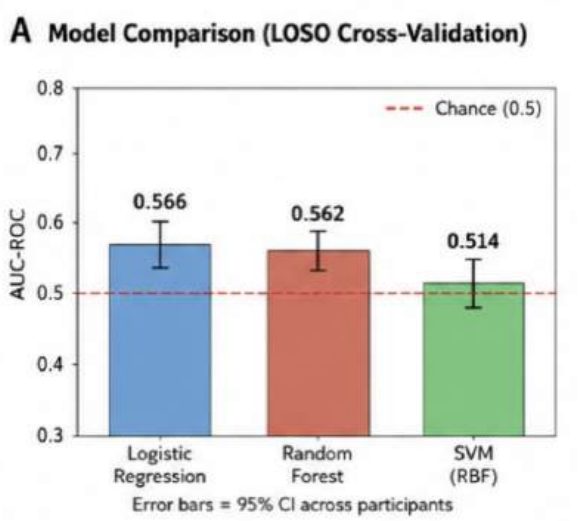
and Dostrovsky 1971, Van Praag et al. 1999, Maguire et al. 2000). These studies results are all evidence for the proposed mechanism for physical movement and memory formation. The VBM analysis in Maguire and colleagues (2000) showed that taxi drivers had statistically significantly greater gray matter in the left and right posterior hippocampi – no significant changes were shown anywhere else in the hippocampus or brain. In contrast, controls had statistically significantly greater gray matter in the anterior hippocampus. In the PCV, the overall volume of the hippocampus did not differ significantly from taxi drivers and controls. VBM correlations revealed that the right posterior hippocampus was the brain region whose gray matter volume increases as total time spent as a taxi driver increases. PCV correlations reflected similar results. The posterior hippocampus manages spatial representation and in-built spatial environmental maps suggesting that structural plasticity is triggered by spatial navigation only in that region. Furthermore, in O'Keefe and Dostrovsky (1971) study, the majority of 76 hippocampal neurons that were recorded across sessions did not classify into place selective cells with only 8 neurons meeting that criteria. The 68 hippocampal cells that were not categorized as place cells were divided into heterogenous subgroups: group of cells that responded to behavioural movements, group of cells that responded to head directional changes, group of cells that responded to arousal of rat. Place cell firing didn't respond to static spatial coordinates but rather the act of entering the spatial region (spatial navigation). Finally, Van Praag and colleagues (1999) showed that regarding spatial learning, mice in the runner group demonstrated significantly superior spatial learning relative to controls. In terms of hippocampal neurogenesis, runner mice possessed significantly more newly born cells and of those cells a higher proportion were neurons. These results suggest that exercise promotes not only mitosis of cells but also favors neuronal differentiation of newly born cells. LTP was significantly higher in runner mice than in controls demonstrating that physical exercise increases synaptic plasticity. One common trend amongst all papers, was that the hippocampus gets or is increasingly specialized for more efficient spatial encoding when activated by physical movement.

Results (Aim 2)

Overall, the results of Dougherty and colleagues (2022) establish that virtual movement increases theta oscillations that coordinate hippocampal spatial cells to support superior memory recall. This supplementary analysis conducted provides evidence to validate the mechanism outlined by Dougherty and colleagues. The results of the study and conducted analysis are discussed in detail: Overall, the behavioural results in Dougherty and colleagues (2022) showed that participants demonstrated high levels of recall which outperformed rote memorization. There was a temporal clustering effect and spatial clustering effect observed within participants. In terms of neural data, successful retrieval periods consistently showed high theta waves and lower alpha and beta waves. Machine learning classifiers on encoding periods predicted accurate recall for 13/29 participants with retrieval classifiers performing better with all 39 participants. In the supplementary data analysis, the classifiers that displayed the best accuracy in terms of predicting recall were Logistic Regression over Random Forest and SVM. Random Forest

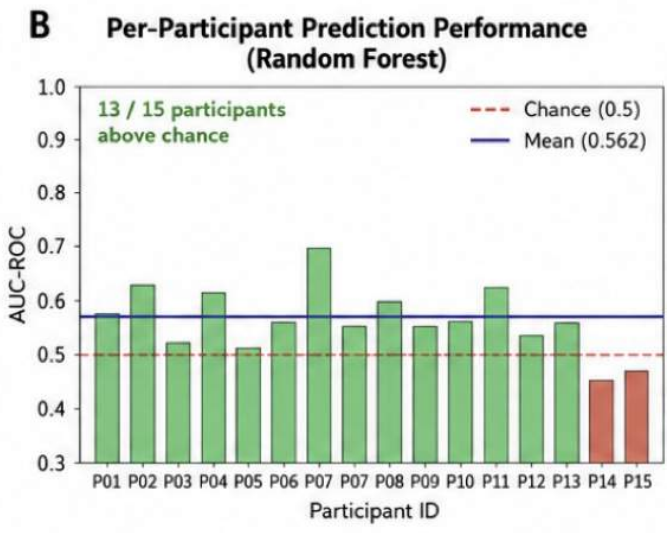
achieved above chance performance for 13/15 participants analyzed. The highest behavioural predictors of memory were delivery gap, navigation distance and serial position. Additional behavioural findings showed that primacy and recency effects were observed, with navigation speed and POINTER_ON assistance having no effect whatsoever.

Model Performance Figure A



Legend: Logistic Regression achieved the highest predictive performance (AUC = 0.566), followed closely by Random Forest (AUC = 0.562), whereas the Support Vector Machine performed only marginally above chance (AUC = 0.514). Although classification performance was modest compared with the EEG classifiers reported by Dougherty et al., both Logistic Regression and Random Forest exceeded chance level prediction (0.5).

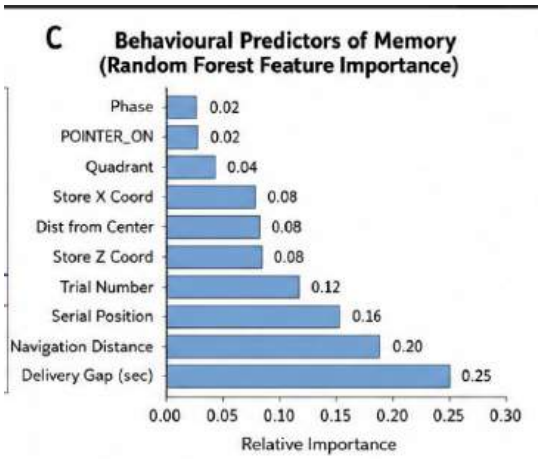
Individual Differences Figure B



Legend: Prediction performance generalized across participants, with Random Forest achieving above-chance performance for 13 of the 15 participants analysed. Despite variability between individuals, behavioural navigation patterns contain information that predicts accuracy of recall.

Behavioural Features Associated with Memory

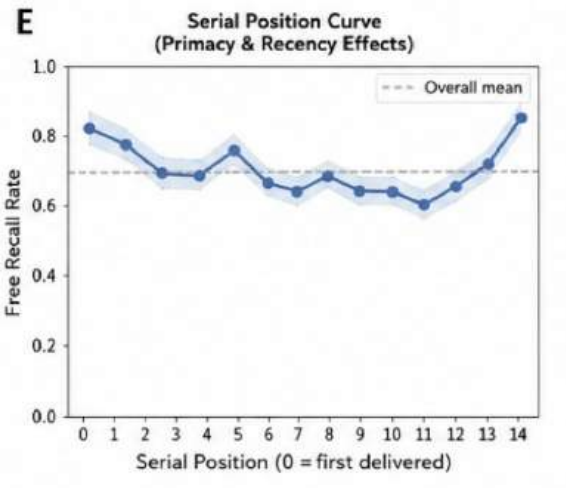
Figure C:



Legend: The feature important analysis within Random Forest showed that delivery gap, navigation distance, serial position and trial number as the strongest behavioural predictors of accurate recall. Variables associated with spatial coordinates had low prediction accuracy. Spatial position doesn't contribute to prediction accuracy as much as temporal organization and efficiency of navigation.

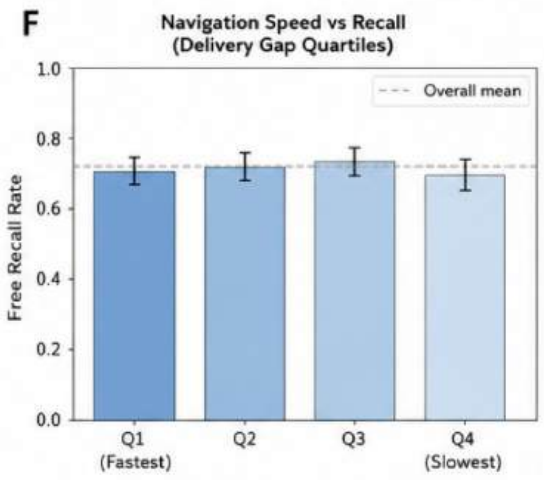
Additional Behavioural Findings

Figure E:



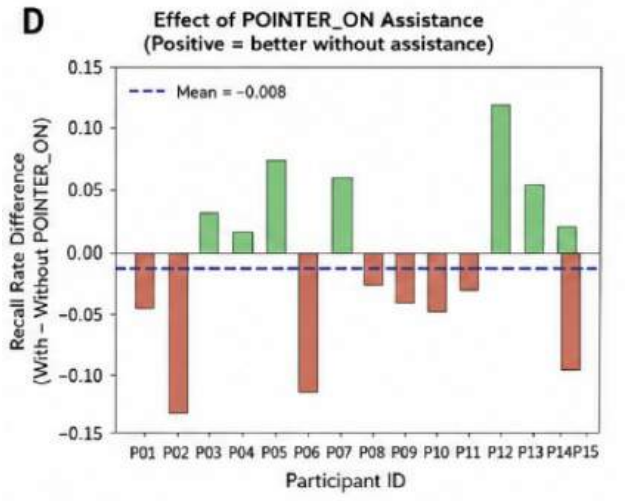
Legend: Recall followed primacy and recency effects demonstrating a classical serial position curve.

Figure F:



Legend: Navigation speed showed only modest variation in recall across delivery gap quartiles. Extremely rapid or slow navigation alone does not fully predict memory success.

Figure D:



Legend: The POINTER_ON assistance produced little impact on recall performance (mean difference = -0.008) – significant variability existed between participants.

Results (Aim 3)

Across all primary studies and the pilot study, the mechanism that imagined movement enhances memory formation via engaging hippocampal spatial cells is established. These studies' results are investigated in detail: Dresler's and colleagues' (2017) results, regarding behavioral performance, demonstrated the memory palace group portraying improvement in recall of words than both controls across all recall sessions. Neuroimaging methods showed that the stronger the resemblance between a participant's brain connectivity patterns to a memory

athlete's the higher their recall – a correlation that was found exclusively in participants in the memory palace group and not found in both controls. Furthermore, Legge and colleagues (2012) received scores from the Serial recall paradigm that did not differ significantly between memory palace group and control groups however concrete words (high imageability) were recalled more accurately than abstract words (low imageability). Scores from the free recall paradigm showed that the memory palace group and virtual reality group had better recall than controls with concreteness effects observed as well. There were no significant differences between memory palace group and virtual reality group in terms of recall. There was no imageability-by-group interaction observed at all in the data. Finally, results from Wang and Thomas (2000), ANOVA showed that the immediate recall memory palace and maintenance rehearsal groups did not significantly differ. This pattern reversed after two days, the memory palace group had outperformed maintenance rehearsal. Wang and Thomas observed no word format - group interaction effect. Despite results from Wang and Thomas and Legge and colleagues being reported directly from the participants rather than objective results, it shows the memory palace technique in effect.

Pilot study findings
Table 3

Group	Word Type	N	S1 mean	S2 mean	Retention
B - Memory Palace	concrete	3	9.33 ±1.15	5.67 ±2.89	60.7%
B - Memory Palace	abstract	3	5.00 ±2.65	1.33 ±1.15	26.7%
C - Control	concrete	2	10.00 ±0.00	4.00 ±1.41	40.0%
C - Control	abstract	2	4.50 ±0.71	0.00 ±0.00	0.0%

Legend: The descriptive statistics, average and variation of Group B and C's raw score results.

In immediate recall, ignoring word types, there is no statistically significant difference between group B and group C which suggests that neither method (memory palace or rote memorization) exceeds each other in memory benefits in immediate recall in this pilot. The second recall session, occurring one week later, shows the most meaningful differences. Regarding the concrete condition, there is no statistically significant difference between group B and group C results in both recall sessions: the standard deviations overlap which suggests that memory palace doesn't bring memory benefits for concrete words immediately or one week later. However, the contrast is more explicit when looking at abstract words where there is a statistically significant difference between group B and group C results in the second recall

session: the standard deviations technically do not overlap and that is because group C abstract condition rendered scores of 0 with no variance which can faintly suggest that memory palace serves recall benefits with abstract words one week later.

Table 4

Group	Word Type	N	S1 mean	S2 mean	Retention
B - Memory Palace	concrete	3	4.67 ±5.03	0.00 ±0.00	0.0%
B - Memory Palace	abstract	3	1.00 ±1.00	0.00 ±0.00	0.0%
C - Control	concrete	2	9.00 ±1.41	1.50 ±0.71	16.7%
C - Control	abstract	2	3.50 ±0.71	0.00 ±0.00	0.0%

Legend: The descriptive statistics, average and variation of Group B and C's serial score results.

For serial scores, the first recall session rendered extreme variability in group B's results whereas in the second recall session both group B and C rendered 0 in serial scores with the exception being group C having slightly higher score in concrete words. Therefore, these results suggest that the memory palace group doesn't provide any recall benefits of an item's serial order. Regarding the word format, concrete words have repeatedly outperformed abstract words within both groups and at both sessions. The gap is statistically significant as the standard deviations do not overlap. This aligns with the dual coding theory that concrete words activate both visual and auditory cortexes, which support richer episodic memory traces that benefit both immediate and delayed recall. A couple of methodological limitations to note. Sample sizes per condition cell ranged from n = 2 to n = 3, therefore all observed differences are indicative and preliminary and encourages future research to explore this phenomenon with larger sample sizes. The increased retention in raw scores in the memory palace group serves to validate the mechanism in which the memory palace technique enhances memory formation. Overall, results from primary research papers indicate that the mechanism exists in superior memory performance and changed brain connectivity patterns whereas the pilot study had validated it further in the understudied population of neurotypical adolescents.

Discussion

The central hypothesis – Physical, virtual, and imagined movement all recruit the same hippocampal-theta spatial encoding system to enhance memory formation – is mainly supported by the convergent but methodologically heterogenous evidence across all three aims.

Discussion (Aim 1)

When synthesizing all papers, these three studies discuss in detail a biological mechanism in which physical movement enhances memory formation across multiple levels of the hippocampus: cellular, synaptic, and structural. The seminal studies outline this mechanism that physical movement enhances memory by increasingly specializing the hippocampus to support superior memory recall. Van Praag and colleagues (1999) showed that physical movement stimulated hippocampal neurogenesis which suggests that not only does movement activate the hippocampal-theta mechanism, it actively reshapes the hippocampus to improve that mechanism's efficiency. This aligns with Maguire and colleagues' study which also presented this trend with taxi drivers. Taxi drivers had their posterior hippocampus disproportionately enlarged compared to controls which demonstrated that more physical navigation steadily adapted their brain architecture to support superior memory recall and spatial navigation. Therefore it can be assumed that movement does more than enhance memory recall but also enhance the memory systems in the hippocampus that enable memory recall. This biological mechanism forms the basis for the following aim which examines whether virtual movement can replicate the same neuronal processes present in the hippocampus and memory systems despite absence of physical movement.

Discussion (Aim 2)

In Aim 2, Dougherty and colleagues' findings demonstrate that virtual movement enhances memory formation via the hippocampal-theta mechanism whilst the supplementary study validated it. Machine learning classifiers reliably predicted memory performance trained on EEG data and behavioural data, from the supplementary study, which shows the mechanism is robust enough to manifest at both neural and behavioural level. As theta waves increased so did accurate memory recall and more efficient behavioural navigational behaviours suggested stronger communications between hippocampus and neocortex. This aligned with how physical movement induced LTP in hippocampus and neocortex (Van Praag et al. 1999) suggesting both modes of movement increase synaptic plasticity and that enhances memory recall. The supplementary behavioural analysis conducted extends these findings by providing the visible manifestations of that mechanism. Although the behavioral models produced modest classification accuracy compared to EEG classifiers, their results nevertheless validate the mechanism due to brain oscillations being more robust than behavioural characteristics. The strongest behavioral predictors were the delivery gap and navigation distance, a pattern that aligns with O'Keefe and Dostrovsky's study in which hippocampal functions propose that successful episodic memory depends not simply on representing static spatial locations but active movement through space and time that updates internal spatial maps. Additionally, the primacy and recency effects present in the EEG and behavioural dataset indicates that virtual navigation preserves the classical organisation principles that are commonly observed in the traditional free recall paradigm. Altogether, these findings strengthen the conclusion that virtual movement enhances memory formation by demonstrating that virtual movement directly increases theta

oscillations that coordinate the hippocampal spatial cells to encode spatial information and enhance memory formation the same way physical movement does.

Discussion (Aim 3)

The findings presented support the proposition that imagined movement via the Memory Palace technique can enhance memory formation despite the complete absence of physical movement. Unlike physical or virtual movement, the memory palace technique relies on mentally navigating through an already internalized spatial map of a familiar environment. Nevertheless, evidence from fMRI, behavioral experiments and the pilot study suggest that mentally navigating through space is sufficient to trigger encoding systems for episodic memory. Altogether, these findings propose that imagined movement doesn't increase short term recall; the memory palace technique promotes the formation of more stable well represented episodic memories that are recalled more accurately. Moreover, both published studies and the pilot study suggest that Memory palace improves raw recall but not serial order which suggests that the technique supports organisation of memories spatially rather than sequentially. Across published literature and the pilot study, concrete words consistently outperformed abstract words regardless of encoding strategy which supports the dual-coding theory (Paivio, 1971); however, neither Legge and colleagues nor Wang and Thomas found a significant interaction between word concreteness and the Memory Palace technique. This suggests the Memory Palace enhances memory through spatial organisation rather than visual imagery. Moreover, Dresler's study showed that consistent imagined movement reshaped brain connectivity patterns to match superior memory recall, aligning with trends found in Van Praag and colleagues (1999) and Maguire and colleagues (2000). Overall, the synthesized evidence supports the conclusion that imagined movement particularly through the memory palace technique supports memory formation by triggering and even enhancing encoding systems that are linked to spatial navigation. Several limitations must be acknowledged. In Aim 1, the findings from O'Keefe and Dostrovsky as well as Van Praag and colleagues are based on animal models and may not directly translate to humans; adult hippocampal neurogenesis in humans remains debated. Although the data collected was very heterogeneous with two studies presenting results collected firsthand from animal models with only one study using humans, the results are scientifically objective and very granulated. In Aim 2, the EEG evidence is correlational therefore causation cannot be inferred; it isn't known whether theta waves increase accurate recall or accurate recall increases theta waves. Additionally, the behavioural ML classifiers achieved only modest AUC values of 0.566 which were substantially lower than the neural classifiers. In Aim 3, the pilot study is observational with n=10 and no inferential statistics. Furthermore, while it is shown that the employment of the memory palace technique has memory benefits, the idea that it stimulates the same hippocampal spatial cells that both virtual and physical movement stimulate is not clinically proven and is the suggested underlying mechanism. As it is impossible to test the memory palace in animals and unethical to insert electrodes into human brains to measure firing rates of those hippocampal spatial cells, the fMRI scans of changed functional connectivity and

shape surrounding the hippocampus is the closest evidence of the memory palace activating the same hippocampal-theta mechanism.

Overall, the three aims suggest that movement helps memory because it utilizes the hippocampal-theta mechanism and in many cases enhances it to support superior memory recall.

Conclusion

In conclusion, this paper suggests that all three modes of movements can enhance memory formation by involving the hippocampus and related spatial-navigation systems. This paper is the first synthesis of existing literature and conducted research that argues that multiple modes of movement – physical, virtual and imagined – share a hippocampal-theta mechanism. Physical movement is supported by evidence of neurogenesis and synaptic plasticity; virtual movement by theta oscillations during navigation; and imagined movement by spatial mnemonic encoding.

These findings are very significant for the education sector, because of two main practical applications: implementation of mnemonic strategies in educational institutions can improve efficient learning of curriculum based jargon for adolescent students; constructing VR or imagined mechanisms to aid in improving memory for elderly or mobility-impaired individuals. Moreover, it can have an impact on neurorehabilitation work by integrating physical movement into neurorehabilitation programmes, memory recovery can potentially be enhanced following stroke, traumatic brain injury, or other neurological disorders. Future studies should test the link between movement and memory by comparing the three modes of movement directly. This is to better determine which movement is superior in activating the hippocampal theta mechanism and improving memory recall (or long term memory consolidation). To address limitations found in the conducted research and published papers, it is recommended that future studies utilize larger sample sizes and test on understudied groups such as neurotypical adolescents.

Works Cited

Alabi, Adekunle, Dieter Vanderelst, and Ali Minai. "Rapid Learning of Spatial Representations for Goal-Directed Navigation Based on a Novel Model of Hippocampal Place Fields." 2022.

Bliss, T. V. P., and T. Lømo. "Long-Lasting Potentiation of Synaptic Transmission in the Dentate Area of the Anaesthetised Rabbit." Journal of Physiology 232, no. 2 (1973): 331–356.

Buzsáki, György, and Edvard I. Moser. "Memory, Navigation and Theta Rhythm in the Hippocampal-Entorhinal System." Nature Neuroscience 16, no. 2 (2013): 130–138. https://doi.org/10.1038/nn.3304.

Dresler, Martin, William R. Shirer, Bernhard N. Konrad, et al. "Mnemonic Training Reshapes Brain Networks to Support Superior Memory." Neuron 93, no. 5 (2017): 1227–1235.

Dougherty, Matthew R., Woohyeuk Chang, Joseph H. Rudoler, Brandon S. Katerman, David J. Halpern, James P. Bruska, Nicholas B. Diamond, and Michael J. Kahana. "Neural Correlates of Memory in a Naturalistic Spatiotemporal Context." bioRxiv (2022). https://doi.org/10.1101/2022.11.30.518606.

Hafting, Torkel, Marianne Fyhn, Sturla Molden, May-Britt Moser, and Edvard I. Moser. "Microstructure of a Spatial Map in the Entorhinal Cortex." Nature 436, no. 7052 (2005): 801–806.

Horner, Aidan J., James A. Bisby, Ewa Zotow, Daniel Bush, and Neil Burgess. "Grid-Like Processing of Imagined Navigation." Current Biology 26, no. 6 (2016): 842–847. https://doi.org/10.1016/j.cub.2016.01.042.

Isaksson, Johan, Erik Ekman, and Frank Lindblad. "Memory Training with the Method of Loci for Children and Adolescents with ADHD — A Feasibility Study." Applied Neuropsychology: Child 12, no. 3 (2022): 209–218. https://doi.org/10.1080/21622965.2022.2141120.

Legge, Eleanor L. G., Christopher R. Madan, Enoch T. Ng, and Jeremy B. Caplan. "Building a Memory Palace in Minutes: Equivalent Memory Performance Using Virtual Versus Conventional Environments with the Method of Loci." Acta Psychologica 141, no. 3 (2012): 380–390.

Maguire, Eleanor A., David G. Gadian, Ingrid S. Johnsrude, Catriona D. Good, John Ashburner, Richard S. J. Frackowiak, and Christopher D. Frith. "Navigation-Related Structural Change in the Hippocampi of Taxi Drivers." Proceedings of the National Academy of Sciences 97, no. 8 (2000): 4398–4403. https://doi.org/10.1073/pnas.070039597.

McClelland, James L., Bruce L. McNaughton, and Randall C. O'Reilly. "Why There Are Complementary Learning Systems in the Hippocampus and Neocortex." Psychological Review 102, no. 3 (1995): 419–457.

O'Keefe, John, and Jonathan Dostrovsky. "The Hippocampus as a Spatial Map." Brain Research 34, no. 1 (1971): 171–175.

Paivio, Allan. Imagery and Verbal Processes. New York: Holt, Rinehart and Winston, 1971.

Paivio, Allan. "Dual Coding Theory: Retrospect and Current Status." Canadian Journal of Psychology 45, no. 3 (1991): 255–287.

Qureshi, Ammara, Fatima Rizvi, Aliya Syed, Aisha Shahid, and Hana Manzoor. "The Method of Loci as a Mnemonic Device to Facilitate Learning in Endocrinology Leads to Improvement in Student Performance as Measured by Assessments." Advances in Physiology Education 38, no. 2 (2014): 140–144. https://doi.org/10.1152/advan.00092.2013.

Rudoler, Joseph H., Matthew R. Dougherty, Brandon S. Katerman, James P. Bruska, Woohyeuk Chang, David J. Halpern, Nicholas B. Diamond, and Michael J. Kahana. "Spatial Memory and Non-Invasive Closed-Loop Stimulus Timing." Dataset. OpenNeuro, 2023. https://doi.org/10.18112/openneuro.ds004706.v1.0.0.

Squire, Larry R., and Stuart Zola-Morgan. "The Medial Temporal Lobe Memory System." Science 253, no. 5026 (1991): 1380–1386.

Stickgold, Robert. "Sleep-Dependent Memory Consolidation." Nature 437, no. 7063 (2005): 1272–1278.

Tulving, Endel. "Episodic and Semantic Memory." In Organisation of Memory, edited by Endel Tulving and Wayne Donaldson, 381–403. New York: Academic Press, 1972.

van Praag, Henriette, Brian R. Christie, Terrence J. Sejnowski, and Fred H. Gage. "Running Enhances Neurogenesis, Learning, and Long-Term Potentiation in Mice." Proceedings of the National Academy of Sciences 96, no. 23 (1999): 13427–13431. https://doi.org/10.1073/pnas.96.23.13427.

Walker, Ian, and Charles Hulme. "Concrete Words Are Easier to Recall than Abstract Words: Evidence for a Semantic Contribution to Short-Term Serial Recall." Journal of Experimental Psychology: Learning, Memory, and Cognition 25, no. 5 (1999): 1256–1271. https://doi.org/10.1037/0278-7393.25.5.1256.

Wang, Alison Y., and Mark H. Thomas. "Looking for Long-Term Mnemonic Effects on Serial Recall: The Legacy of Simonides." American Journal of Psychology 113, no. 3 (2000): 331–340.

One Is Not Born a Philosopher: The Life and Thought of Simone de Beauvoir
By Adriana Wu

Abstract

The life of Simone de Beauvoir represents a striking contradiction. On one hand, she was a philosopher who championed radical existential freedom. Yet on the other hand, her own life was profoundly shaped and constrained by the very gendered norms her work sought to dismantle. This paper argues that Beauvoir's philosophy is inseparable from her lived experience. By weaving together the details of her personal life along with a critical analysis of her philosophical writings, this paper demonstrates that Beauvoir's theories emerged directly from the concrete realities of her own existence as a woman.

The analysis proceeds by examining three key facets of Beauvoir's life. First, it explores her formative years, tracing how her rejection of bourgeois Catholic values, exceptional academic achievements, and devastating loss of her friend Zaza culminated in an intellectual independence definitive of her career. Second, it examines her complex partnership with Jean-Paul Sartre. Challenging the historical narrative that painted her as merely his intellectual disciple, it reveals the collaborative yet divergent relationship in which Beauvoir began to develop her own distinctive feminist philosophy. Third, the paper analyzes Beauvoir's engagement and transformation with prior philosophical theories such as Hegel's Master-Slave Dialectic and Nietzsche's concept of self-created values. She utilized these doctrines to diagnose women's subordination as a stalled social dialectic rather than a natural fact.

This paper's central theoretical contribution lies in its demonstration that Beauvoir's concept of "the Other" and her claim that "one is not born, but rather becomes woman" represents a radical social constructionist argument grounded in existentialist principles. Furthermore, it highlights a crucial challenge Beauvoir established against Sartrean existentialism. While Sartre treated freedom as a metaphysical given available to all conscious beings, Beauvoir contended that freedom is situated – contingent upon gender and class. This insight reveals that abstract existential freedom is not a universal condition, but rather a privilege.

Ultimately, this paper contends that Beauvoir's enduring significance lies not merely in the application of existentialism to the question of woman, but in fundamentally transforming the idea of existentialism itself. Grounding abstract philosophy in the concrete, gendered reality of lived experience, Beauvoir ensured that the question of woman would forever remain a central and unavoidable philosophical problem.

Part 1: Introduction

Simone de Beauvoir's life was filled with contradiction; she, as a philosopher who championed radical freedom, found herself constrained by the very gender norms that her work seemed to label and dismantle. This tension between the abstract, genderless subject of existentialism as well as the concrete, gendered reality of being woman drove Beauvoir and her

intellectual legacy. This paper seeks to examine how the upbringing, relationships, and struggles of Beauvoir's life shaped her famous ideas. By weaving together her biography as well as her bibliography, this paper will demonstrate that a path to understanding Beauvoir's philosophy is to realize the woman who lived it.

Part 2: Upbringing

January 9, 1908, in Paris, France, a little girl was born. Named Simone de Beauvoir, this young girl would go on to be one of the mothers of second-wave feminism. Growing up in a traditional bourgeois, Catholic family with a younger sister named Hélène, Beauvoir spent much of her time actively resisting against her family's traditional ideologies. That little girl quietly promised herself to never become a housewife, much less a mother. Instead, she would follow in her father's footsteps, to become an intelligent individual, reading works of literature he introduced to her and writing about her ideas and experiences (Bergoffen). Later on, she attended a private Catholic school for girls, the only option that was culturally acceptable for her at the time. There, she became close friends with Elizabeth Mabille, who she nicknamed Zaza, at school. Spending large amounts of time together, the girls contended against the stringent expectations of bourgeois and Catholic femininity. Devastatingly, this friendship was cut short when Zaza died of meningitis in 1929. Beauvoir was heartbroken, writing her feelings into a novel in 1954, but published in 2021 as it was considered "too intimate" to be published at the time (Bergoffen). As a student, though, Beauvoir continued to be self-reliant, inquisitive, but most importantly, significantly talented within her studies. Attempting to fill her life with as many experiences as possible, she ignored the voices of the adult world that attempted to keep her in the home. With her family's loss of class status in 1919, the option for marriage was thrown off the table. Moreover, at the young age of 14, Beauvoir rejected the existence of God. Both of these factors hurled the bright student into the realm of philosophy. That little girl, riddled by the anguish of society but, more importantly, sculpted by her own pursuits, began to tangibly realize her independence against a society where it was a norm for women to be reliant on men (Bergoffen).

In 1925, Beauvoir passed the baccalaureate exams in mathematics and philosophy, allowing her to then study at the Institute Catholique and the Institute Saint-Marie. There, she earned Certificates of Higher Studies in French Literature and Latin. Then in the fall of 1926, Beauvoir began her studies at the Sorbonne for philosophy. Somewhere during her time there from 1928 to 1929, she wrote her graduate thesis on Leibniz before, in 1929, passing the competitive agrégation exam in philosophy. Being the youngest person to successfully pass the exam, Beauvoir was only 21 when she finished second to Sartre who was taking the exam for the second time. Age was not the only major achievement Beauvoir accomplished through the exam. Indeed, she was also the eighth woman to pass, aiding her in solidifying economic independence under patriarchal limitations (Bergoffen). Within the second volume of her autobiography "The Prime of Life" (1960), she described this time as carefree and untethered to the constraints of the world (16).

Part 3: Relationship With Sartre

One of these aspects that made an impact on Beauvoir and her thinking was her romantic partner Jean-Paul Sartre. The couple first met in 1929 when they attended the same elite graduate program in philosophy at the École Normale Supérieure (Rosenthal). At the time, they recognized each other as intellectual equals (Grimes), which was rare for Beauvoir who was usually the brightest in the room. Their relationship constituted intellectual competitors more than lovers. Ten months later, they began their romantic partnership. Eventually, Sartre proposed to Beauvoir, but was turned down. This was because Sartre rejected bourgeois hypocrisy, which was the patriarchal expectation that married men engage in extramarital affairs and lie to their wives, who, in turn, acted ignorant to their husband's actions. Rather, he decided that they each would have the freedom to pursue sexual or romantic relationships outside of their own. However, this was based on the condition that they were completely transparent about it (Brown). Beauvoir, who was deeply in love with him, agreed. As a result, the two never lived together, much less became married. Rather, they met daily in Parisian cafes to talk, write, and edit each other's work. Hence, Simone de Beauvoir would later go on to say that she had never published a piece of writing without her partner's input until after his death. In turn, Sartre referred to Beauvoir as a "filter" for his books, with some scholars arguing that Beauvoir even wrote some of them for him (Brown). While this plan was perfect for Sartre, Beauvoir was left in significant pain. Author Kate Kirkpatrick in her book "Becoming Beauvoir" analyzes Beauvoir's diaries and letters to show her feelings of betrayal when Sartre was frequently not transparent (15). His actions of setting up apartments near him for his affairs often left Beauvoir feeling marginalized and insecure about her place in his life (Bergoffen). To make matters worse, Sartre had begun considering marriage with another woman. Beauvoir saw this relationship as threatening to their bond, upon which she had spent much of her adult life (Menand). Not only did Beauvoir and Sartre have a deeply romantic but troublesome relationship, Sartre was also likely financially reliant on Beauvoir who took part-time jobs. Then, when Sartre contracted health issues and blindness, Beauvoir took on a third role in their relationship, being his caretaker, fiercely protecting him and helping him to continue working (Kirkpatrick 373).

Sartre's story is interwoven into the story of Beauvoir. Their interlocked thinking and philosophical exploration had an undeniable impact on the concept of existentialism that Beauvoir developed. For decades, the narrative that the media had surrounding the couple was that Sartre contributed the philosophical part of the relationship while Beauvoir was the partner. A larger factor contributing to this was the immense prejudice against women in academia at the time (Kilden). As a result Beauvoir would downplay her own philosophical output, going to extreme lengths to say "I am not a philosopher" (Battersby). Kirkpatrick argues that Beauvoir's declaration was a performance to protect Sartre's ego and their relationship, not a true reflection of her own philosophical work (Kirkpatrick 8). Within Beauvoir's early work "She Came to Stay", she can be seen working through existential problems such as the conflict of consciousness, the nature of freedom, as well as the ethical implications of relationships. The thinking used to create these ideas was not provided by Sartre, but thought of together with him.

That is to say, their ideas were not completely the same. A key divergence was on how Sartre aimed to analyze how the body becomes an object in the world especially under the gaze of another person (être-pour-autrui) while Beauvoir analyzed what it was like to inhabit a body. This bifurcation can be seen between Beauvoir's 1947 work "The Ethics of Ambiguity" in contrast to Sartre's "Being and Nothingness". Sartre in his work primarily examined the structure of human existence while Beauvoir analyzed what we should do given that structure. To answer this question, Beauvoir argued in her piece "The Ethics of Ambiguity" that freedom is realized through human relationships and the fight for everyone to have the ability to exercise their freedom. This represented not only a difference in focus, but also a shift from Sartre's more individualistic focus. Beauvoir goes on to write a culmination of her own existentialist philosophy, rather than an application of Sartrean existentialism, within "The Second Sex" in 1949. There, Beauvoir wrote her famous line "One is not born, but rather becomes, woman" (Beauvoir, The Second Sex 330) where she described that the "feminine essence" is not something a woman is born with, but rather prescribed by society onto her. She is then made into the "Other" in a patriarchal society that then denies her the ability to achieve authentic and free existence prized by existentialism (Beauvoir, The Second Sex 26).

Part 4: Hegel's Idea of "The Other"

While Beauvoir differed from Sartre despite their romantic relationship, she utilized ideas from earlier philosophers such as the "Master-Slave Dialectic". A philosophical metaphor from Georg Wilhelm Friedrich Hegel's "Phenomenology of Spirit", Beauvoir took advantage of this when creating her idea of "the other". The stages of dialectic first begin during the initial conflict. There, the two conscious beings meet, seeing each other as a threat, they engage in a struggle for recognition. The winner becomes the master and the loser becomes the slave. While the master may have seemingly won, as they are now recognized by the slave and also enjoy the labor provided by the slave, this victory is hollow. In other words, the master is reliant on the recognition of someone they deem unworthy, making this recognition worthless. Meanwhile, the slave learns discipline, skill, and a more concrete understanding of the world through their labor. Additionally, the slave faces the fear of death within the initial struggle and then channels that fear into work, transcending their immediate existence. These factors combined together allow the slave to be more self-conscious, while the master remains dependent on them for what is really meaningless recognition. So, at the end of the day, the true winner of the conflict was not the master, but rather the slave (Hegel 102).

The same way the master's legitimacy is dependent on recognition by the slave, Manon Garcia within her book "We Are Not Born Submissive" posits this relationship as analogous to that of men and women. Man is defined as the master; while women, on the other hand, are the other, or the slave, a deviation from what is normal as well as the object upon which the male subject defines himself (Garcia 51). While there was no true struggle for recognition, with men delegating women as the "other", many women have often "consented" to this label. They see that it offers economic security, where the men are the breadwinners of the family. They see that

it provides social protection, when the woman's social status is uplifted by the efforts of her husband. As a result, these women engage in repetitive acts, washing the dishes every day, taking the child to school every day, and buying groceries every week. Therefore, there is nothing created that is lasting enough for transcendence like the slave within Hegel's metaphor. Rather, these women are trapped in immanence, the state of static being.

A key contrast to insert between the two philosophers was Beauvoir's important adaptation that the gender dialect is fundamentally stalled (Beauvoir, The Second Sex). While Hegel's model creates a future resolution between the master and slave with mutual recognition as equal beings, men paint the patriarchy not as a social construct, but rather a natural, biological fact.

Part 5: Essentialism

This is the idea of essentialism, that all those born with XX chromosomes, are destined to have "Otherness" as part of their "feminine essence". Men project onto women characteristics that justify and perpetuate that "Otherness". Beauvoir seeks to undermine this idea (Beauvoir, The Second Sex 272). Born with a biological sex within her body, the individual becomes a woman. Her "femininity" is not her pre-ordained destiny but rather a result of a world that constantly tells her that she is the "Object" and not the "Subject". Women continuously construct themselves through their choices and actions. What is labeled as "femininity" is simply the set of behaviors and traits she has *learned* to adopt to survive and navigate her status as the Other.

Part 6: Existentialism

By dismantling the myth of a 'feminine essence,' Simone de Beauvoir exposes a truth that extends far beyond the category of woman: there is no human essence (Beauvoir, The Second Sex). This radical rejection derives from the philosophy of Friedrich Nietzsche. Nietzsche proclaimed that God, the creator of humans, was dead. This refuted the western system of legitimization that believed God to have given individuals a meaning or purpose within their lives. Rather, Nietzsche argued that life has no intrinsic value or truth as a result of a vacancy of "supreme being", the idea of nihilism (Nietzsche, The Gay Science 181). Beauvoir, inspired by this idea, used it to argue that, since there was no divine essence for humans, they must then define themselves through their actions and choices. These social constructs prove that there is no inherent "feminine essence". In other words, femininity is a social creation that is imposed by society onto women. Here Beauvoir wrote one of her famous quotes "One is not born, but rather becomes woman." (Beauvoir, The Second Sex 330)

Further, Nietzsche's ideal, presented within his work "Thus Spoke Zarathustra", was for individuals to become Übermensch, a person with the acceptance of God's death. The solution for these individuals to fill the void in purpose was to create one's own will to live. This power is fundamental within a life that includes not only the desire to dominate others, but also to strive for self-growth and the expression of one's potential. Beauvoir analyzes how the power from one's will to live is denied and redirected toward men. A woman's transcendence is blocked,

forcing her into immanence. While her power is channeled to men through manipulation, which Beauvoir sees as illegitimate. Beauvoir uses this idea to show that the same power allowing Übermensch to create their own will to live is that of men to impose values upon women. These values include the ideas that define women as the "Other", the object, the subordinate, deepening the argument that "femininity" is a social construct. Lastly, Beauvoir defines the concept of an "authentic woman" as a descendant of the Übermensch. She must reject the ready-made values of her society that tell her to be passive, obedient, and subordinate. She must then be courageous; she needs to choose her own goals and redefine herself through her own actions despite the immense social pressures upon her (Beauvoir, The Second Sex 24).

While Nietzsche prophetically announced the crisis of a godless world and called for a radical creation of values, it was Jean-Paul Sartre who transformed this provocative call into a systematic philosophical doctrine. Sartre took Nietzsche's terrifying void and built within it a formal structure for human freedom, culminating in his foundational principle: 'existence precedes essence. Unlike a package of wooden pieces meant to be built into a chair, humans have no such blueprint. Individuals first exist, then define their "essence" through their decisions as well as actions. Moreover, these choices are completely free from the interference of a higher being: God. People are responsible for who they are. In other words, Sartre paints freedom as a structure packaged together with consciousness. It is a metaphysical given (Sartre, Existentialism Is a Humanism). Contrastingly, Beauvoir argues that this is not true for women. She believed that in order to attain such luxury, one must be the right gender, as well as in the right social class for that power to be bestowed upon them. A man is able to freely assert his beliefs within a classroom without facing negative criticisms while a woman who does the same is pessimistically labeled as bossy. Oppression against women works by systematically discriminating against them (Beauvoir, The Second Sex 856).

Part 7: Conclusion

Simone de Beauvoir created from her a life, a profound philosophical text. From Hegel, she took the idea of the "Other" and gave it a devastating new context and from the existential pulse of Nietzsche and Sartre, the radical doctrine that "existence precedes essence." Yet she refused to let these ideas remain abstract. By applying them to the raw material of her own lived experience as a woman—her education, her pivotal pact with Sartre, her observations of the women around her—she forged a singular and world-altering thesis: that one "becomes a woman" within an oppressive social situation. In doing so, Beauvoir did not just study philosophy; she irrevocably expanded it, turning a lens on the male-dominated canon to build a feminist framework that exposed the very foundations of patriarchy, ensuring that the question of women would forever be a central philosophical problem.

Works Cited

Aho, Kevin. “Existentialism.” Stanford Encyclopedia of Philosophy, Stanford University, 6 Jan. 2023, https://plato.stanford.edu/entries/existentialism/.

Battersby, Christine. “‘I Am Not a Philosopher’: Simone De Beauvoir and the Delirium of Genius.” Women’s Philosophy Review, Women in Philosophy, 12 Nov. 1994, https://warwick.ac.uk/fac/soc/philosophy/people/battersby/delirium.pdf#2#1.

Bergoffen, Debra. “Simone de Beauvoir (Stanford Encyclopedia of Philosophy).” Stanford Encyclopedia of Philosophy, 17 Aug. 2004, https://plato.stanford.edu/entries/beauvoir/.

Brown, Hannah. “Simone de Beauvoir and Jean-Paul Sartre: An Existential Love Story.” Literary Ladies Guide, 26 July 2018, https://www.literaryladiesguide.com/literary-musings/simone-de-beauvoir-and-jean-paul-sartre-an-existential-love-story/.

de Beauvoir, Simone. She Came to Stay. 1943. W. W. Norton & Company.

De Beauvoir, Simone. The Ethics of Ambiguity. 1947. New York, Open Road Integrated Media, 2018.

---. The Second Sex. Oxford, Oxford University Press, 1949.

Feilmeier, J.D. “Hegel’s Master-Slave Dialectic: The Search for Self-Consciousness – Writing Anthology.” Central.Edu, 1992, https://central.edu/writing-anthology/2019/07/08/hegels-master-slave-dialectic-the-search-for-self-consciousness/.

Garcia, Manon. We Are Not Born Submissive : How Patriarchy Shapes Women’s Lives. Princeton, Princeton University Press, 2021.

---. We Are Not Born Submissive : How Patriarchy Shapes Women’s Lives. Princeton, Princeton University Press, 2021.

Grimes, Reviewed by William. “Tête-À-Tête: Simone De Beauvoir and Jean-Paul Sartre.” The New York Times, 7 Oct. 2005, https://www.nytimes.com/2005/10/07/arts/ttette-simone-de-beauvoir-and-jeanpaul-sartre.html. Accessed 7 July 2026.

Hegel, G.W.F. Phenomenology of Spirit. S.L., Univ Of Notre Dame Press, 1807.

Kilden. “Simone De Beauvoir: From Sartre’s Secretary to Feminist Style Icon.” Kilden, 30 Apr. 2018, https://kjonnsforskning.no/en/2018/04/simone-de-beauvoir-sartres-secretary-feminist-style-icon. Accessed 7 July 2026.

Kirkpatrick, Kate. Becoming Beauvoir : A Life. London ; New York, Ny, Bloomsbury Academic, An Imprint Of Bloomsbury Publishing Plc, 2020.

Menand, Louis. “Stand by Your Man.” The New Yorker, 2017, https://www.newyorker.com/magazine/2005/09/26/stand-by-your-man. Accessed 7 July 2026.

Nietzsche, Friedrich. The Gay Science. 1882. Mineola, Ny Dover Publ, 2006.

---. Thus Spoke Zarathustra. S.L., Simon & Brown, 1883.

Rosenthal, Abigail. “Jean-Paul Sartre and Simone De Beauvior - Abigail Rosenthal - Medium.” Medium, 25 Feb. 2020, https://medium.com/@dearabbiesilvousplait/jean-paul-sartre-and-simone-de-beauvior-f31c4af749c0. Accessed 7 July 2026.

Sartre, Jean-Paul. Being and Nothingness: An Essay in Phenomenological Ontology. Abingdon, Oxon, Uk, Routledge, 1943.

---. Existentialism Is a Humanism. 1946. Translated by Carol Macomber, Yale University Press, 2007.

Simone De Beauvoir. The Prime of Life. London, Penguin, 2001.

Spencer, Erika Hope. “Research Guides: Feminism & French Women in History: A Resource Guide: Simone de Beauvoir.” Guides.Loc.Gov, https://guides.loc.gov/feminism-french-women-history/famous/simone-de-beauvoir.

Recognizing Both the State and Federal Governments as Enablers in the United States' Wilderness Therapy Programs By Brynn Dickerson

Between the years of 1990 and 2007, the GAO (Government Accountability Office) investigated allegations of death, abuse, and neglect across privately owned wilderness therapy programs, and was able to confidently link ten adolescent deaths to the poor treatment of minors across the United States (Government Accountability Office). They investigated reports of dehydration, physical abuse, medical negligence, and heat stroke over the course of seventeen years and concluded that both state and federal oversight was inconsistent and insufficient (Government Accountability Office). Although the GAO's findings only highlighted ten instances, the National Youth Rights Association and Congressional Testimony make note of the "dozens" of deaths that have occurred at these programs, many of which taking place after 2007 (Anderson). This places the abuse and neglect occurring within these facilities in a far more recent context, demonstrating that the problem remains prevalent and requires urgent attention (Siebert).

These adolescent treatment facilities, commonly referred to as "wilderness therapy programs" are typically privately owned and operated facilities which employ individuals with limited or non-existent background in child welfare (Pollack et al.). These camps and their staff don't have strict licensing requirements by the state, and wellness checks are far too limited (Rubino). Because of this, these camps use forceful restraint to take these "troubled" teens from their beds at night and transport them to these camps, where many report experiencing physical, emotional, and sexual abuse despite programs being marketed as reformative treatment for adolescents struggling with behavioral or mental health issues. (Mohan et al.).

While some of these camps have been shut down over the years, and some of them have yielded empirical results in adolescent psychology and behavior, many existing programs appear to cause more harm than good regarding adolescent mental health (Miller et al.). These problems regarding the abuse and neglect of minors are rooted primarily in one aspect, and that factor is lack of oversight from state and federal governments (Guiora and Haack 12). These camps exist all over the United States, but all of the programs who draw the most allegations reside in the state of Utah. This issue is one that requires a multifaceted solution that would need to be implemented gradually, such as comprehensive federal standards, transparent reporting systems, enforceable licensing protocols, and accountability mechanisms that balance reform with respect for state autonomy (Raymond). Meaningful reform is unfeasible unless both state and federal governments acknowledge their roles in enabling inadequate oversight (Anderson).

When it comes to lack of both state and federal regulation, it is important to recognize both what else needs to be done and how their lack of accountability continues to enable this mistreatment. On a state level, this might mean conducting further and more recent research that extends beyond simply identifying confident program mistreatment deaths and instead implementing smarter safety practices (Guiora and Haack 21). The legal research report by University of Utah law professor Amos Guiora and supervised student researcher Tayzlee Haack

takes this concept and examines the ways in which specifically Utah's laws permit abuse in wilderness therapy and troubled teen facilities (Guiora and Haack 20). Guiora and Haack contend that by neglecting to offer proper supervision, licensing, and training, institutional actors and government representatives behave as "criminal enablers." The authors apply a legal definition of enabling to Utah's regulatory shortcomings and conclude that systematic incompetence is the main reason for ongoing misuse. The authors suggest specific legal changes, such as increased accountability for enablers and more precise statutory obligations. Although these remedies have strong support, the authors admit that political will and enforcement are still major barriers to their success (Guiora and Haack 25). By analyzing the lack of policy in Utah specifically, they in turn address what needs to be done on a federal level by making note of how state legislation is typically dependent on federal reform and noting how some "state autonomy" can and should be spared for the sake of children's wellbeing.

Furthermore, lack of initiative from state governments can be in part due to the lack of transparency surrounding this topic. The 2007 GAO report was some of the first and last steps towards the government recognizing faults in the system and implementing positive change (Rubino). Since then, almost every other bill that has tried to pass either on a federal or state level has died on the floor or died in committee (Anderson). Whether it be indifference or lack of understanding, both stem from a fault in clarity. Legislators may not understand the gravity of this problem, as they have only been allowed minimum intervention due to the lack of protocols and private ownership (Guiora and Haack 19). By not calling for routine inspections, proper documentation, or licensing of property and staff from the start, the government has enabled this abuse. Government inaction has contributed to a structure that inhibits true intervention. Another possibility is simply government indifference towards this issue. When it comes to the economics of it all, a nine week wilderness therapy program can cost an "upwards of 60,000 dollars," making it an industry that is not only centered in private equity, but is also very large scale (Robert). This in turn would mean that surveying each and every one of these camps and assuring they follow protocol, legal, and licensing requirements would be very costly, and implementing reformations even more expensive. Although regulating these camps may not be a legislative priority, consistent failure to enforce proper safety standards has allowed for these harmful conditions to persist (Krishnan).

Another issue regarding transparency is that it is hard for those impacted to speak up and encourage the government to take initiative. In 2020, American media personality and businesswoman Paris Hilton released a documentary titled *This is Paris* (Kambasha). *This is Paris* recounts Paris Hilton's experience at a program within the troubled teen industry, describing forced transport, isolation, and sustained emotional abuse. Her testimony underscores how these institutions operate within secrecy protected by limited inspections and the absence of mandatory public reporting systems (Kambasha). The fact that such treatment remained largely hidden, even in the case of a well known individual, demonstrates how insufficient government transparency requirements allow abuse to continue without accountability (Miller Schreifels).

Individuals without a public platform may feel unable to speak out because of the trauma, such as PTSD, OCD, Anxiety, and IED, associated or caused by these institutions (Mohan et al.).

Other factors impact individuals' perceptions of wilderness therapy and their experiences within them. Family dynamics, social emotional relationships, previous substance abuse and mental health history, previous trauma, cultural attitudes, and economic status are all things that need to be considered (Pollack et al.). But with over 500 lawsuits, “1,619 staff-involved abuse incidents” in 2005 alone, and many more untold stories, it is clear that both the state and federal governments aren’t the sole perpetuator, but one of the *primary* contributing factors (Government Accountability Office). Through a more strictly enforced documentation database, harsher licensing requirements for staff, routine inspections of program sites, greater focus on outpatient and community based help, and making sure those abusers face repercussions they deserve are just some of many things that can and should be done by the government systems (Guiora and Haack 20). State autonomy is important, but intervention and accountability at both levels is absolutely crucial in order to make sure troubled adolescents are truly getting the help they need, rather than unintentionally worsening existing problems.

Works Cited

Anderson, Sulome. "When Wilderness Boot Camps Take Tough Love Too Far." The Atlantic. The Atlantic, www.theatlantic.com/health/archive/2014/08/when-wilderness-boot-camps-take-tough-love-too-far/375582/. Accessed 20 Jan. 2026.

Annerstedt, Matilda ANNERSTEDT, and Peter Währborg. "Nature-assisted therapy: Systematic review of controlled and observational studies." Scandinavian Journal of Public Health. JSTOR, www.jstor.org/stable/45150415?searchText=nature+assisted+therapy&searchUri=%2Faction%2FdoBasicSearch%3FQuery%3Dnature%2Bassisted%2Btherapy%26so%3Drel&ab_segments=0%2Fbasic_search_gsv2%2Fcontrol&refreqid=fastly-default%3A2fcefbb76a277f1199c262f1dbebcb0f&seq=1. Accessed 21 Jan. 2026.

Daniel, Bowen J., and James T. Neill. Statistically significant short-term effect sizes and meta-analytic benchmarks for all participants and clinical range participants. ScienceDirect, Oct. 2016, www.sciencedirect.com/science/article/pii/S0149718915300094. Accessed 24 Feb. 2026. Chart.

Eisenberg, Michael, Daniel Pollack, and Shipp. "Wilderness Therapy Settings." Michigan Child Welfare Law Journal, 2013, JSTOR.

Guiora, Amos, and Tayzlee Haack. "The Kids Aren't Alright: How Governments Have Enabled the Abuse of Children." University of Utah College of Law, papers.ssrn.com/sol3/papers.cfm?abstract_id=5387959. Accessed 20 Jan. 2026.

Kambasha, Michelle. "This Is Paris: Hilton documentary puts the reality in reality TV." The Guardian, 15 Sept. 2020, www.theguardian.com/tv-and-radio/2020/sep/15/this-is-paris-hilton-documentary-puts-the-reality-in-reality-tv. Accessed 18 Feb. 2026.

Krishnan, Anilya. "The Troubling Reality of Wilderness Therapy | the Regulatory Review." Www.theregreview.org, 5 July 2023, www.theregreview.org/2023/07/05/krishnan-the-troubling-reality-of-wilderness-therapy/.

Miller, Jessica. "How Utah Became the Leading Place to Send the Nation's Troubled Teens." Www.apmreports.org, 5 Apr. 2022, www.apmreports.org/story/2022/04/05/how-utah-leads-nation-troubled-teens.

Miller, Jessica, et al. "'Blindfolds, hoods and handcuffs': How some teenagers get to Utah's youth treatment programs." APM Reports, www.apmreports.org/story/2022/03/08/how-teenagers-get-to-utah-youth-treatment-programs. Accessed 21 Jan. 2026.

Miller Schreifels, Jessica. "Nearly half of Utah's wilderness programs for 'troubled teens' closed in the last year. Here's what's happening." The Salt Lake Tribune, 7 May 2024, www.sltrib.com/news/2024/05/07/nearly-half-utahs-wilderness/. Accessed 20 Jan. 2026.

Mohan, Ashima, Suchi Malhotra, Monisha Narayanan, Howard White, and Hannah Gaffney. PROTOCOL: The Effectiveness of Wilderness Therapy and Adventure Learning in Reducing Anti-Social and Offending Behaviour in Children and Young People at Risk of Offending.

Raymond, Josh. "TROUBLED: The Failed Promise of America's Behavioral Treatment Programs." TLS. Times Literary Supplement, no. 6172, 16 July 2021, p. 24. Gale in Context: High School, link.gale.com/apps/doc/A669344328/GPS?u=engl88921&sid=bookmark-GPS&xid=60b399b1. Accessed 2 Feb. 2026.

Robert, Amanda. "Troubling Treatment." ABA Journal, vol. 107, no. 4, 2021, pp. 46–53. JSTOR, https://www.jstor.org/stable/27304682. Accessed 20 Jan. 2026.

Rubino, Morgan. More Than Troubling: The Alarming Absence of 'Troubled Teen Industry' Regulation and Proposals for Reform. Journal of Legislation, vol. 50, no. 2, 2024, pp. 429–??, scholarship.law.nd.edu/jleg/vol50/iss2/6.

Siebert, Charles. "Sentenced to Nature." The New York Times Magazine, 17 Dec. 2000, p. 56. Gale in Context: High School, link.gale.com/apps/doc/A69296363/GPS?u=engl88921&sid=bookmark-GPS&xid=58dcb182. Accessed 22 Jan. 2026.

United States Government Accountability Office. Residential Treatment Programs: Concerns Regarding Abuse and Death in Certain Programs for Troubled Youth. U.S. Government Accountability Office, 2007.

Can Understanding Trauma-Informed Psychology Lead to Better Juvenile Justice Policies?
By Shivika Singh

ABSTRACT

Trauma is significant but often neglected in juvenile justice. Research shows 70-85% of justice-involved youth have experienced adverse childhood experiences. This paper examines whether understanding trauma-informed psychology leads to better juvenile justice policies. Through a systematic literature review, it evaluates trauma-informed care's (TIC) effectiveness in improving mental health outcomes, reducing institutional violence, and supporting rehabilitation. The analysis focuses on the Indian juvenile justice system, where overcrowding, mental health infrastructure gaps, and inconsistent rehabilitation practices present implementation barriers. The paper concludes that while TIC provides a more humane, ethical foundation than punitive approaches, evidence for reducing long-term recidivism remains inconsistent.

INTRODUCTION

The juvenile justice system is designed to rehabilitate young people and help them reintegrate into society. Unfortunately, many systems prioritize discipline and control over rehabilitation, failing to address the complex psychological and environmental factors underlying offending behaviour. Research demonstrates that 70-85% of justice-involved youth have experienced significant trauma such as abuse, neglect, poverty, and violence. This profoundly impacts neurological development, cognitive functioning, and emotional regulation.

Trauma and the juvenile justice system are intertwined in many ways. Research has repeatedly shown that exposure to trauma in the juvenile justice system is not only common, but the norm. Many youth interpret their own behavior not as misconduct but as a response to chronic stress and adversity. A failure to see the connection between the two, trauma and the justice system, can lead to a continuous cycle of punishment and adding to the trauma (Branson et al., 2017).

Adolescence represents a very critical aspect in understanding the relationship both systems have with each other. The teenage years involve rapid neurological developments, especially in areas such as impulse control, emotional regulation, decision-making, and risk assessment. When adolescents experience trauma during such a sensitive developmental stage, the consequences can extend far beyond the immediate psychological distress. This can disrupt the developmental processes that typically allow young children to navigate social situations, manage emotions, and make decisions.

Trauma-informed care (TIC) provides a different framework. Based on psychological research about trauma's impact, TIC asks "What has this child experienced?" rather than "What is wrong with this child?" This shift from viewing behavior through a deficit lens to understanding it through a trauma-informed lens carries significant implications for policy and practice. TIC operates on five core principles: safety, trustworthiness, choice and control,

collaboration, and cultural sensitivity, aiming to promote healing while preventing re-traumatization.

This paper explores whether understanding trauma-informed psychology can lead to better juvenile justice policies. It evaluates TIC's effectiveness through a systematic literature review, examining evidence for improved mental health outcomes, reduced institutional violence, and successful rehabilitation. The analysis examines both TIC's strengths and limitations, addresses counterarguments, and focuses particularly on implementation challenges in the Indian juvenile justice system. The central research question is: Can understanding trauma-informed psychology lead to better juvenile justice policies?

LITERATURE REVIEW

As previously mentioned, the rates of trauma among the youth in the juvenile system are staggering; between 70 - 85% of the incarcerated juveniles have experienced at least one significant, harmful childhood experience. This may include: physical or sexual abuse, neglect, exposure to domestic violence, substance abuse, or loss or incarceration of a parent. Many youth experience multiple forms of adversity simultaneously. Abram et al. (2013) reported an extremely high level of trauma exposure and post-traumatic stress disorder (PTSD) symptoms among detained adolescents, suggesting that trauma is not just the outer layer of the justice system, but central (Dierkhising et al., 2013).

This statistic shows that the youth population in juvenile facilities represents some of the most traumatised groups in society. However, these systems treat these behaviors with punishment, isolation, and further restrictions on their independence, which can worsen previous psychological stressors. A youth showing any signs of hypervigilance, irregular emotions, or aggressive outbursts usually receives discipline rather than the therapeutic support that might address the root cause (Branson et al., 2017). This leads to retraumatisation, the process in which institutions' response to trauma - driven behaviours recreates conditions of fear and harm, which may represent the original traumatic experiences.

Youth who have experienced community violence are more likely to internalise the violent responses, while youth who have experienced abuse develop disrupted attachment patterns, which complicate their ability to form meaningful relationships. Youth living in chronic poverty may see property crimes as economically justifiable due to their desperate situation (Lambert et al., 2010). This highlights the importance of understanding the specific trauma the individual has faced, as it provides the context for understanding their behaviour. It doesn’t justify their actions, but it is essential information to hold the most effective intervention.

In practice, trauma-informed care includes both psychological understanding and the fundamental shift in how institutions view the relationship between past experiences and current behaviour. This approach relies on the acceptance that trauma is not out of the ordinary but widespread. Trauma affects how people think, feel, and behave, and institutions can either worsen or improve trauma through their policies and practices. Rather than asking “what's wrong with this child?” TIC asks, “What has this child experienced?” (Gubi et al., 2019). The

traditional system only wants to know what defect, weakness, or criminality caused this behaviour, but TIC wants to know what stressor or harmful experience may explain the behaviour.

The significance of TIC in juvenile justice is rooted in the evidence demonstrating that trauma is virtually present among youth in the juvenile justice system. Without trauma awareness, systems default to drastic measures for trauma-driven behaviours, which are misunderstood as defiance. However, the recent review in Frontiers in Psychology for 2023 highlights the fact that over 85% of justice-involved youth report experiencing multiple types of adversity, thereby supporting the importance of trauma-sensitive policy (Day et al., 2023). Thus, trauma-informed care is not only important for therapeutic reasons but also because it changes the fundamental assumptions of juvenile justice policy.

TIC operates on five core principles that guide institutional practice. The principle of safety encompasses both physical security and psychological safety, creating environments where youth do not feel threatened or afraid. Trustworthiness ensures institutions operate with consistency and transparency, allowing youth to understand rules, consequences, and the reasoning behind interventions. For trauma survivors who often experience powerlessness, choice and control allow meaningful decision-making within institutional structures, helping restore a sense of agency and autonomy. Collaboration emphasizes partnership between staff and youth, and between the justice system and families and communities. Finally, cultural sensitivity recognizes that trauma manifests differently across cultures and that healing practices must be culturally congruent (Ashworth et al., 2023).

These principles are implemented through concrete practices beginning with systematic trauma screening of all youth upon entry using assessment tools to identify trauma exposure and symptoms. Youth then receive access to evidence-based psychological treatments designed to heal emotional wounds, particularly trauma-focused cognitive-behavioral therapy (TF-CBT), which helps youth process traumatic memories and develop new coping strategies. Staff training and development enable recognition of trauma symptoms and trauma-informed responses, including de-escalation techniques and understanding of nervous system regulation. This training also supports changes in practices known to worsen trauma, such as overuse of solitary confinement, harsh discipline, and physical restraint. Finally, institutions implement mental health services throughout facilities rather than treating mental health as an auxiliary service (Ho et al., 2024). Together, these components allow systems to shift from punishment-focused models into frameworks centered on rehabilitation and recovery.

Trauma-informed interventions have shown consistent positive outcomes in mental health, although the results are sometimes complex. A systematic review in PLOS ONE examined multiple trauma-informed programs and found that there have been improvements in depression, anxiety, and PTSD symptoms, especially those that used cognitive behavioural therapy (CBT) in their design. Programs that used cognitive behavioural therapy (CBT) showed significant progress (Han et al., 2021). Additionally, a separate review in the Journal of Child and Adolescent Trauma found strong evidence for the reduction of PTSD symptoms among

justice-involved youth who received trauma-focused cognitive behavioural therapy. Even though outcomes were not consistently documented, the results are well established (Malvaso et al., 2024).

These results show that a young person who may have experienced abuse and carries the emotional burden from it can greatly reduce these symptoms through trauma therapy. PTSD and related trauma disorders can be associated with other aspects of a victim's life, such as school failure, interpersonal conflict, substance abuse, and any other involvement with the justice system. By reducing the symptoms, there may be benefits beyond the immediate relief from the suffering.

This goes further than just treating the individual's symptoms; the institutional environment can change the overall culture, leading to tangible improvements in safety, trust, and collaboration. An empirical study on TIC in juvenile detention facilities found that combining staff training with youth coping skills programs significantly reduced violent incidents in a facility. Violence in correctional facilities creates secondary trauma for both the staff and youth, continuing the cycle of aggression and undermining the efforts of rehabilitation. These findings are important and demonstrate that TIC can shift institutional methods in ways that improve safety and reduce harm (Baetz et al., 2019).

A significant gap is created between the improvements in mental health and the improvements in delinquent behavior. Multiple studies show a reduction in PTSD, anxiety, and depression among justice-involved youth receiving trauma-informed therapy; however, the evidence for a reduction in criminal behaviour is considerably weaker. A review on PTSD treatment among adolescents in a juvenile setting found that while trauma symptoms decreased, evidence for a direct reduction in delinquent behaviour was “limited.” The question about this gap still lingers, and there are several explanations that may be plausible, and many of them work simultaneously (Lehrer, 2021).

The first explanation is that behaviour is complex. Trauma contributes to this, of course, but so do many other factors, such as poverty, peer influence, neighborhood crime rates, familial dysfunctions, school or work failure, and other situational factors. For example, consider a young person from an economically challenged neighbourhood who experienced abuse at home. Trauma-focused therapy might help them process the abuse and help reduce PTSD symptoms, but once they return to the same neighbourhood, the problems may arise again. Without employment opportunities, the same peer group engaging in criminal activities, and family dysfunction continuing, the conditions that caused the delinquency remain unchanged. Therapy addresses one factor in a very complex situation.

Second, the link between psychological well-being and behavioural change is unpredictable. A young person may feel less anxious and regulate emotions better, and still make the wrong choices. Psychological health and behavioural choices are connected, but they are also distinct. Feeling better psychologically doesn't mean that one stops engaging in harmful behaviour due to external pressure, economic desperation, or other circumstantial factors.

Thirdly, behavioural change requires reinforcement multiple times, in different contexts. A youth might develop healthy coping strategies in an institutional facility, yet the skills may not be transferred into the community context. This may be the case as they are surrounded by triggers, pressures, and conflicting norms. Without sustained support, environmental change, or economic opportunities after their release, the individual may fail to translate the short therapeutic gains into sustained behavioural change.

Finally, the timeframe of measurement matters greatly. Many studies collect data over months, sometimes even over years. Yet, behavioural patterns that are established through a lifetime of trauma can not be reversed in such short timeframes. Genuine rehabilitation is a long-term process that takes many years, which may extend well beyond institutional involvement.

There are many other explanations that help to understand why people still choose to take part in delinquent behaviour after rehabilitation to better their mental health; however, these are the most relevant to this paper.

A gender sensitive and intersectional approach is an important specialisation for this method. Research on girls in the juvenile justice system indicates a high correlation between childhood abuse, trauma, and substance use. These pathways into the justice system differ considerably from those of boys, highlighting the patterns of victimisation and vulnerability for the different genders. Additional research showed an improvement in psychosocial and behavioural outcomes for female youth in the justice system while emphasising that TIC is essential in understanding different trajectories of trauma based on structural inequalities and gender (Smith & Saldana, 2013). If laws or rules are written assuming everyone has the same experiences ("gender-neutral"), they often ignore the distinct biological, social, and economic challenges different genders face. As society is not perfectly equal, applying identical rules to unequal situations makes the original disadvantages worse. This demonstrates how effective TIC implementation depends not only on trauma but also on gender, race, class, and other aspects of the individual's identity.

METHODOLOGY

Research Design and Approach

This paper uses a systematic literature review and critical analysis to examine trauma-informed care (TIC) in juvenile justice systems, with a focus on implementation in India. Rather than conducting original research, this study uses peer-reviewed literature, policy documents, and institutional data to evaluate TIC's effectiveness, limitations, and practical feasibility.

The analysis went through three phases: (1) synthesis of research on trauma prevalence and TIC evidence, (2) critical examination of limitations and the gap between mental health improvements and recidivism reduction, and (3) contextual analysis of implementation barriers specific to Indian juvenile justice.

Search Strategy and Source Selection

Sources were identified through systematic searches of PubMed, Google Scholar, JSTOR, and PsycINFO using keywords including: "trauma-informed care," "juvenile justice," "adolescent trauma," "PTSD juvenile justice," and "justice-involved youth." Searches were limited to sources published 2010-2024 to understand TIC's development while ensuring recency.

Searches specifically targeted policy documents including the Indian Juvenile Justice Act, 2015, and institutional reports from NIMHANS and the National Crime Records Bureau (NCRB). These were included because understanding TIC requires understanding both theories and real-world institutional constraints.

Included	● Peer-reviewed empirical studies, systematic reviews, and meta-analyses on trauma or TIC in juvenile justice ● Policy documents and legislative frameworks relevant to juvenile justice ● Institutional data from NIMHANS, NCRB, and similar organizations ● Studies examining mental health outcomes, behavioral outcomes, or TIC implementation effectiveness ● English-language sources published 2010-2024
Excluded	● Studies focused on adult systems without adolescent analysis ● Opinion pieces without empirical grounding ● TIC research unrelated to juvenile justice ● Non-English language sources

Sources were evaluated based on research design (randomized controlled trials weighted more heavily), sample size, outcome measurement clarity, and duration of follow-up. Particular attention was given to limitations such as geographic concentration in Western contexts, reliance on short-term outcome measurement, and variability in TIC implementation across studies.

The paper is organized thematically rather than chronologically. Initial sections establish the evidence base for TIC's importance. Following sections present TIC effectiveness organized by outcome type (mental health versus behavioral outcomes), highlighting the critical gap between mental health improvement and recidivism reduction. The limitations section balances TIC's documented strengths and significant implementation constraints. The final section applies this evidence to India's specific context, examining how systemic barriers affect practicality.

The limitations and counterarguments section presents both evidence of TIC effectiveness and constraints, reflecting the paper's central argument that while TIC is essential for improving psychological well-being, its capacity to reduce recidivism depends on contextual factors and sustained institutional investment.

While the search was systematic, interpretive judgment was involved in source selection, meaning some relevant sources may have been missed. Distinguishing between limitations inherent to TIC and those resulting from inadequate implementation is difficult. Policy documents (like the Indian Juvenile Justice Act, 2015) express rehabilitative principles, but actual practice varies dramatically.

EVALUATION

Trauma-informed care

Trauma-informed care (TIC) is widely supported by psychological literature, yet the strength and applicability of the evidence require careful evaluation. A significant proportion of the studies on TIC are conducted in Western contexts, particularly in the United States and parts of Europe. This raises questions about generalizability, especially when applying findings to non-Western juvenile justice systems such as India, where institutional capacity, cultural interpretations of behaviour, and resource availability differ significantly. The psychological principles of trauma are well-established, but the effectiveness of TIC as a policy framework may vary across different socio-economic and institutional contexts (National Library of Medicine, 2024).

Aside from the geographic limitations, many studies use modest sample sizes, non-experimental designs, and limited outcome measures. Some also rely on self-report data from the youth in the institutions; however, the individuals may have a motivation to report improvement to the staff members. Longitudinal studies that examine the outcome years after the youth leave the justice system are relatively rare (Thapa Bajgain et al., 2023). These limitations do not invalidate the findings, but it is important to remain cautious when interpreting them and not to be overconfident when applying them to new contexts. When considering TIC in resource-strained institutions, policymakers must acknowledge these gaps.

Many of the existing studies on TIC demonstrate short-term improvements in mental health outcomes, such as reduced PTSD, anxiety, and depressive symptoms within months of the intervention. However, there is considerably less consistent longitudinal data to show whether or not these improvements in behavior can be sustained in the long run (Thapa Bajgain et al., 2023). This is a critical limitation in this literature, as juvenile justice systems are evaluated on psychological well-being as well as the individual's ability to reintegrate into society and reduce reoffending rates in the long term. Behavioural patterns established over a lifetime cannot be reversed in such short timeframes. Without extended follow-up data, psychologists cannot confidently state that TIC produces lasting change in the individual's behaviour.

Another limitation is the variability in quality of study design and execution. There is no single standardised TIC intervention; rather, it is a broad framework that varies widely across institutions. This makes it difficult to compare the outcomes, as the results may be strongly influenced by differences in staff training, institutional resources and programme design. In some instances, improvements in outcomes may reflect general institutional reforms rather than TIC

per se (Goldstein et al., 2024). For example, look at two detention facilities that both use trauma-informed care (TIC). One facility has trained clinical staff, conducts thorough trauma screenings, provides evidence-based therapy, requires all staff to complete trauma-informed training, and has changed some disciplinary policies. The other facility has one part-time counselor, conducts informal assessments, offers supportive counseling instead of evidence-based therapy, and the staff has received minimal training. Both claim to be trauma-informed, but one shows significantly better results than the other. This difference is not because TIC is ineffective; it stems from how each facility implements it. This variation makes it hard to know what is actually being measured in the outcomes and whether positive results come from TIC or other factors.

There is an ongoing debate on whether trauma-informed approaches may unintentionally reduce accountability in the juvenile justice systems. Critics argue that the overemphasis on trauma as an explanation for the individual's behaviour, framing the offense through a therapeutic lens, potentially weakens their personal responsibility. The youth must understand the harm they've caused, engage in restitution when possible, and develop skills for different choices. This form of accountability arguably demands more genuine engagement than passive punishment (Goldstein et al., 2024). However, the concern about taking accountability is valid and requires careful implementation. Systems must ensure that understanding trauma does not become an excuse for avoiding the consequences.

A practical limitation is the cost and the amount of resources required in implementing TIC at a system-wide level. Effective implementation requires trained mental health professionals, consistent staff training, access to evidence-based therapeutic services, and sustained funding. In certain parts of the world, particularly low- to middle-income countries, these resources are very limited. Disciplinary systems often persist not only due to the "traditional" ideology but also due to structural constraints (Goldstein et al., 2024). This creates an unfortunate situation. The youth most likely to have experienced trauma (those from economically disadvantaged backgrounds) are least likely to get access to proper trauma-informed services. A privileged and wealthy adolescent may receive a more comprehensive trauma assessment and receive proper evidence-based therapy. In contrast, a poverty-stricken adolescent in a developing nation experiences custody in an under-resourced facility with minimal mental health services. This discrepancy is not accidental; it is based on the lack of proper implementation.

Another concern is the worry that the behavior may be justified as psychologists view it through a trauma-driven lens. This risk is real but can be addressed with proper and clear communication. Understanding the cause is not the same as justifying the action (Bland, n.d., Chapter 2). A young person who steals food because of hunger and poor impulse control. Even though the youth acted out under difficult circumstances, it does not erase the fact that the theft caused harm. Understanding these circumstances should help psychologists implement the appropriate intervention to reduce reoffending and help in rehabilitation.

Indian Context

The importance of trauma-informed care becomes particularly evident when examining the Indian juvenile justice system, where there are significant systemic challenges. The Juvenile Justice (Care and Protection of Children) Act, 2015, has been designed to incorporate rehabilitation-oriented principles and child-friendly procedures into the justice system. The Act established specialised institutions, including juvenile justice boards, child welfare committees, observation homes (for the youth waiting adjudication), and special homes (for adjudicated youth) (*Juvenile Justice Act (JJA 2018) - Important Provisions of JJA. [UPSC Polity Notes]*, n.d.). These structures were designed to promote rehabilitation and reintegration rather than punishment of the youth.

However, the Act contains penalties such as children aged 16 to 18 years being tried as adults in the case of serious crimes. This condition creates tension within a system that is theoretically committed to rehabilitation. While they prioritise rehabilitation, in reality, the practice is very different across different states. The effectiveness of institutions and structures differs dramatically between states, as some have made genuine efforts to improve facilities and rehabilitation, and some have allowed facilities to deteriorate into institutions that resemble adult prisons for youth. This variation reflects several contributing factors: state budgets and fiscal capacity to fund juvenile justice, political commitment to rehabilitation at the state government level, availability of trained personnel within the state, and the presence and strength of civil society organisations supporting their reform (Thilagaraj, 2012).

Commentary on juvenile institutions in India highlights significant infrastructure and operational challenges that prevent trauma-informed implementation (Editor, 2021).

A critical challenge specific to India is that the criminal justice system has not prioritised criminology research, has struggled to effectively implement criminal justice policies, and has not adequately incorporated the contributions of psychologists in the criminal justice field (Thilagaraj, 2012). This resistance to psychological and rehabilitative perspectives creates barriers for institutions when integrating trauma-informed approaches, which require a fundamental reorientation toward understanding an individual's behaviour.

As noted in the Evaluation section, NCRB data reveals that the majority of juveniles come from socio-economically disadvantaged backgrounds and are involved primarily in property-related crimes rather than violent offences. Property crimes (theft, burglary), auto theft, and economically motivated offenses. In contrast, crimes including rioting, assault, and sexual offenses comprise a smaller portion of the larger population. This offence pattern has significant implications for policy design. If the majority of cases involve economically motivated property crime, then purely punitive responses may not be effective. (Chenthil Nivedha, 2026) A young person who steals because of desperation will not be deterred by incarceration, and when they return to the same impoverished conditions, the motivations remain unchanged. Rehabilitation and reintegration support, combined with new economic opportunities, would be far more effective for them than just punishment alone.

The youth population entering the Indian juvenile justice system is characterised by multiple simultaneous forms of adversity in their life. Poverty, community violence exposure, family instability, limited access to education, and trauma exposure are widespread rather than an exception. Research on juvenile delinquency in India shows that structural inequality and negative childhood experiences play a significant role in youth offending. (Barman & Singhal, 2025) From a trauma perspective, the social and environmental conditions of these youth emphasise the importance of considering offending behaviors as responses to their situation rather than individual deviant choices.

A major barrier in implementing TIC in India is the severe lack of mental health infrastructure and trained personnel. Data from NMHAN, India's leading mental health institute, the National Mental Health Survey of India (NMHS), reveals the treatment gap in child and adolescent mental health services across the country. The ratio of mental health workers to population is well under the World Health Organisation's recommendation. In many states, there is only one psychiatrist per 100,000 people, and psychologists who are trained in evidence-based interventions are even rarer (Murthy, 2017).

Within juvenile justice facilities, mental health services are often minimal or missing. Most observation homes and special homes do not have psychiatrists or psychologists on staff. When mental health services are available, they are usually provided by counselors or social workers who have limited training (Goldstein et al., 2024). Because of the lack of professional mental health services, many young people with serious mental health issues, such as PTSD and depression, go untreated. Those who could benefit from effective treatments like trauma-focused cognitive behavioral therapy do not have access to these options.

This gap makes it difficult to implement trauma-informed care widely. TIC needs systematic trauma screening, which requires trained personnel to carry out assessments. It also needs therapeutic services, which require trained therapists, staff training in trauma recognition from qualified trainers, and clinical oversight involving mental health professionals. While the law may set ambitious goals for rehabilitating young offenders, these services cannot be realistically provided.

Indian juvenile facilities often lack essential components. Trauma screening is rare and usually informal. Evidence-based therapy is nearly unavailable. Staff training in trauma-informed methods is not common and often limited to a few employees instead of being widespread. Facilities are not built to support trauma recovery; they focus more on custody and control. Restrictive practices are still common. Family engagement is minimal or missing, and discharge planning is frequently absent. This gap reflects the resource limitations in the Indian juvenile justice system rather than a failure of the system itself.

Beyond the absence of these therapeutic services, basic conditions in many Indian juvenile institutions create a significant risk of retraumatisation. Commentary on Indian juvenile facilities highlights overcrowding, inadequate staffing ratios, bullying among the residents, sexual assault, inadequate nutrition and hygiene, and minimal educational programs (Editor, 2021).

Overcrowding is particularly problematic for trauma-informed practice. When facilities house more youth than their intended capacity, basic safety cannot be maintained. Bullying also occurs as the youth establishes hierarchies for protection. The staff is stretched thin in many institutions and therefore cannot provide adequate supervision or support. This can cause the facility to become a secondary site of trauma rather than healing. In such conditions, a youth who experiences abuse at home may encounter abuse within the facility. Rather than beginning to heal, the institutional experiences deepen existing trauma and dysfunction.

States in India with higher per-capita GDP, stronger civil society sectors, and political leadership committed to the juvenile justice system have better functioning systems with more rehabilitative programming. States facing budget constraints and that are less prioritised by the government struggle to maintain facilities or implement reforms. Different strategies would be appropriate for different states. More developed states with existing mental health infrastructure and facilities may be able to pursue more comprehensive TIC implementation. Less developed states would need to focus on foundational improvements before attempting trauma-informed therapeutic interventions.

Barrier	Why does it prevent implementation
Funding constraints	Effective TIC requires sustained investments in staff training, mental health services, facility improvement, and program development. Indian state governments face competing demands on limited budgets. Juvenile justice often does not rank high in political priorities compared to law enforcement, infrastructure, or welfare programs. Allocating sufficient funds for comprehensive trauma-informed reform must compete with other pressing needs and frequently does not seem important when negotiating budgets.
Staffing and training capacity	India has a severely limited capacity to train mental health professionals in evidence-based interventions, let alone specialised training in trauma-informed juvenile justice. Few universities offer advanced training in child and adolescent mental health, but even fewer offer specialised training in juvenile justice. Building the human capacity to implement TIC across hundreds of facilities across multiple states would require substantial upfront investments in education and training infrastructure, which does not currently exist.
Institutional culture change	Many juvenile justice facilities operate within a culture-oriented system. Staff are typically trained in security protocols and custody procedures, not rehabilitation or therapeutic procedures. Changing institutional approaches is slow, difficult, and requires sustained effort. It demands consistent staff training and development, ongoing reinforcement of new approaches, and facilities must invest time and money to see a change
Coordination across agencies	India’s juvenile justice system involves multiple agencies that must coordinate for effectiveness, like police who apprehend the youth, courts which adjudicate cases, facilities with staff who house and care for youth, education and vocational training providers, mental health services, the youth’s family, and community.

Some Indian states have attempted targeted TIC implementation with mixed results. For instance, Maharashtra has partnered with NGOs to introduce trauma screening and counseling services in select observation homes, reporting modest improvements in institutional violence and youth engagement in educational programming. These gains remain modest due to staffing limitations and inconsistent funding. In contrast, several northern states have adopted TIC terminology in policy documents without substantive institutional change, exemplifying how policy intent does not guarantee practice transformation. These disparate outcomes underscore why implementation fidelity and resource commitment matter more than policy adoption alone.

Given these barriers, full-scale trauma-informed transformation across Indian juvenile justice is not immediately realistic. However, even partial implementation could make meaningful improvements. NGO partnerships can provide mental health services where state capacity is limited. Prioritising facilities with better existing capacity and political support can create many more success stories that can create more reform. The path forward requires strategic adaptation and incremental development.

The inconsistency in recidivism evidence across studies reflects several methodological differences. Studies with longer follow-up periods (3+ years post-release) show more modest effects than those measuring only institutional behavior change. Research on TIC programs serving youth with more severe trauma histories sometimes shows greater behavioral improvements than programs serving mixed-trauma populations. Additionally, programs with higher implementation fidelity consistently outperform facilities claiming TIC without substantive changes. This variation suggests that recidivism reduction is possible under specific conditions (strong implementation, adequate resources, long-term support), but inconsistent across contexts where these conditions are not met.

Beyond full trauma-informed transformation, emerging alternatives offer promise in resource-limited Indian contexts. Several NGOs have developed hybrid models combining trauma-informed principles with restorative justice practices, engaging community members alongside institutional staff. The Banyan, an NGO working with homeless and traumatized youth in Chennai, integrates peer support with basic counseling and life skills training at significantly lower per-youth cost than Western models. Additionally, some states are piloting brief trauma-screening and referral protocols rather than attempting comprehensive in-facility therapy, directing youth toward community mental health services post-release.

CONCLUSION

This paper shows that understanding trauma-informed psychology is essential to reform the juvenile justice system. By examining the cross between trauma, adolescent development, and the current judicial practices, it becomes clear that the question "**Can Understanding Trauma-Informed Psychology Lead to Better Juvenile Justice Policies?**" may not have a clear answer. The analysis demonstrates that trauma-informed care approaches offer a fundamentally more ethically sound and evidence-supported model than purely punitive systems,

yet this advancement does not resolve the broader challenges of juvenile justice reform. Systems, however, this advancement does not address the wider challenges of juvenile justice reform.

The evidence supports several conclusions about TIC's effectiveness. First, trauma-informed approaches consistently lead to significant improvements in psychological wellbeing among youth involved in the justice system. Multiple systematic reviews and empirical studies show notable reductions in PTSD, depression, anxiety, and related trauma symptoms when youth receive trauma-focused interventions in trauma-informed settings. These mental health improvements represent real human benefits and meaningful progress. Second, implementing TIC at the institutional level, which includes staff training and youth coping skills programs, clearly reduces violence within facilities. This increase in institutional safety is important for both youth and staff well-being. Third, from an ethical viewpoint, trauma-informed approaches represent a better model compared to purely punitive systems. Instead of seeing complex behavior just as defiance that deserves punishment, TIC acknowledges trauma's role while holding individuals accountable through restorative methods instead of retributive ones. This shift from asking “what is wrong with this child?” to “what has this child experienced?” shows real progress in how justice systems perceive and respond to youth.

However, the evidence reveals a critical limitation: while TIC consistently improves psychological outcomes and reduces institutional violence, its effect on long-term recidivism is inconsistent. As discussed in the literature review, this gap exists because delinquency is multifactorial, as it is driven by poverty, peer influence, lack of opportunity, and situational factors beyond trauma alone. While TIC is critical to juvenile justice reform, it cannot be a standalone solution to recidivism and reoffending.

The Indian context highlights both the urgency and the challenges of applying trauma-informed approaches. India's Juvenile Justice Act of 2015 established a rehabilitative framework; however, many facilities still operate mainly on punitive principles. The youth entering these systems are highly vulnerable, often coming from backgrounds marked by poverty, community violence, and trauma exposure, with most involved in property crimes driven by economic need rather than violent offenses. This reality calls for trauma-informed intervention. The NCRB data shows that a majority of cases involve property crimes, suggesting rehabilitation and opportunity may be more effective for this group than punishment.

Nevertheless, significant barriers to true trauma-informed care in India exist. NIMHANS data indicates a major treatment gap in mental health services for children and adolescents across the nation (Murthy, 2017). Most juvenile facilities entirely lack mental health professionals. Overcrowding, bullying, and inadequate resources define many institutions, leading to conditions of secondary trauma instead of healing. Funding shortages, lack of staff, institutional cultures that focus on control, and coordination issues among agencies all work together to hinder trauma-informed implementation. There is variation among states; while some Indian states have made progress toward rehabilitation, others have essentially failed to follow the rehabilitative intent of national policy.

Applying trauma-informed care on a large scale in India would require ongoing investment in mental health infrastructure, extensive staff training, facility upgrades, and changes in institutional culture. This would demand resources that are currently lacking and political will that has not yet emerged. These obstacles are significant and cannot just be overcome with policy changes.

Still, the argument for pursuing trauma-informed reform in India is strong. Evidence shows TIC is effective—it enhances psychological wellbeing, decreases violence in institutions, and provides a more ethical alternative to punitive methods. Even partial implementation, such as systematic trauma screening, staff training in recognizing trauma, family involvement, and reducing harmful practices, could greatly improve conditions and outcomes. Thoughtful adaptation in place of complete adoption of Western models, partnerships with NGOs to support state capacity, and pilot programs at the state level could create evidence and momentum for broader reform over time.

Ultimately, this paper concludes that trauma-informed psychology is essential to juvenile justice reform, though its scope and limitations must be clearly understood. TIC is not a complete solution to recidivism or delinquency. It is, however, a necessary foundation for building systems that are more humane, more developmentally appropriate, and more ethically sound. In India specifically, embracing trauma-informed approaches represents a crucial step toward bridging the gap between rehabilitative policy and punitive practice. The path forward requires honest acknowledgment of both TIC's genuine strengths and its real limitations, commitment to contextually appropriate implementation, and recognition that reducing reoffending requires intervention not only on trauma but on poverty, opportunity, family support, and peer influences simultaneously. Without understanding trauma, juvenile justice systems will continue to perpetuate cycles of harm. With trauma-informed approaches as a foundation, combined with broader structural reforms addressing root causes of delinquency, systems have genuine potential to become sites of healing and reintegration rather than sites of further trauma.

Works Cited

Ashworth, H., Lewis-O'Connor, A., Grossman, S., Brown, T., Elisseou, S., & Stoklosa, H. (2023). Trauma-informed care (TIC) best practices for improving patient care in the emergency department. International Journal of Emergency Medicine, 16(1), 38. https://doi.org/10.1186/s12245-023-00509-w

Baetz, C. L., Surko, M., Moaveni, M., McNair, F., Bart, A., Workman, S., Tedeschi, F., Havens, J., Guo, F., Quinlan, C., & Horwitz, S. M. (2019). Impact of a Trauma-Informed Intervention for Youth and Staff on Rates of Violence in Juvenile Detention Settings. Journal of Interpersonal Violence, 36(17-18), 088626051985716. https://doi.org/10.1177/0886260519857163

Branson, C. E., Baetz, C. L., Horwitz, S. M., & Hoagwood, K. E. (2017). Trauma-informed juvenile justice systems: A systematic review of definitions and core components. Psychological Trauma: Theory, Research, Practice, and Policy, 9(6), 635–646. https://doi.org/10.1037/tra0000255

Day, A., Malvaso, C., Boyd, C. M., Hawkins, K., & Pilkington, R. (2023). The effectiveness of trauma-informed youth justice: a discussion and review. Frontiers in Psychology, 14. https://doi.org/10.3389/fpsyg.2023.1157695

Dierkhising, C. B., Ko, S. J., Woods-Jaeger, B., Briggs, E. C., Lee, R., & Pynoos, R. S. (2013). Trauma histories among justice-involved youth: Findings from the National Child Traumatic Stress Network. European Journal of Psychotraumatology, 4(1). https://doi.org/10.3402/ejpt.v4i0.20274

Gubi, A. A., Strait, J., Wycoff, K., Vega, V., Brauser, B., & Osman, Y. (2019). Trauma-Informed Knowledge and Practices in School Psychology: A Pilot Study and Review. Journal of Applied School Psychology, 35(2), 176–199. https://doi.org/10.1080/15377903.2018.1549174

Han, H.-R., Miller, H. N., Nkimbeng, M., Budhathoki, C., Mikhael, T., Rivers, E., Gray, J., Trimble, K., Chow, S., & Wilson, P. (2021). Trauma informed interventions: A systematic review. PloS One, 16(6), 1–28. https://doi.org/10.1371/journal.pone.0252747

Lambert, S. F., Nylund-Gibson, K., Copeland-Linder, N., & Ialongo, N. S. (2010). Patterns of Community Violence Exposure During Adolescence. American Journal of Community Psychology, 46(3-4), 289–302. https://doi.org/10.1007/s10464-010-9344-7

Lehrer, D. (2021). Trauma-Informed Care: The Importance of Understanding the Incarcerated Women. Journal of Correctional Health Care, 27(2), 121–126. https://doi.org/10.1089/jchc.20.07.0060

Malvaso, C. G., Day, A., & Boyd, C. M. (2024). The Outcomes of Trauma-Informed Practice in Youth Justice: An Umbrella Review. Journal of Child & Adolescent Trauma, 17(3), 939–955. https://doi.org/10.1007/s40653-024-00634-5

Smith, D. K., & Saldana, L. (2013). Trauma, Delinquency, and Substance Use: Co-Occurring Problems for Adolescent Girls in the Juvenile Justice System. Journal of Child &

Adolescent Substance Abuse, 22(5), 450–465. https://doi.org/10.1080/1067828x.2013.788895

Trauma-Informed Care (TIC) Part 1: Definition and Screening | Palliative Care Network of Wisconsin. (2024). Palliative Care Network of Wisconsin. https://www.mypcnow.org/fast-fact/trauma-informed-care-tic-part-1-definition-and-screening/

Goldstein, E., Chokshi, B., Melendez-Torres, G., Rios, A., Jelley, M., & Lewis-O'Connor, A. (2024). Effectiveness of trauma-informed care implementation in health care settings: Systematic review of reviews and realist synthesis. The Permanente Journal, 28(1), 135–150. https://doi.org/10.7812/tpp/23.127

National Library of Medicine. (2024). Trauma-Informed Care: A Sociocultural Perspective. Nih.gov; Substance Abuse and Mental Health Services Administration (US). https://www.ncbi.nlm.nih.gov/books/NBK207195/

Thapa Bajgain, K., Amarbayan, M., Wittevrongel, K., McCabe, E., Naqvi, S. F., Tang, K., Aghajafari, F., Zwicker, J. D., & Santana, M. (2023). Patient-reported outcome measures used to improve youth mental health services: a systematic review. Journal of Patient-Reported Outcomes, 7(1). https://doi.org/10.1186/s41687-023-00556-0

Thilagaraj, R. (2012). Criminal Justice System in India. Handbook of Asian Criminology, 199–211. https://doi.org/10.1007/978-1-4614-5218-8_13

Chenthil Nivedha. (2026, May 7). NCRB Reports Rise in Juvenile Crime Cases. Gktoday.in. https://www.gktoday.in/ncrb-reports-rise-in-juvenile-crime-cases/

Barman, M., & Singhal, A. (2025). Juvenile Justice in India: Trends, Challenges, and the Way Forward. Cdpp.co.in. https://www.cdpp.co.in/articles/juvenile-justice-in-india-trends-challenges-and-the-way-forward

Bland, K. (n.d.). Understanding trauma through a behavior analytic lens: A understanding trauma through a behavior analytic lens: A comparative case study comparative case study. Retrieved July 22, 2026, from https://digscholarship.unco.edu/cgi/viewcontent.cgi?article=1918&context=dissertations

Murthy R. S. (2017). National Mental Health Survey of India 2015-2016. Indian journal of psychiatry, 59(1), 21–26. https://doi.org/10.4103/psychiatry.IndianJPsychiatry_102_17

Why the Alarm Needs a Delay for High School Students By Leela Bhat-Roach

Leela Bhat-Roach is a rising sophomore at the Loomis Chaffee school in Connecticut. She spent her freshmen year at a public high school in North Carolina, where she currently lives. She is active in academics and enjoys summer programs where she found her love for boarding school. She's involved in community engagement, athletics and known for lifting other people up through her positivity.

I put down the computer at midnight. At last, all my homework is finished. I crawl into bed, exhausted and doze off immediately. Before I know it, I'm startled by a loud buzzing on my nightstand, "Beep! Beep!." I turn over and hit snooze on my alarm clock. "I'll get up in 5 more minutes." The next 5 minutes pass..."Beep! Beep!" I hit the snooze button with dread and glance over at the time, it's 5:05. I push the covers off of my legs, exposed to the cold. It's still dark outside, the same kind of dark as when I went to sleep. It feels like no time has passed at all. This isn't an occasional night, but a daily routine for many teens, including myself. To me, it's clear that early high school start times do more harm than good.

While I used to think I just needed to go to bed earlier, I later realized it wasn't simply a matter of getting into bed sooner. Adolescents experience a shift in their sleep cycle. During teenage years the biological sleep-wake cycle changes, causing a natural shift in circadian rhythm that causes a delayed release of melatonin. Due to the fact that high school students have to wake up early, school schedules conflict with their drive for later sleep and wake times. As a result, most teens are chronically sleep deprived. This can hurt their academic performance, affect their mood and increase the likelihood of making risky decisions. The consequences are impossible to ignore.

The expectation of high school students is that they show up every day ready to work, however that's not realistic with a 7am start time. I see the effects of sleep deprivation the minute I enter the classroom. My classmates lay their heads on the desks, their notebooks stay closed and they're multiple assignments behind. On average teens need 8-10 hours of sleep per night yet, the American Physiological Association recorded an increase in high school students who don't get enough sleep, with the percentage rising from 69% in 2009 to 77% in 2021. Not only are teens chronically tired but these effects show through academic performance as well. When students are sleep deprived they struggle to concentrate, retain information and think critically. The Center for Applied Research and Educational Improvement conducted a three year study from 8 public high schools showing that when the high schools switched their start time to 8:35am they saw significant improvements. Grades in core subjects, state testing scores and attendance improved while tardiness decreased. Rather than expecting teens to show up at 7am and perform at their best, pushing the school start time back can allow teens to get rest while giving them a better opportunity to succeed.

When most people think of sleep deprivation in teens, academics are usually the first thing that comes to mind, and while that's true, insufficient sleep doesn't just affect academics; it affects mood as well. Many parents blame a bad mood on "teenage hormones" but they rarely take it into account that maybe it's because of exhaustion. In the Child Mind Institute Ryan C. Meldrum and an assistant professor discuss a link they found between a short sleep duration and how it's more likely to cause aggression, impulsivity and being short tempered. The emotional center of the brain matures faster than the logic part, which means teens react much stronger emotionally than adults. When you add the changing hormones with a lack of sleep, it creates a cycle of stress that can negatively affect their wellbeing, relationships and mental health.

A 2025 national sleep foundation survey found that 16% of teens report getting behind the wheel while drowsy. Some may even argue that driving sleep deprived is just as dangerous as driving drunk. The lack of sleep slows reaction time, harms judgment and weakens coordination. The study by the Child Mind Institute found that 55% of all "fall asleep" car crashes were caused by drivers under the age of 25. The Children's Hospital Of Philadelphia mentions that researchers have shown that when teens get less sleep, their risky driving behaviors increase, including sending texts while driving or not wearing a seatbelt. It's three times more likely for teens who had slept for less than six hours to make risky decisions than teens who got at least eight hours of sleep. The Center for Applied Research and Educational Improvement also explains that the number of car crashes for teen drivers from 16 to 18 was significantly reduced by 70% when a school shifted start times from 7:35 AM to 8:55 AM. Regardless, many high schools, including mine, prioritize starting early over the well-being of their kids.

Although, many people argue that early start times allow for earlier end times, which leaves more time for afternoon activities like sports, clubs and homework. This is rarely the case for most teens. By the time I get home my backpack feels twice as heavy. I reluctantly spread my homework across my desk and within a few minutes my eyes grew heavy and I zone out. When I snap back to reality I find myself reading the notes over and over. I'm reading words but not comprehending them. But honestly, I'm too tired to care. The early start times make me too exhausted to make good use of my afternoons. If this continues, students will miss their opportunity to meet their full potential. Schools should prioritize success, not make it harder to achieve. If we truly want students to succeed, schools should delay their start times.

The Library of Alexandria: Burned Books, Broken Culture By Cyrus Mohebi

"A room without books is like a body without a soul"
-Attributed to Cicero, Letters to Atticus iv.8

Napoleon, Ptolemy XIII, and Claudius were all rulers who controlled and conquered land. What do these historical figures all have in common? In the wake of their campaigns, many of the people affected by these rulers were forgotten by those who recorded history. As a result, individuals and cultures outside the narrative of these victors often disappear from the historical record; as we say now, "history is written by the victors." But surely the culture of these conquered people was preserved? Napoleon took enormous quantities of Italian art back to Paris with him. Claudius brought bounties of metals, slaves, and oysters from Britannia, and we still have the material and knowledge surrounding these conquests in the modern era.[1] But when late Egyptian rulers, like Ptolemy I Soter, assimilated foreign lands, he stored the knowledge and traditions of the conquered people in the new and now famous Library of Alexandria, along with artifacts in a museum adjacent to the library, the Mouseion, which in Latin (Museum) translates to the "House of the Muse", a reference to Clio, the muse of history, among the others.[2] When the Library of Alexandria was burned for the first time around 48 BCE, we did not just lose papers or old books; we lost the stories and cultural wisdom of people unknown to modern scholars, in part because history is written by the victors. The destruction of the Library of Alexandria mattered because it changed what later civilizations could know, remember, and imagine about the ancient world. If the Library had survived, scholars might possess a fuller historical record of the people and cultures of North Africa and West Asia.

To further clarify this claim, we first need to discuss how the library was founded. Originally, the library appears to have functioned as a collection of artifacts and literary works, housing many of the more famous texts from the ancient world. As the kingdom of Egypt grew, and Alexandria became a major port for ancient shipping routes across the Mediterranean, the Library and Museum were separated and, over time, developed into distinct institutions, though they maintained proximity to each other, serving related but different purposes. The Library also became a house of knowledge for African and Asian thinkers, astronomers, mathematicians, poets, and philosophers, and served as the center of intellectual activity for scholars across the Mediterranean world. The Library was founded on the principle that anyone qualified could visit, read, and write in a sanctuary of ancient knowledge. In the library itself, there were many works ranging from poetry by people like Homer to non-fiction writing about animals, as well as collections describing the different peoples of the ancient world, including groups that modern scholars do not fully understand or can no longer reconstruct in detail.

One ancient, ironic account is that Ptolemy asked Athens for the original copies of Sophocles and Aeschylus in exchange for thousands of talons of silver, claiming he would copy them and then return them; however, he paid Athens the silver but did not return the original

texts. Ptolemy also had seventy Jewish elders in Alexandria translate their scriptures into Greek at the library, giving it the name Septuaginta, or LXX in Latin.

Later on, in the library, ancient thinkers and scholars alike would gather in the library to discuss current matters and science; these scientists and engineers included Archemidias, Ctesibius, Aristarchus of Samos, and Eratosthenes, who was the head librarian. The library's size grew to anywhere from 300,000 to 700,000 scrolls at its height.

Myths and legends abound concerning the destruction of the Library of Alexandria. But what is the real story behind the first decimation of this Library? Historians often connect at least part of the damage to a fire during the Battle of Pharsalus (48 BCE), Julius Caesar's battle with Ptolemy XIII, though the exact details remain unclear. While many historians comment on the burning, Plutarch is the first to associate the fire with Caesar, explaining that he "was forced to repel the danger [of the enemy] by using fire, and this spread from the dockyards and destroyed the great library" (Life of Caesar, XLIX.6).[3] Even so, Plutarch's account is only one interpretation, and modern historians continue to debate the extent and origin of the damage. It is also worth noting that the library sustained heavy damage in two other events after the first burning by Caesar. The second burning came during the Roman Emperor Aurelian's rule (ca. 270 CE), during a period of turmoil caused by Queen Zenobia of the rebellious Palmyrene Empire taking over the city of Alexandria. Regardless of the number of texts lost at the library over time, some modern scholars safely estimate that only ~10% of all the works of classical antiquity survived. Some even suggest that only 3-5% of the works remain. With 50% of all remaining Greek texts being the works of the medical doctor Galen, as well as only a quarter of Livy's and a third of Pliny's works left. Showing that regardless of the precise cause of the incident, the Library experienced significant destruction, even if responsibility cannot be placed with absolute certainty.

With the library's burning, the documents, history, and knowledge preserved in the library were destroyed. This destruction led to many documents, histories, and forms of knowledge stored there being lost. While some works survived elsewhere, other materials, especially those concerning lesser-known peoples and cultures, may have existed only in Alexandria and were therefore permanently lost. Whatever survived beyond the Aurelian destruction is still unknown, as is the quantity of manuscripts possessed by Hypatia in the Serapeum (ca 390-415 CE) until she was killed by an anti-intellectual mob who ended up burning the remains of the already ruined library. It is also unknown what survived to the Muslim capture under the caliph Omar in the 7th century CE.

Beyond the material items, the destruction of the Library of Alexandria also mattered symbolically because the institution represented more than a storehouse of texts. It embodied the ambition to gather and preserve knowledge from across the world. When such a place is destroyed, the loss goes beyond the material objects in the collection. The destruction of the Library represents the fragility of cultural memory itself. In Alexandria's case, the fire signifies how easily centuries of human thought can be narrowed and erased, especially when the surviving record already favors the voices of the powerful over those of the conquered.

But did the Library of Alexandria actually help to "preserve" these cultural artifacts? It depends on one's perspective. Some argue that the Library preserved aspects of cultures that might otherwise have disappeared. As Lionel Casson observes, "Ptolemy II endowed [the Library] with the ambitious objective of acquiring a copy of every book in the world," casting the Library as an institution of cultural preservation.[4.] Many see the Library as a place that demonstrates the grandeur of people's cultural artifacts, despite them possessing no power. Others would label this process of acquiring materials as theft and argue that it should not be praised. For example, scholars like Andrew Erskine have argued that the Library of Alexandria reinforced Greek superiority while excluding other cultures.[5] Furthermore, questions about the Library's contemporary preservation practices complicate its role as a stable institution. For example, some contemporary sources suggest that the Library's contents were already in disarray before the fire. To ask whether the Library preserved culture, however, is also to question the purpose of the Library and those who held power over it. The origins of the Library reflect an imbalance of power. Roy MacLeod situates the Library's origins in a broader Mediterranean context, wherein rulers practiced the collecting and translating of texts from conquered or "foreign" people. These rulers sought "the books of all peoples […] and by the act of translating, rendered [those people] members of the dominant culture."[6] For these rulers, the looting of cultural artifacts was a method of colonization, and these violent practices suggest that the process of collecting texts was not neutral but tied to imperial and colonial power. By forcefully taking books, these rulers attempted to demonstrate "ownership" over the ideas and history of these "foreign" people. Through this violent process, the Library of Alexandria became a representation of power and colonialism, demonstrating the ways that museums can become a "symbol of subjugation." The historical reality that the collection in Alexandria was built on violence calls into question the role of the Library as an institution of "preservation." [7]

If the Library of Alexandria still existed, the modern world would likely possess a broader and less fragmented understanding of the ancient past. Scholars might have more information on the cultures of North Africa, West Asia, and the wider Mediterranean area, especially for the people whose histories only survive in fragments. But the Library's survival might also reveal a clearer understanding of how empires collected, translated, and controlled the knowledge of other people. In that sense, the world would look different not because ancient history would become complete, but because we would have more of the puzzle pieces needed, and our record of the ancient world would be less dependent on the victors alone.
The reputation of the library is so great that in modern times, it has spawned a revival since 2002, in part led by Dr. Michael Keller, the chief librarian at Stanford, called "Bibliotheca Alexandrina" (New Alexandrian Library), in the city of Alexandria with shelf space for eight million books, but also an enormous digitised collection featuring over 100 terabytes of information.

The legends of the original Library remain both verifiable and mythical; indeed, the Library of Alexandria metaphorically echoes the lighthouse of Alexandria, as a beacon and safe of knowledge in words: Lux ex oriente, "Light out of the East".[9]

Works Cited

1.Cassius Dio, Roman History 60.19–22, trans. Earnest Cary, (Loeb Classical Library: Cambridge, MA); Strabo, Geography 4.5.2, trans. Horace Leonard Jones, (Loeb Classical Library: Cambridge, MA) 254–55; Pliny the Elder, Natural History 32.21, trans. W. H. S. Jones, (Loeb Classical Library: Cambridge, MA) 502–3.

2.Andrew Erskine, "Culture and Power in Ptolemaic Egypt: The Museum and Library of Alexandria," Greece and Rome, 2nd ser., Vol. 42, No. 1 (Apr., 1995) 38-48.

3.Plutarch: Parallel Lives (1916-), translated by Bernadotte Perrin (Loeb Classical Library: Cambridge, MA).

4.Lionel Casson, Libraries in the Ancient World (New Haven: Yale University Press, 2001) 31–32.

5.Andrew Erskine, "Culture and Power in Ptolemaic Egypt: The Museum and Library of Alexandria," Greece and Rome, 2nd ser., Vol. 42, No. 1 (Apr., 1995). 38-48.

6.Roy MacLeod, "Introduction," in The Library of Alexandria: Ancient Centre of Learning (Roy MacLeod) 14.

7.Elena Baylis, "Looted Cultural Objects," Columbia Law Review (Vol. 124), https://columbialawreview.org/content/looted-cultural-objectsdestroyedheldwere/

8.El-Abbadi, Mostafa. "Library of Alexandria". Encyclopedia Britannica, 5 Aug. 2026, https://www.britannica.com/topic/Library-of-Alexandria. Accessed 15 August 2026.

9.Some of the information and images herein are attributable to a Stanford University postgraduate course by Dr. Patrick Hunt, offered in the summer of 2026, ARC 109, titled "Seven Wonders of the Ancient World".

Watched, Controlled, Contained: Surveillance and Discipline of Female Migrant Domestic Workers in Singapore By Lac Nghi Nguyen

1. Introduction

Every morning, before the sun rises, a woman from Myanmar or the Philippines quietly begins her sweep across a Singaporean apartment. Contemporary Singapore depends deeply on the labor of over 250,000 domestic workers (MOM, 2025). These workers, often referred to as "aunties," perform essential household labor including cleaning, cooking, and caregiving for middle-to-upper-class families. Despite their indispensability, their work remains shadowed in public discourse. While physically demanding outdoor labor like construction is frequently debated, discussions regarding the "mental labor"- the cognitive and emotional effort required to manage a household and anticipate needs - are almost nonexistent.

This paper explores how Female Migrant Domestic Workers (FMDW) in contemporary Singapore are subjected to specific forms of discipline and surveillance that constrain them to restrictive labor regimes. Utilizing qualitative methodology through in-depth interviews, this study analyzes the intersection of state policy, internalized pressure, and societal stigma. By employing concepts of carceral domesticity and emotional labor, the research highlights the dual burden of being simultaneously indispensable to the state yet socially excluded.

2. Historical Background and Policy Context

The emergence of FMDW in Singapore was initially a response to shifting gender norms and economic pressures. In the 1960s, many women sought to escape traditional Confucian practices in home countries that restricted them to domestic roles (Biblioasia, 2017). Combined with limited economic opportunities and political instability in regions like the Philippines and Indonesia, migrating to Singapore became a primary strategy for financial survival and personal autonomy. Cantonese "amahs" were among the first to transition into these roles, working for affluent families.

3. Literature Review

Current scholarship on migrant labor in Singapore highlights a stark contrast between the state's economic dependence and the workers' lack of social protection. Tan (2024) argues that the "Foreign Maid Scheme" creates a state of "everyday insecurity" where workers are monitored both biologically and legally. Research by Anjara et al. (2017) and Van Bortel et al. (2025) emphasizes the psychological toll of these conditions, noting high levels of stress and limited coping mechanisms. Furthermore, reports from NGOs like HOME (2022, 2025) document how emotional abuse and the "policing of bodies", controlling appearance and behavior, are systemic rather than incidental issues within the domestic sphere.

4. Conceptual and Theoretical Framework

To understand the disciplinary mechanisms at play, this paper utilizes Arlie Hochschild's (1983) theory of *emotional labor*. Hochschild defines this as the management of feelings to create a publicly observable facial and bodily display. For FMDW, this involves "surface acting" (faking a smile) and "deep acting" (convincing oneself to feel affection for an employer's child) to maintain professional harmony. This labor is often invisible but causes significant "emotive dissonance" or burnout.

Complementing this is the concept of *carceral domesticity*, rooted in Michel Foucault's theories of disciplinary power. This framework describes how the home-traditionally a site of comfort-is transformed into a site of containment and surveillance through timetables, CCTV, and rules (Krishnan & Antona, 2023). These mechanisms create "docile bodies" through constant monitoring rather than physical force, blurring the lines between the worker's professional and private life.

Carceral domesticity, built off of Foucault's idea of disciplinary power, refers to the ways in which the structures and practices of incarceration and punishment infiltrate and shape domestic life. It describes how everyday life within the home can be characterized by containment and control, similar to those found in prisons or other carceral settings. While a home typically evinces a sense of comfort or familiarity within individuals, for FMDW, it can become a highly restrictive and regulated space where autonomy is constricted. It is the result of what Foucault defined as "disciplinary power", the ability to shape and to create docile bodies through structures of surveillance and normalization that rely less on physical violence and more on the subtle mechanisms of control such as timetables and examinations. These mechanisms, utilized in institutions, schools and even hospitals, are normalized methods of oppression which reshape someone's way of thinking and behaving. Migrant Female Domestic Workers in Singapore are exposed to extreme surveillance daily. Live-in arrangements blur the lines between workplace and private space, turning home into a continuously monitored site. They are confined emotionally and socially, through constant CCTV surveillance and employer imposed rules such as clothing, schedule, behavior and sometimes even outside relationships. While the extremities fluctuate from employer to employer, some form of social restriction is regularly imposed in most households.

5. Methodology

For this research paper, I decided to do qualitative research, specifically conducting in depth-interviews with FMDW from different regions all across South Asia. In-depth interviews, as opposed to surveys where the scope is larger but the answers are more narrowed, are more effective in leaving time for development of responses and deeper inquiries, which is necessary in order to gauge the overall deeper structure of each answer. Additional probing was also necessary in understanding the complexities of female migrant workers' experiences in their fields of work.

Participants and recruitment

Throughout the data gathering process, a total of 7 FMDW from various countries such as the Philippines, Sri Lanka, Indonesia and Myanmar who had been working in Singapore for a substantial 6 years or more were interviewed. Initial contact was facilitated through an acquaintance, and subsequent participants were recruited via snowball sampling. I formed connections from there in hopes of discovering new and diverse perspectives within the sphere. Nonetheless, snowball sampling could possibly result in bias as interviewees could be from the same friend group and thus share similar perspectives that may not be reflective of the overall community. After each interview, I asked interviewees to introduce me to other women within their community in order to continuously build on responses.

The first drawback came when scheduling calls as interviewee 1 stated “Please call at a time convenient for you because I’m at work so it’s hard to give you a specific time”. This slight limitation was later justified due to the lack of concordance for daily schedules, specifically time off work and time on the job, “I don’t know when I finish work, so that’s why it is better if you call me instead”. This scheduling issue was recurrent, “I am not sure when I am available, so I will text you when I can”.

Each interview took place on google meets, where calls were recorded and transcribed in a private folder to assure anonymity for participants. Ethical safeguards were implemented to ensure transparency with my intentions, notifying interviewees of the recording in progress, the general research report topic and verified their consent via a signed consent form prior to the interview. At the end of each interview, I made sure to ask interviewees again about the information they wished to be excluded from the research paper in order to guarantee transparency. The interviews lasted about 15 to 20 minutes, including precautions regarding language barriers and thought process, and built off of very specific quotidian scenarios. Each interviewee offered unique and yet cohesive answers which linked to one another’s responses without being too similar.

Data analysis

I planned to analyze each interview thoroughly, highlighting the main thematics and recurrent patterns and structures in regards to responses via Google Docs. After transcribing each response, an initial round of open analysis was conducted to highlight recurring and divergent themes. After each response was thoroughly examined, a table was collated which highlighted the main ideas and general thoughts of the interviewees, particularly in regards to financial responsibility and familial duty, in order to find coherence, or discord within. By the second interview, a pattern was already forming about participants' speech methods and similar emphasis, suggesting strong thematic alignments.

6. Findings and results

This research paper aims to answer the questions of “In what ways do FMDW experience discipline and surveillance in the contemporary Singaporean context”. Below, all 7 participant’s responses will be presented in thematic order of what was asked during the interview. Across

seven interviews, three main themes emerged: (1) duty to the family, (2) responsibility to the employer and (3) discriminatory treatments.

Family Obligations and Self-Discipline

When asked about the reasons for migrating to Singapore, almost every response was similar. through the ways they heightened the importance of earning money despite individual setbacks. Interviewee 3 mentioned she sends one-third of her monthly salary back to the Philippines every month in order to support her children who are still in school studying with her parents; “my husband is no longer working because he is sick, so he cannot. I have to do my best to help my family.” Interviewee 2, who first began her journey working in Singapore by applying to an agency in Sri Lanka noted that employment is quite competitive among the community. Agencies will host 21-day programmes to sharpen housework skills before introducing participants to employers. Interviewee 1 states that she was “lucky enough because I (she) only had to do one interview before getting hired” despite the striking language barrier and communication hindrances.

This pattern was once again continual when asked about their overall consensus about the position and job they worked at. Not many expressed complete dissatisfaction with the workplace conditions, highlighting overall gratitude for the overseas job opportunity. It seems that the ability to earn a living overshadowed any drawbacks within the workfield, especially when the goal in mind was so unwavering: “I want to do my job well because then, I can send money back to my family. It’s a job so it’s okay if it’s hard, I still have to do my best to do my job” interviewee 2 states showcasing a strong-rooted sense of responsibility and duty to the family, transcending potential hardships on the way.

Internalized pressure

The findings support the presence of carceral domesticity. Interviewee 4’s feeling of "guilt" when not working illustrates how surveillance is internalized; the employer does not need to be physically present for the worker to monitor herself. Because her bedroom is part of the workspace, she experiences a "panoptic" effect where she acts as her own jailer, hiding personal activities like calling family.

While employers do sometimes schedule semi-structured work hours, which fluctuate depending on the day, event or tasks given, the constant exposure to work environment typically blurs the lines between individualism and professionalism. Notably, interviewee 4 highlights a feeling of guilt and self-prescribed laziness when she is not doing anything related to her profession, even when she has finished all the tasks in the house or when she is on break The sense of pride which is often associated with being productive and efficient seems to be weaker for some of these workers, because they are constantly reminded of their tasks in the professional workspace. It is a mindset which relapses on the idea that “I should be doing something right now”, or “I shouldn’t be lounging around”, eroding the boundaries of personal break time. This constant dread can be associated with an intensified obligation to satisfy the employer which

eventually breaks through the frontier of personal life. Quotidian tasks such as calling her family and friends; exercising; or scrolling on her phone become things she tries to keep secretive, even in the comfort of her bedroom walls. Her mindset plays on simple association. Because her bedroom is a part of the overall structure of the workspace, it should also be a space of work. This not only showcases a strong sense of self-discipline but also of self-surveillance which transcends the impact of any form of employer manipulation.

Interviewee 2 further supported that because this job was so time-demanding, it is incredibly hard to make time for herself.

Discriminatory Treatment and State Surveillance

Another issue that was brought up by interviewee 4 was her dislike for the mandatory medical screening occurring once every 6 months. While she agrees that such policies are necessary and reasonable, she also expresses an impending sense of dread at every scheduled session. These biannual medical screenings are intended to monitor pregnancy or the presence of any infectious disease that could put the general public in danger. A positive result regarding pregnancy could lead to immediate repatriation. Interviewee 4 mentioned how these screenings made her feel like a high-risk body, constantly in need of monitoring, unlike other categories of workers who are not under the same scrutiny. These routines sometimes made her feel more problematic or untrustworthy. This could be a result of a misalignment of goals. Where medical checkups are typically to protect workers from disease and illness, these screenings are more targeted towards the protection of the state, not necessarily workers' long-term health and well-being. This not only gives the impression that the workers are not part of the state itself, but even a potential endangerment.

7. An intersectional approach on FMDW

To analyze the findings, I employ an intersectional lens, specifically examining how the categories of *gender, nationality, and class* overlap to produce unique vulnerabilities. For example, being a "woman" (gender) from a "developing nation" (nationality) working as "domestic help" (class) subjects an individual to different prejudices than a male migrant worker in construction or a local female professional. These intersecting identities determine not only how they are policed by the state but also how they are perceived in public spaces.
Female migrant workers experience forms of discipline in a very controlled and pressurized way. They experience the self-discipline of wanting to constantly please their employer, the pressure of expectations, but also the 24 hour daily surveillance which acts as an indirect control mechanism for complete isolation.

In the work field of domestic workers, ethnicity and nationality is greatly valued. Interviewee 3 noted that during her time at the agency, recruitment prided itself on certain skillsets associated with Filipino nationality. People were often chosen based on their origin rather than their abilities to perform household tasks. Her agency often boasted that "because (we) are from the Philippines, people are more likely to hire (you) because they think (you) will

do good.” While the likelihood for women from countries such as the Philippines or Indonesia to be chosen is relatively high, many women from less popularized countries such as Sri Lanka struggle. These are prejudices which remain persistent in hiring trends for FMDW.

Outside of the workplace, they experience scrutiny and stigma from Singaporeans due to not only their occupation, which is deemed inferior, but also their ethnicity. Interviewee 5 reported that oftentimes, she felt looked down upon, as if locals thought she "wasn't good enough to make (my) own decisions”. Casual racism is dismissed as general stereotypes, “it’s just the way things are”. This is because for many years, the idea that domestic workers were uneducated, low-income and ill-mannered was generalized. The normalization of such outlooks became embedded in people’s ways of thinking, as if a game of natural association. Derogatory comments are regarded as widely accepted facts within the social hierarchy. And even without racist intent, FMDW are put at a social disadvantage because the unconscious mind creates social prejudice.

On their rest days, FMDW often gather around near the Mass Rapid Transit (MRT) stations in Singapore, or anywhere with an open field and shade from the sun. Yet even these brief moments of freedom are shrouded by hostility and hatred. Interviewee 3 recalled being cussed at with her friends “for dirtying the place” and “causing a ruckus”. Such events illustrate how FMDW are perceived as intruders and trouble-makers, even in public space
This tension highlights how control and surveillance extends beyond the employer’s household. Public surveillance and social scrutiny act as invisible scaffolding, reminding workers of their perceived outsider status. The sharp contrast between the intense physical and mental labor demanded of them and the lack of dignity afforded to them during rest reveals a dual burden: they are simultaneously indispensable and at the same time, unappreciated. While upper and middle class families heavily rely on FMDW’s labor, they continue to be denied proper care for their contributions. FMDW are both needed, but also excluded. They are essential for the economy but denied pathways to citizenship. Even when they are not actively working, their identities are framed through the lens of servitude and inferiority, and their presence in public space is constantly policed.

Simultaneously, in addition to public scrutiny, their identities as women face additional prejudice as they are accused of entrenching gender stereotypes. Originally meant as a way of separating themselves from traditional gender norms, FMDW migrated to Singapore only to be accused of the very thing they tried to escape. Where women are often empowered for their ability to accomplish tasks beyond social expectations, FMDW are regarded as unsuccessful for “failing” to break through.

A critical finding involves the subversion of gender norms. Many FMDW migrated to escape the "caretaker" role mandated by traditional practices in their home countries, seeking the agency associated with being a breadwinner. However, in Singapore, they are funneled back into the same caretaker roles. Paradoxically, while they have broken free from their own domestic shackles to work abroad, they are stigmatized by local society for failing to "advance" beyond gendered labor, entrenching them in a cycle of stereotypical expectations.

8. Discussion and Conclusion

While much of the discourse around FMDW emphasizes their vulnerability, it is equally important to highlight the ways they exercise agency within these restrictive systems. Many workers create spaces of solidarity and belonging through church groups, religious gatherings, and informal associations, where they share information, provide emotional support, and momentarily reclaim a sense of home.

Interviewee 5 highlighted her bargain with employers for more rest-hours. When denied, she was able to leave the family she worked for and seek out another who could accommodate her needs. Small acts like this show how FMDW can resist restrictive systems and showcases how workers will still fight for their autonomy despite employer setbacks.

Non-governmental organizations such as HOME (Humanitarian Organization for Migration Economics) and TWC2 (Transient Workers Count Too) further amplify these efforts. They not only provide legal aid and shelter for abused workers but also facilitate advocacy and leadership opportunities, enabling FMDWs to speak publicly, engage in campaigns, and reframe themselves not just as "helpers" but as active participants in Singapore's social fabric.
In conclusion, how do female migrant domestic workers in the contemporary Singaporean context experience unique forms of discipline and surveillance?

This research highlights how discipline and surveillance intersect with the dimensions of daily life for FMDW. FMDW are subject not only to employer control but also to state regulations and restrictive legal policies that embed surveillance into their everyday lives, through medical checks, mandatory live-in arrangements, and restrictions on mobility. These forms of discipline are inseparable from gender, as the "ideal" domestic worker is expected to be self-sacrificing, obedient, and invisible, reinforcing a patriarchal and racialized hierarchy of labor where women are the household pillars. While the hardships and drawbacks of FMDW are highly overlooked, understanding the uniqueness and complexities of nature of the discipline they receive is critical in visualizing the entire picture. The workers interviewed emphasized their self-discipline to provide for families back home, even when faced with exploitative conditions, showcasing a strong resolution and sense of duty. This emphasizes how discipline and control goes beyond employers, merging with workers' work ethic and sense of self-discipline.

At the same time, Singapore's heavy reliance on migrant women exposes a deep contradiction. While FMDW are underappreciated both in public media discussions and legal protection frameworks, their labor is indisposable and heavily relied on in the quotidian lifestyle. Middle and upper class families depend highly on the work of FMDW whether for menial tasks such as turning off the lights every night, or for strenuous chores such as cooking, cleaning, grocery shopping and babysitting. Their contributions to the economy of Singapore are undeniable, yet they are continuously denied citizenship or adequate legal protection from isolation, domestic abuse and unjust ministrations. While FMDWs are employed to provide care and sustain other's well-being, the ways in which they are cared for is highly paradoxical.

Moving forward, policy reforms are necessary to recognize domestic work as legitimate labor rather than an informal "helping" role. Mental labor should not be disregarded as menial or unneeded, but rather as another form of legitimate and valid work.

Expanding Employment Act protections to include migrant domestic workers, ensuring access to mental health support, and revisiting the live-in requirement would be crucial first steps toward improving both dignity and well-being. FMDWs should be entitled to receive the same care as any other Singaporean worker. Additionally, expanding accessibility for mental health support or safety mechanisms could alleviate FMDW's distrust, creating an overall safer space for workers to report abuse incidents. Accessibility should transcend language barriers, offering a sense of community for workers going through a hard time. In a meritocracy based society, FMDWs should be recognized not only for their diligence and hardwork, but also for their undeniable contributions to helping the country evolve.

Beyond technical reforms, Singapore and the general public must shift their prejudicial cultural perception of domestic work, seeing workers not only as helpers in households but as workers with rights, agency, and humanity. Recognizing the "worth" of FMDW is a crucial step towards fully internalizing workers into Singaporean society. Moving forward, we should strive to avoid seeing Singapore's social front as separate puzzle pieces, but rather aim to visualize the whole image where FMDW are included in cultural and societal harmony.

Works Cited

Anjara, S. G., et al. (2017). “Stress, Health and Quality of Life of Female Migrant Domestic Workers in Singapore.” BioMed Central.

BiblioAsia. (2017). “A Lifetime of Labor: Cantonese Amahs in Singapore.” National Library Board.

Bin, T. R. (2022). “The Lived Realities of Migrant Domestic Workers in Singapore.” Global Research and Consulting Group.

Chua, N. (2022). “Threatening, Controlling Behaviour towards Maids: HOME Report.” The Straits Times.

He, S., et al. (2025). “Exploring Privacy Challenges Faced by Migrant Domestic Workers.” arXiv.Org.

Hochschild, A. (1983). The Managed Heart: Commercialization of Human Feeling.

HOME. (2025). “Policed Bodies: Surveillance of Migrant Domestic Workers.” HOME.org.sg.

Krishnan, S., & Antona, L. (2023). “Carceral Domesticities: An Introduction.” Sage Journals.

NUS Libraries. (2022). “Foreign Maid Scheme and Migration Policy.” NUS.edu.sg.

Tan, S. J. (2024). Gendered Labor, Everyday Security and Migration. Routledge.

Exploring the Impact of Social Media on Adolescent Depression and Interpersonal Relationships By Giselle Megan Li

Abstract

The rapid expansion of social media has slowly transformed modern adolescent development, fundamentally reshaping identity formation and mental health. This literature review examines the interplay between social media use, adolescent depression, and interpersonal relationships within broader psychological and sociocultural contexts. Digital platforms possess a dual nature, offering constructive spaces to foster community while also introducing risks through idealized portrayals and cyberbullying. Beyond digital influences, neurobiological predispositions, environmental stressors, and genetic vulnerabilities collectively shape the onset and progression of adolescent depression. Promoting resilience and safeguarding youth mental health require targeted interventions tailored to these digital dynamics. Furthermore, clarifying the long-term consequences of digital engagement remains a pressing necessity, especially for marginalized and underrepresented populations.

Keywords: Interpersonal Relationships, Adolescent Development, Depression in Adolescents, Social Networking Sites, Technology Use, Symptoms of Depression, Mental Health, Marginalized Communities

Introduction

Adolescence unfolds within an increasingly digitized environment, where social media platforms such as Instagram, Snapchat, and Facebook strongly influence communication methods, identity formation, and relationships. These networks facilitate opportunities for self-expression, social planning, and the formation of friendships, yet simultaneously introduce risks that complicate psychological development (Wu et al.; Nesi et al.). While digital engagement can strengthen interpersonal bonds and provide possibilities for emotional support (Spies Shapiro et al.), it also fosters harmful comparisons, cyberbullying, and pressures to sustain idealized online identities, which are factors consistently associated with depressive symptomatology (Senekal et al.; Pagliaccio et al.).

Early research in this field focused heavily on quantifiable screen time and aggregate digital consumption as baseline predictors of mental health decline (Pérez-Torres). These initial models often treated digital exposure as a risk factor, usually overlooking how specific behaviors or individual vulnerabilities alter these outcomes. Over the past decade, however, new ideas have emerged. Instead of solely analyzing generic screen-time tracking, nuanced ideas such as user interaction and micro-level assessments of real-time psychological impacts have become essential for understanding the complexity of social media and mental health (Valkenburg et al.).

This study interrogates the intersection of social media use, adolescent depression, and interpersonal relationships, examining how digital environments both enrich and destabilize the social and emotional lives of young people. Recent studies highlight the duality of these effects,

showing that social networking sites can strengthen the quality of relationships while also broadening the scope of adolescents' social connections (Nesi et al.). Conversely, excessive reliance on online validation and exposure to negative commentary can negatively impact self-esteem and intensify vulnerability to depression (Wu et al.; Keles et al.). Placing these patterns within genetic, environmental, and neurobiological frameworks, it highlights the intricate nature of adolescent mental health in the digital age.

To address these dynamics, this review is structured into four sections. First, it considers how patterns of social media use, particularly distinctions between active and passive engagement, shape adolescent well-being. Secondly, it explores the transformative role of digital platforms in interpersonal relationships, highlighting both their capacity to strengthen friendships and their potential to create conflict. Third, it examines the multifactorial contributions to adolescent depression, such as genetics, environmental pressures, and lifestyle habits. Finally, it analyzes how social media interacts with these vulnerabilities to exacerbate or mitigate depressive outcomes, with particular attention to marginalized communities. The literature review aims to clarify the nuanced relationship between social media, depression, and adolescent interpersonal development, while identifying strategies that may foster resilience and healthier engagement with digital participation.

Methods

This literature review was conducted using Google Scholar, which provided access to peer-reviewed journal articles, books, and systematic reviews relevant to the research focus. Search terms included *mental health*, *social media and depression*, *adolescent depression*, *use of social media*, *social media and relationships*, and *interpersonal relationships*. Sources were selected based on the presence of these keywords in titles and abstracts, as well as their direct relevance to the central research question. A total of 24 articles were selectively included to be synthesized and organized into thematic categories. The final selection prioritized papers showing rigorous thematic alignment and methodological relevance to the core research objectives. Differences among studies were highlighted, and gaps in the existing literature were identified. To ensure coherence, the selected articles were arranged into distinct sections, enabling systematic evaluation of similarities, divergences, and methodological limitations.

The use of social media on adolescent well-being

Adolescents increasingly inhabit a digital environment in which social media functions both as a bridge to connection and a potential obstacle to psychological health. On the positive side, platforms provide opportunities for identity exploration and for strengthening social connections (Wu et al.). Yet experiences vary widely: some teenagers report feeling uplifted, others drained, and many remain unaffected. The different forms of engagement play a critical role. Active use, such as posting, commenting, and direct interaction, tends to foster support and belonging, while passive scrolling often provides entertainment but lacks the depth of genuine social connection (Valkenburg et al.).

The potential benefits of social media, however, are tempered by its risks. According to Wu et al., excessive use has been linked to feelings of loneliness, anxiety, and sadness, with heavy reliance on digital platforms increasing exposure to harmful interactions and negative comparisons (Pagliaccio et al.). Studies further connect social media consumption with reduced life satisfaction, a decrease in well-being, and depressive symptoms (Schemer et al.). Beyond psychological outcomes, neurological research suggests that prolonged overuse may disrupt cerebellum development, potentially affecting emotional regulation and cognition over time (Pfeifer and Allen). Interestingly, other brain regions tied to memory and motivation appear less affected, such as the cortical surface area or striatum volume (Nivins et al.).

The variability of outcomes illustrates the multifaceted role of social media in adolescent life, emphasizing the need for better recognition in reducing the effects of social media on adolescents' affective well-being (Beyens et al.). Longitudinal studies, such as the German Family Panel Survey, reveal that average levels of media compulsion do not consistently predict changes in well-being, accentuating methodological challenges in isolating direct effects (Schemer et al.). Many of these studies rely heavily on self-report measures, which can introduce bias through inaccurate recall or social desirability effects. This limitation makes it difficult to capture the nuanced, real-time psychological impacts of digital engagement. Confounding factors such as offline relationships, self-esteem, and traditional media use make it difficult to draw clear causal connections, showing the importance of studying adolescent digital engagement within its broader context.

Digital engagement is not inherently detrimental; balanced and active participation often produces positive effects. Many adolescents demonstrate resilience and competence in managing their digital lives. Survey data reveals that 31% of American teenagers perceive technology as beneficial, 45% as neutral, and only 24% as predominantly harmful (Dienlin and Johannes). These findings suggest that the impact of social media depends less on the platforms themselves and more on the patterns of use and individual differences.

Because these behavioral habits actively shape immediate psychological states, they inherently shape how adolescents negotiate and sustain their peer relationships in digital spaces.

The use of Social Media on Relationships

Social networking sites (SNSs), defined as Web 2.0 applications that enable user-generated content, personal profiles, and interconnected networks, have blurred the distinction between online and offline relationships (Nesi et al.). These platforms help with communication across different boundaries, creating opportunities for both the reinforcement of existing ties and the formation of new ones. While some scholars argue for the idea that SNSs strengthen offline connections, others suggest that they may substitute for them and therefore reduce face-to-face interaction (Valkenburg et al.). Ultimately, the way people use social media and the design of the platforms themselves influence how relationships form, develop, and sometimes even end (Butler and Matook).

Ample evidence demonstrates that SNSs serve to sustain adolescent friendships. To understand how these bonds are sustained, researchers track specific interaction variables, evaluating how the frequency, type, and content of daily digital exchanges map directly onto baseline friendship quality (Spies Shapiro et al.). Through these multi-method assessments, data reveal that teenagers frequently employ these platforms to maintain offline connections through routine exchanges about school, mutual acquaintances, and upcoming events (Spies Shapiro et al.). For example, in an empirical study tracking a sample of 387 adolescents aged 13 to 15, Valkenburg et al. utilized a three-week Experience Sampling Method (ESM). By prompting participants six times per day across 34,930 total unique data assessments, they tested the immediate, daily fluctuations of social media habits against real-time baseline friendship quality and closeness metrics (Valkenburg et al.). Complementing these tracking methods, macro-level data from the Pew Research Center evaluated these dynamics by administering a probability-based national online survey tracking teenagers aged 13 to 17. Their quantitative results showed that 72% of all teens use social media to interact with friends, with 70% reporting that these platforms make them feel better connected to their peers' feelings. This immediate digital communication expands the availability of peer networks, which can often contribute to improved well-being (Nesi et al.). Beyond localized peer circles, the architecture of SNSs fundamentally affects how individuals cultivate broader communities of support. A prominent example of this community-building is found in digital health domains, where systematic literature reviews show that online communities help individuals navigate unique personal challenges by exchanging lived experiences, seeking non-clinical advice, and providing mutual encouragement. Such decentralized networks help to bolster self-esteem and foster a sense of community among geographically isolated users facing similar circumstances (Smailhodzic et al.).

Nevertheless, the pervasive use of SNSs introduces significant challenges as well. Adolescents' preoccupation with digital interaction can generate family conflict, reduce time spent with parents, and heighten exposure to social comparison and cyberbullying (Senekal et al.). The demand for constant availability and the public nature of online interactions help to intensify pressures in order to maintain a consistent digital persona. This contributes to dependence, smartphone addiction, and dissatisfaction in relationships (Nesi et al.). In medical contexts, while social media can provide valuable support, it also raises concerns regarding privacy, misinformation, and overreliance on digital networks (Smailhodzic et al.). In addition, prioritizing interactions with like-minded individuals can limit our exposure to diverse perspectives, while false identities and misleading information can complicate the authenticity of online relationships (Butler and Matook).

When these interpersonal pressures become overwhelming, they interact directly with underlying vulnerabilities to trigger clinical depressive disorders.

Social Media and the Development of Depression

Adolescent depression arises from an intricate, bidirectional interplay between genetic predispositions, neurobiological alterations, lifestyle behaviors, and modern environmental stressors. Quantitative genetic data indicate that inherited variations account for approximately 30% to 40% of individual vulnerability, with polygenic risk scores (PRS) demonstrating strong correlations between specific inherited traits and early-onset clinical depression in children and adolescents (Singh et al.). These biological foundations interact alongside distinct changes in brain architecture. Specifically, reductions in hippocampal volume, inflammatory mechanisms, and alterations in functional brain connectivity show strong associations with childhood-onset depressive disorders (Singh et al.). While foundational macro-environmental variables, like diet, childhood abuse, early life stress, and broader social contexts, profoundly shape these outcomes, isolating their precise standalone impact remains methodologically difficult (Cairns et al.). In the contemporary developmental landscape, these long-standing vulnerabilities are increasingly overlapping with today's digital environments, which profoundly reshape adolescent socialization and psychological well-being (Cairns et al.).

Adolescent lifestyle behaviors directly amplify or mitigate pre-existing psychological vulnerabilities. Higher levels of depression are consistently associated with a cluster of high-risk factors, including frequent alcohol and cannabis use, dieting, illicit drug use, negative coping strategies, and maladaptive emotion regulation (Cairns et al.). Crucially, heavy and compulsive social media consumption represents a core maladaptive lifestyle habit that fuels a cyclical psychological trap. This persistent digital connectivity is frequently linked to fragile emotional control and ineffective coping behaviors. It creates a bidirectional cycle where young people struggling with depressive symptoms retreat into online spaces seeking temporary relief, yet their reliance on these platforms ultimately intensifies the very symptoms they are trying to escape. Conversely, lower levels of depression are linked to protective behavioral factors, including a healthy diet, adequate sleep, and active participation in sports (Cairns et al.).

The proliferation of digital media has been increasingly associated with the rising rates of youth depression, primarily driven by underlying psychological mechanisms rather than just screen time (Pérez-Torres). A primary mechanism driving this relationship is upward social comparison, where individuals evaluate their own lives against the highly curated, idealized portrayals of their peers. Digital environments like Instagram inherently incentivize the construction of highly artificial online personas, which can harm adolescent self-worth and make problems like peer pressure, online bullying, and social exclusion worse. Consequently, adolescents who feel compelled to conform to societal standards or seek validation through digital approval experience heightened psychological distress (Pérez-Torres). Although many studies confirm this connection, researchers still debate how strong it really is, since the overall effects across large populations often appear small (Valkenburg et al.). One persistent weakness is the reliance on relatively small, homogeneous samples, often drawn from Western contexts. This raises questions about whether findings can be generalized across diverse cultural and socioeconomic groups. To resolve this, Valkenburg et al. utilized a combination of longitudinal tracking and micro-longitudinal Experience Sampling Methodology (ESM), surveying

adolescents multiple times a day through their smartphones. Their research captured real-time fluctuations in mood immediately following social media use. This approach allowed researchers to confirm that while the overall impact on the population seems small, certain subgroups of vulnerable adolescents experience sharp and immediate increases in depressive symptoms after changes in passive social media use (Valkenburg et al.).

Evaluating this relationship, therefore, requires accounting for individual differences, situational factors, and the distinct quality of social media interactions (Valkenburg et al.). This discrepancy highlights a critical gap in existing literature regarding the specific mediators (e.g., sleep disruption, cyberbullying) and moderators (e.g., gender, pre-existing low self-esteem) that dictate how media exposure translates to psychological outcomes. Synthesizing these dynamics, Keles et al. identified a slight yet significant correlation between digital media and youth depression by shifting the focus to specific high-risk behavioral patterns. These risky markers include habits such as constantly checking for messages, deep personal dedication to online networks, and addictive or problematic usage, all of which strongly correlate with clinical depression, anxiety, and psychological distress. Excessive, compulsive engagement on specific platforms like Facebook similarly predicts elevated distress markers, proving that social media effects depend heavily on existing vulnerabilities and surrounding factors rather than acting as a direct, universal cause of depression (Keles et al.).

These vulnerabilities and behavioral manifestations vary significantly across adolescent groups, carrying profound implications for their interpersonal relationships. Hammond et al. categorized 45 English-speaking adolescents into clinically depressed, somewhat depressed, and nondepressed groups, finding significant variations in self-esteem, social comparison, and locus of control. Analysis revealed that clinically depressed adolescents showed stronger beliefs in external control, nondepressed adolescents in internal control, and somewhat depressed individuals fell between these extremes. Depressed individuals consistently tended to withdraw from others, reflecting a negative self-concept. This relationship is complex, where adolescents with low self-esteem are more prone to online comparison and feel inadequate when confronted with idealized peer portrayals, which intensifies negative self-perceptions and social isolation. Conversely, those with higher self-esteem may use social media to connect and affirm their identity, fostering a positive self-concept. In this way, social media both enables identity expression and risks widening the gap between online and offline selves (Hammond et al.).

These digital vulnerabilities are also heavily gendered, highlighting a growing susceptibility among female adolescents. Seiffge-Krenke et al. observed that adolescent girls consistently report higher levels of depressive symptoms than boys, particularly between the ages of 14 and 17. Contemporary research attributes a substantial portion of this gender gap to distinct digital engagement patterns. The link between heavy social media use and depressive symptoms is twice as high among adolescent girls compared to boys (“Depression Linked”). This heightened impact is primarily driven by girls’ greater exposure to appearance-centric content, scrolling-induced body insecurity, and online harassment, which disproportionately degrade their psychological well-being (“Depression Linked”). Because inherited predispositions

are triggered by a mix of early life stressors and online social pressures, effectively treating depression within this sensitive demographic requires a comprehensive structure. Interventions must address biological vulnerabilities alongside tailored solutions, such as digital literacy, cognitive behavioral therapy (CBT), and behavioral modification (Singh et al.). By prompting low self-esteem and digital distress, these combined factors frequently cause depressed adolescents to withdraw from their offline networks, transforming an internal psychological vulnerability into a disruption of their interpersonal relationships (Nesi et al.).

The progression toward adolescent depression operates as a destructive cycle where existing mental health vulnerabilities amplify daily online stressors, presenting heightened difficulties for youth from diverse cultural backgrounds.

Social Media and Its Impact on Marginalized Communities

Social media in marginalized communities can increase visibility and representation but also encourage discrimination and hate speech. Marginalized groups face problems such as exclusion, invisibility, and misinformation both online and offline. Social media pressures marginalized communities to conform to certain behavioral expectations, leading to fear of self-expression due to the rapid rejection of opinions. Expectations about online behavior differ from offline behavior, so people feel pressured to meet community norms online (Eickers and Rath).

Despite these challenges, social media can support marginalized communities through the creation of inclusive online spaces. These platforms enable individuals to communicate, share information, and participate in diverse virtual activities. Examples include social media sites, forums, chat rooms, and online gaming environments. Such digital communities often serve as critical developmental resources for marginalized youth. For instance, access to affirming spaces is not uniformly available to LGBTQ+ adolescents across geographic or cultural contexts. Research indicates that engaging with social networking sites during the process of sexual identity development can enhance mental health outcomes. However, longitudinal studies caution that online relationships may require careful safeguarding, particularly for young people experiencing suicidal ideas (Odgers et al.).

Odgers et al. further stated that underprivileged groups frequently experience more exposure and scrutiny on the Internet, making them more vulnerable to intentional harassment. Individuals from these groups may have lower social status offline, which could make them more vulnerable online. The effects of online harassment can be amplified by an absence of services and support systems, which can result in serious mental health issues. Negative content exposure can lead marginalized individuals to experience worthlessness or self-hatred and also reinforce harmful stereotypes. Increased mental health problems like anxiety and depression could result from it, especially for people whose identities already make them vulnerable. Those who are repeatedly exposed to disturbing content may develop a cycle of trauma that makes it challenging for them to look for encouraging or supportive online experiences (Odgers et al.).

To support marginalized communities, implementing inclusive digital environments that offer equitable access to healthcare, empirical information, and foundational education remains vital. In addition, collaborations among technology companies, researchers, policymakers, and educators should be established to help build supportive communities for people in need (Odgers et al.). Furthermore, implementing educational programs that emphasize digital skills is necessary to ensure that underrepresented groups can use technology and navigate online environments effectively. Diverse voices in the media should be encouraged, with particular attention given to amplifying the voices of people in marginalized communities (Eickers and Rath).

Future Research

Future research should prioritize investigating the long-term consequences and variations in outcomes related to digital devices and social media use. Understanding the impact of these technologies on mental health and social processes is crucial for individuals, families, schools, policymakers, legislators, and designers. To fully grasp the cultural and social implications of social media use and its effects on the well-being of teenagers, research must consider the broader context, particularly in regions such as South Africa, an extremely understudied area. Investigating this region provides a critical baseline to contrast with dominant Western-centric datasets, revealing how digital pressures can be seen within a unique landscape of rapid mobile connectivity, multicultural communities, and socioeconomic disparities. Understanding the cultural and societal consequences of social media use in South Africa is vital for healthcare professionals to provide treatments and mental health services, preparing adolescents and parents to navigate both the good and negative effects of social media (Senekal et al.).

Methodological improvements are also essential. Expanding the research range to include a wider variety of behaviors, like collaborating with schools to integrate diverse perspectives, while simultaneously adopting multi-method approaches–such as surveys, interviews, and experimental designs–to measure the true extent of adolescent media consumption. Targeting vulnerable populations, particularly adolescents with pre-existing mental health challenges, will yield deeper insights into specific risk factors. Broadening assessments could also encompass comprehending the various forms of interactions adolescents participate in, such as their preferred content or feedback. Grouping these methodological refinements highlights the need for more rigorous, diverse, and context-sensitive approaches.

Longitudinal studies, in particular, could provide valuable insights into how social media use influences the onset of depression from childhood through adolescence and into adulthood. Because adolescence represents a crucial phase of neurological rewiring, hormonal fluctuations, and identity formation, long-term tracking is essential to determine whether heavy digital media use during early puberty permanently alters neural pathways associated with emotional regulation and executive functioning, or if these effects subside as the brain matures (Pfeifer and Allen). Longer studies and more research are needed to fully evaluate the impact, especially to distinguish among different social media platforms. These methodological considerations also

connect to the understudied area of treatment effectiveness, where preventive measures and interventions remain insufficiently explored.

Regarding social networking sites (SNSs), there is a need to address unresolved issues concerning their effects on adolescents' communication, identity development, and self-esteem. It is important to explore the role of specific online platforms and activities in fostering positive relationships among adolescents. Finally, to fully understand the relationship between depression and digital media usage, it is important to better understand the interactions between genetic factors and environmental influences. Research should delve into the unique aspects of depression-specific causes and methodologies, distinguishing them from general psychopathology. Longer follow-up studies, multi-modal research methods, and the collection of detailed information on digital media usage patterns are also needed to comprehend their impact on brain development and mental health comprehensively.

Future empirical frameworks must explicitly integrate gender differences into their research designs. Given that female adolescents report twice the rate of social media-linked depressive symptoms compared to boys, researchers must explore the precise mechanisms behind this gap, such as gendered differences in digital communication styles, varying vulnerabilities to appearance-centric algorithms, and distinct susceptibilities to online harassment (“Depression Linked”).

Discussion

The relationship between social media and adolescent well-being is complicated, shaped by patterns of use, individual vulnerabilities, and broader social contexts. Passive engagement, like consuming content without interaction, has been associated with loneliness and diminished satisfaction, whereas active participation through conversations and sharing can foster connection and supportive relationships (Valkenburg et al.). Yet, excessive reliance on digital platforms often produces adverse outcomes, including heightened anxiety, reduced self-esteem, and increased exposure to cyberbullying (Wu et al.; Pagliaccio et al.).

Singers et al. contribute to this debate by emphasizing that motivations for social media use significantly influence outcomes. Their findings suggest that information-seeking behaviors are largely unrelated to improved well-being, whereas usage driven by relaxation and interpersonal interaction correlates positively with mental health. Their research also highlights critical gender differences: adolescent girls exhibit a stronger attachment to their phones and have more compulsive usage patterns than boys, which can intensify their relationship with negative emotional consequences, aligning with broader research on gendered differences in depression, highlighting the need for targeted strategies (Seiffge-Krenke et al.).

Beyond individual differences, social media also plays a role in marginalized communities. It provides visibility, representation, and support networks, particularly for groups such as LGBTQ+ youth, yet at the same time can also expose them to discrimination, hate speech, and pressures to conform to dominant norms (Eickers and Rath; Odgers et al.). The

creation of inclusive online spaces, along with educational initiatives in digital literacy, can mitigate these risks and enhance resilience.

Interventions within educational settings remain important. Counseling programs, mindfulness initiatives, and peer support networks can provide adolescents with coping strategies, emotional regulation, and a sense of belonging. Parental involvement can also play a protective role, as supervision and open communication with parents about online experiences can create healthier digital habits and reduce risks associated with excessive use. They can provide advice on using social media appropriately, regulate screen time, and encourage offline activities (Odgers et al.). Coping strategies that emphasize active problem-solving, in which individuals directly address the source of their issues, along with social support, are more effective than avoidance or withdrawal, particularly in managing depressive symptoms (Seiffge-Krenke et al.).

Social Comparison Theory provides an explanatory framework for understanding how social media influences adolescent well-being. The social comparison theory claims that people make judgments about their own and other people's worth, which is particularly relevant in the context of social media. Adolescents frequently evaluate themselves against specific idealized portrayals on platforms such as Instagram and TikTok, which can distort self-perception and exacerbate feelings of inadequacy. While upward comparison often undermines well-being, adolescents with higher self-esteem often engage with social media to strengthen their sense of identity and sustain relationships (Hammond et al.). This contrast clarifies the complexity of social media's role in shaping adolescent mental health and highlights the importance of context-specific strategies.

Conclusion

This literature review explored the intersection of social media use, adolescent depression, and interpersonal relationships, emphasizing both the constructive and destructive dimensions of digital engagement. Social networking sites can provide support and visibility, yet excessive or maladaptive use has been linked to loneliness, cyberbullying, and diminished self-esteem (Wu et al.; Pagliaccio et al.). These digital risks interact directly with biological and environmental vulnerabilities, such as genetic predispositions, early life stress, maltreatment, and nutritional factors, to increase overall susceptibility to depression (Singh et al.; Cairns et al.).

Gender differences also play a role in depression, with adolescent girls showing higher depressive symptoms. Addressing depression requires various methods and an understanding of gender differences, allowing for gender-specific treatments and investigations (Seiffge-Krenke et al.; Siongers et al.). Furthermore, social media also provides representation and support for marginalized communities, but at the same time can expose them to discrimination, harassment, and pressures to conform (Eickers and Rath; Odgers et al.). These findings represent the importance of inclusive digital environments and of forming educational measures that promote digital literacy and resilience.

In summary, this literature review emphasizes how social media is neither inherently harmful nor inherently beneficial. Its effects on adolescent depression and relationships heavily rely on the quality of engagement, individual vulnerabilities, and sociocultural context. In order to reduce risks and draw on its advantages, interventions should involve parents, educators, and policymakers to create healthier digital practices, promote respectful online interactions, and support adolescents through counseling and peer networks (Odgers et al.).

Ultimately, synthesizing biological, psychological, and sociocultural perspectives paves the way for target-specific interventions that protect adolescent safety and well-being while recognizing the growing role of digital technologies in shaping interpersonal relationships.

Works Cited

Beyens, Ine, et al. “The Effect of Social Media on Well-Being Differs from Adolescent to Adolescent.” Scientific Reports, vol. 10, July 2020, p. 10763, https://doi.org/10.1038/s41598-020-67727-7.

Butler, Brian S., and Sabine Matook. “Social Media and Relationships.” The International Encyclopedia of Digital Communication and Society, 11 Feb. 2015, pp. 1–12, www.researchgate.net/profile/Sabine-Matook/publication/263325419_Social_Media_and_Relationships/links/5b15fa0e4585151f91fb0e2d/Social-Media-and-Relationships.pdf, https://doi.org/10.1002/9781118767771.wbiedcs097.

Cairns, Kathryn Elizabeth, et al. “Risk and Protective Factors for Depression That Adolescents Can Modify: A Systematic Review and Meta-analysis of Longitudinal Studies.” Journal of Affective Disorders, vol. 169, Aug. 2014, pp. 61–75. https://doi.org/10.1016/j.jad.2014.08.006.

"Depression Linked to Social Media Twice as High Among Girls." UCL News, University College London, 4 Jan. 2019, www.ucl.ac.uk/news/2019/jan/depression-linked-social-media-twice-high-among-girls-0.

Dienlin, Tobias, and Niklas Johannes. “The Impact of Digital Technology Use on Adolescent Well-being.” Dialogues in Clinical Neuroscience, vol. 22, no. 2, June 2020, pp. 135–42. https://doi.org/10.31887/dcns.2020.22.2/tdienlin.

Eickers, Gen, and Matthias Rath. “Digital Change and Marginalized Communities: Changing Attitudes towards Digital Media in the Margins.” PhilPapers.org, 2021, philpapers.org/rec/EICDCA-2.

Hammond, Wayne A., and David M. Romney. “Cognitive Factors Contributing to Adolescent Depression.” Journal of Youth and Adolescence, vol. 24, no. 6, Dec. 1995, pp. 667–83, https://doi.org/10.1007/bf01536950.

Keles, Betul, et al. “A Systematic Review: The Influence of Social Media on Depression, Anxiety and Psychological Distress in Adolescents.” International Journal of Adolescence and Youth, vol. 25, no. 1, 21 Mar. 2020, pp. 79–93, https://doi.org/10.1080/02673843.2019.1590851.

Lenhart, Amanda. “Teens, Technology and Friendships.” Pew Research Center, 6 Aug. 2015, www.pewresearch.org/internet/2015/08/06/teens-technology-and-friendships/.

Nesi, Jacqueline, et al. “Transformation of Adolescent Peer Relations in the Social Media Context: Part 1—a Theoretical Framework and Application to Dyadic Peer Relationships.” Clinical Child and Family Psychology Review, vol. 21, no. 3, 7 Apr. 2018, pp. 267–294, link.springer.com/article/10.1007/s10567-018-0261-x, https://doi.org/10.1007/s10567-018-0261-x.

Nivins, Samson, et al. “Long-Term Impact of Digital Media on Brain Development in Children.” Scientific Reports, vol. 14, no. 1, 6 June 2024, p. 13030, www.nature.com/articles/s41598-024-63566-y?_gl=1, https://doi.org/10.1038/s41598-024-63566-y.

Odgers, Candice L., et al. “Screen Time, Social Media Use, and Adolescent Development.” Annual Review of Developmental Psychology, vol. 2, no. 1, 12 Oct. 2020, pp. 485–502, www-annualreviews-org.ez.library.latrobe.edu.au/content/journals/10.1146/annurev-devpsych-121318-084815, https://doi.org/10.1146/annurev-devpsych-121318-084815.

Pagliaccio, David, et al. “Probing the Digital Exposome: Associations of Social Media Use Patterns with Youth Mental Health.” NPP—Digital Psychiatry and Neuroscience, vol. 2, no. 1, 23 Apr. 2024, pp. 1–10, www.nature.com/articles/s44277-024-00006-9, https://doi.org/10.1038/s44277-024-00006-9.

Pérez-Torres, Vanesa. “Social Media: A Digital Social Mirror for Identity Development during Adolescence.” Current Psychology, vol. 43, no. 26, 24 Apr. 2024, pp. 22170–22180, link.springer.com/article/10.1007/s12144-024-05980-z, https://doi.org/10.1007/s12144-024-05980-z.

Pfeifer, Jennifer H., and Nicholas B. Allen. “Puberty Initiates Cascading Relationships between Neurodevelopmental, Social, and Internalizing Processes across Adolescence.” Biological Psychiatry, vol. 89, no. 2, Sept. 2020, www.sciencedirect.com/science/article/abs/pii/S0006322320319053, https://doi.org/10.1016/j.biopsych.2020.09.002.

Schemer, Christian, et al. “The Impact of Internet and Social Media Use on Well-Being: A Longitudinal Analysis of Adolescents Across Nine Years.” Journal of Computer-Mediated Communication, vol. 26, no. 1, Oct. 2020, pp. 1–21. https://doi.org/10.1093/jcmc/zmaa014.

Seiffge-Krenke, Inge, and Mark Stemmler. “Factors Contributing to Gender Differences in Depressive Symptoms: A Test of Three Developmental Models.” Journal of Youth and Adolescence, vol. 31, no. 6, Dec. 2002, pp. 405–417, https://doi.org/10.1023/a:1020269918957.

Senekal, Janine S, et al. “Social Media and Adolescent Psychosocial Development: A Systematic Review.” South African Journal of Psychology, vol. 53, no. 2, 24 Aug. 2022, journals.sagepub.com/doi/10.1177/00812463221119302, https://doi.org/10.1177/00812463221119302.

Singh, Manpreet K, et al. “Genetics, Epigenetics, and Neurobiology of Childhood-Onset Depression: An Umbrella Review.” Molecular Psychiatry, vol. 29, no. 3, 15 Dec. 2023, pp. 553–565, https://doi.org/10.1038/s41380-023-02347-x.

Siongers, Jessy, and Bram Spruyt. “Navigating the Social Media Seas: Understanding the Complex Relationship between Social Media Use and Adolescent Well-Being.” Child Indicators Research, 25 Oct. 2023, https://doi.org/10.1007/s12187-023-10080-8.

Smailhodzic, Edin, et al. “Social Media Use in Healthcare: A Systematic Review of Effects on Patients and on Their Relationship with Healthcare Professionals.” BMC Health Services Research, vol. 16, no. 1, 26 Aug. 2016, pp. 1–14, bmchealthservres.biomedcentral.com/articles/10.1186/s12913-016-1691-0, https://doi.org/10.1186/s12913-016-1691-0.

Spies Shapiro, Lauren A., and Gayla Margolin. “Growing up Wired: Social Networking Sites and Adolescent Psychosocial Development.” Clinical Child and Family Psychology Review, vol. 17, no. 1, 4 May 2014, pp. 1–18, www.ncbi.nlm.nih.gov/pmc/articles/PMC3795955/, https://doi.org/10.1007/s10567-013-0135-1.

Valkenburg, Patti M., et al. “Social Media Use and Its Impact on Adolescent Mental Health: An Umbrella Review of the Evidence.” Current Opinion in Psychology, vol. 44, Aug. 2022, pp. 58–68, https://doi.org/10.1016/j.copsyc.2021.08.017.

Wu, Yi-Ju, et al. “A Systematic Review of Recent Research on Adolescent Social Connectedness and Mental Health with Internet Technology Use.” Adolescent Research Review, vol. 1, no. 2, 2 Aug. 2015, pp. 153–162, link.springer.com/article/10.1007/s40894-015-0013-9, https://doi.org/10.1007/s40894-015-0013-9.

From Story Immersion to Perspective-Taking: A Conceptual Review of Reflective Fiction Reading in Young Adults By Utkarsh Puri

Abstract

Fiction is often presumed to cultivate empathy, yet experimental and correlational findings do not support a simple causal claim. This integrative conceptual review examines how narrative transportation, character identification, emotional simulation, perspective-taking, and post-reading reflection may interact in readers aged approximately sixteen to twenty-five. It synthesises foundational theory, experiments, replications, meta-analytic evidence, and recent work on dialogic and reflective reading. The evidence suggests that narrative engagement can provide practice in representing unfamiliar minds, but effects vary with reader characteristics, textual features, outcome measures, and reading context. Brief exposure to literary fiction has not reliably improved Theory of Mind across replications, while lifetime reading and socially focused engagement show small, heterogeneous associations with social cognition. The paper therefore proposes a Reflective Narrative Engagement Framework in which reflection is not a novel activity by itself, but an explicit and testable conversion mechanism between narrative experience and later perspective-taking. Four propositions specify moderated relationships among the framework's stages. The model reframes fiction as an opportunity for empathic practice rather than an automatic empathy intervention and identifies priorities for longitudinal and cross-cultural research with young-adult samples.

Keywords: fiction reading; narrative transportation; empathy; perspective-taking; Theory of Mind; reflection

Introduction

Reading fiction recruits attention, imagery, emotion, and inferences about characters. These processes make narrative a plausible setting for practising how other people think and feel. They do not, however, justify the popular claim that fiction automatically makes readers more empathic. Empathy itself includes partly separable capacities: affective resonance or concern, cognitive understanding of another viewpoint, and the mental-state inference often studied as Theory of Mind (Denham; Keen). A reader may feel for a character without accurately understanding that character, or infer a motive without experiencing empathic concern.

The distinction matters for young adults. This review uses young adults as a practical developmental range of approximately sixteen to twenty-five, spanning late adolescence and emerging adulthood. This is not a claim that all cited studies use that range. Evidence drawn from children or general adult samples is identified as indirect when it informs a mechanism but cannot establish an age-specific effect. Developmental theories describe emerging adulthood as a period of exploration in identity, relationships, and worldviews, making encounters with unfamiliar perspectives potentially relevant while also cautioning against treating the group as homogeneous (Arnett).

Narrative transportation provides one starting point. Green and Brock define it as absorption in a story through focused attention, mental imagery, and emotion. Transportation may reduce counterarguing and increase openness to narrative information, and experimental work has linked story transportation with empathy and prosocial responses; neither finding makes openness equivalent to empathy (Johnson). Character identification and emotional simulation may then bring a represented viewpoint closer to the reader. Whether those temporary states become durable perspective-taking remains uncertain.

This paper asks: How might reflective engagement with fiction influence narrative transportation, empathy, and perspective-taking in young adults? It argues that narrative effects are conditional. The principal contribution is not the invention of reflection, which is already present in literary-response and educational research, but its placement as an explicit, testable mechanism that may connect a narrative experience with subsequent perspective-taking. The resulting Reflective Narrative Engagement Framework integrates five processes while specifying reader, text, and context as moderators.

Review Design and Scope

This paper is an integrative conceptual review rather than a systematic review or meta-analysis. It combines empirical and theoretical research from narrative psychology, social cognition, literary studies, developmental psychology, and education. Source discovery was conducted through Google Scholar and Crossref, followed by targeted searches and bibliographic verification on publisher platforms, including APA PsycNet, Frontiers, PLOS, Science, Taylor & Francis, and De Gruyter. Search combinations paired fiction or literary fiction with empathy, perspective-taking, Theory of Mind, narrative transportation, character identification, emotional simulation, dialogic reading, guided reflection, adolescents, emerging adults, and young adults. Sources were retained when they defined a core construct, tested a relevant association or intervention, replicated a prominent finding, synthesised prior evidence, or directly examined reflection or discussion around narrative. Priority was given to peer-reviewed work, recent syntheses, null or contradictory evidence, and studies involving adolescents, university students, or other emerging-adult samples. Studies involving children or undifferentiated adult samples were used only to clarify mechanisms or boundary conditions. Non-academic commentary, language-learning-only outcomes, and claims without an identifiable research design were excluded.

Because this review employed an iterative, concept-led search rather than a preregistered systematic-review protocol, it does not report a PRISMA flow diagram or claim exhaustive coverage. Findings were therefore synthesised according to exposure type, sample, outcome, research design, contradictory evidence, developmental relevance, and the role of reflection. Findings were compared by exposure type, sample, outcome, design strength, contradiction, developmental relevance, and the role of reflection.

Evidence group	Role in the review	Interpretive caution
Foundational theory	Defines transportation, narrative empathy, simulation, and reflection.	Conceptual plausibility is not causal evidence.
Experiments and replications	Tests short-term effects of narrative exposure.	Results depend on texts, tasks, controls, and statistical power.
Correlational and meta-analytic work	Examines reading history and social-cognitive outcomes.	Self-selection and verbal ability can confound associations.
Dialogic or reflective reading	Tests discussion, prompts, or reflection around stories.	Much evidence involves children or specialised classrooms.
Young-adult evidence	Assesses direct relevance to the defined age range.	The age-specific evidence base remains comparatively small.

Evidence Synthesis

Transportation, Identification, and Simulation

Transportation describes entry into a story world, not a guaranteed moral outcome. Green and Brock showed that transported readers can become more responsive to narrative-consistent beliefs. Bal and Veltkamp later reported that emotional transportation conditioned changes in self-reported empathy after fiction reading. These findings support engagement as a possible prerequisite, while work on narrative absorption further shows why absorption must be separated from later social-cognitive outcomes (Calarco et al.). They do not establish that absorption alone improves how readers understand real people. A reader can be intensely absorbed by a narrative that reinforces stereotypes or centres only on familiar viewpoints.

Identification narrows attention toward a character's goals and emotions, while simulation allows readers to model social situations without bearing their real-world consequences. Mar and colleagues found different associations between fiction and nonfiction exposure and social ability, and later work linked fiction exposure with empathy after accounting for several individual differences (Mar et al., "Bookworms"; Mar et al., "Exploring"). The SPaCEN framework explains these patterns by proposing that narratives engage both social processes and social content (Mar, "Evaluating"). Still, observational associations cannot show whether reading changes social cognition or socially perceptive people choose more fiction. Narrative perspective also matters. Wimmer and colleagues found that perspective, transportation, and identification shape social and moral responses, illustrating why "fiction" is too broad an intervention category. Character complexity, narrative voice, genre expectations, cultural distance, and prior knowledge can each alter the experience. Kucirkova similarly argues that identification across in-group and out-group boundaries and the quality of language are central to how storybooks might support empathy. Although her framework concerns children, it clarifies text-level mechanisms relevant to older readers.

Theory of Mind: Prominent Findings and Replication Limits

Kidd and Castano reported that brief exposure to literary fiction improved performance on Theory of Mind tasks. The finding attracted attention because literary characters often require

readers to tolerate ambiguity and infer unstated motives. Experimental comparisons of reading materials nevertheless suggest that effects vary by text and by the social or non-social outcome measured (Black and Barnes). Panero and colleagues, however, did not find robust support across replication attempts and showed that lifetime fiction exposure may be more informative than a single passage. The disagreement demonstrates how easily conclusions can depend on stimulus selection, comparison conditions, and the reliability of mentalising measures.

Two meta-analytic perspectives make the balanced conclusion clearer. Mumper and Gerrig found a small positive association between leisure reading and social cognition, whereas Dodell-Feder and Tamir concluded that fiction reading produces a small cognitive benefit while stressing heterogeneity and design limitations. Small average effects are compatible with meaningful benefits for some readers and no benefit for others. They also make deterministic educational claims inappropriate.

The construct distinction is equally important. Theory of Mind tasks assess mental-state inference, not necessarily compassion, prosocial action, or reduced prejudice. A reader can become more skilled at interpreting a character without becoming more willing to care for an out-group member. This review therefore treats mentalising, cognitive perspective-taking, and affective empathy as related but non-interchangeable outcomes.

Reflection and Dialogic Engagement

The framework's reflection component is supported most directly by research that treats reading as an interaction rather than a one-time exposure. Koopman and Hakemulder place self-reflection alongside empathy in their theoretical-empirical framework. Sopcak and colleagues further distinguish existential reflection from simple absorption and report that reflective responses can connect literature with moral outcomes. These studies do not prove that every prompt improves empathy; they suggest that interpretive work after or during reading deserves separate measurement.

Dialogic reading offers a concrete pathway. Rogoski and Pfeiffer-Flores examined guided, open-ended discussion around stories with children and observed increased expressions of interpersonal and literary empathy. The small child sample limits generalisation to young adults, but the study shows how questions about motives, narrative functions, and social context can externalise perspective-taking. Shared reading research likewise indicates that mental-state talk and discussion can mediate social-emotional learning rather than leaving the text to work alone (Schapira et al.).

Cross-cultural evidence is especially relevant because perspective-taking should not be inferred only from Western literary settings. Qi and colleagues found that emotional investment and cultural empathy mediated the relationship between exposure to foreign literature and out-group attitudes among Chinese participants. The study broadens the cultural context but remains specific to its sample and measures. Together, these findings justify reflection as a plausible moderator or mediator, while also revealing that direct experiments with readers aged sixteen to twenty-five remain scarce.

Young-Adult Relevance and Boundary Conditions

Evidence directly focused on adolescents is mixed. Lenhart, Dangel, and Richter examined lifetime book reading and empathy in adolescents and showed that transportability and other individual differences complicate the association. Price similarly warns that educational claims about young adult literature require precise definitions and stronger evidence. These sources are more relevant to the defined population than general adult studies, yet they do not support a universal developmental effect.

Four boundary conditions recur across the evidence. First, readers differ in openness, motivation, prior empathy, verbal ability, and reading history. Second, texts differ in complexity, viewpoint, cultural distance, and capacity to reproduce harmful stereotypes. Third, measures distinguish immediate self-report, task performance, durable attitude change, and behaviour. Fourth, context differs: private reading, assessed classroom discussion, voluntary book groups, and structured reflective writing are not equivalent exposures. Any model that ignores these differences turns a conditional opportunity into an overstatement.

Critical Synthesis and Research Gap

The literature supports neither the claim that fiction is irrelevant to empathy nor the claim that it is an automatic empathy machine. Narrative engagement can rehearse attention to other minds, but evidence is heterogeneous and often indirect for young adults. Brief literary exposure, lifetime habits, classroom interventions, and dialogic reading answer different questions. Their outcomes should not be collapsed into one effect.

Existing frameworks explain important parts of the pathway. Transportation theory accounts for absorption; narrative empathy theory maps affective and cognitive response; SPaCEN specifies social processes and content; and Koopman and Hakemulder connect literature with empathy and self-reflection. The unresolved problem is operational: reflection is often mentioned as an outcome or pedagogical practice but less often modelled as a measured process that changes the relationship between engagement and subsequent perspective-taking. The proposed framework addresses this integration gap. It does not claim that its ingredients are new. Its contribution is the sequence, explicit moderators, and testable propositions.

The age gap is equally important. Many influential studies use general adult samples, children, or samples not reported in a way that permits a sixteen-to-twenty-five subgroup analysis. A framework for young adults must therefore label developmental extrapolation and generate studies that directly recruit late-adolescent and emerging-adult participants across cultures.

Reflective Narrative Engagement Framework

The Reflective Narrative Engagement Framework proposes five analytically distinct processes. Narrative transportation focuses attention and imagery on the story world. Character identification temporarily aligns the reader with a represented viewpoint. Emotional simulation models the character’s affective and social situation. Perspective-taking involves a more

deliberate attempt to understand motives, constraints, and beliefs. Post-reading reflection compares that represented perspective with the reader's assumptions and possible real-world analogues.

The stages are not a guaranteed linear ladder. Readers may move backward, skip a stage, identify critically rather than sympathetically, or reject a viewpoint. Reflection can also expose stereotyping or manipulation in a text instead of reinforcing its moral message. Reader, text, and context variables moderate every link. This makes the framework falsifiable: weak or null relationships are expected when engagement is shallow, characters are stereotyped, prompts reward summary rather than inquiry, or outcome measures capture a different construct.

Framework	Primary emphasis	Relationship to the present model
Transportation theory	Attention, imagery, and emotional absorption.	Explains entry into a narrative but not durable social understanding.
Narrative empathy	Affective and cognitive responses to represented experience.	Clarifies empathic response without requiring a reflective conversion stage.
SPaCEN	Social processes and social content engaged by narrative.	Explains social-cognitive activation; reflection is not the final explicit mechanism.
Koopman-Hakemulder	Empathy and self-reflection effects of literature.	Closest precursor; establishes reflection as relevant to literary response.
RNE Framework	Transportation, identification, simulation, perspective-taking, reflection.	Specifies a moderated sequence and makes reflection separately testable.

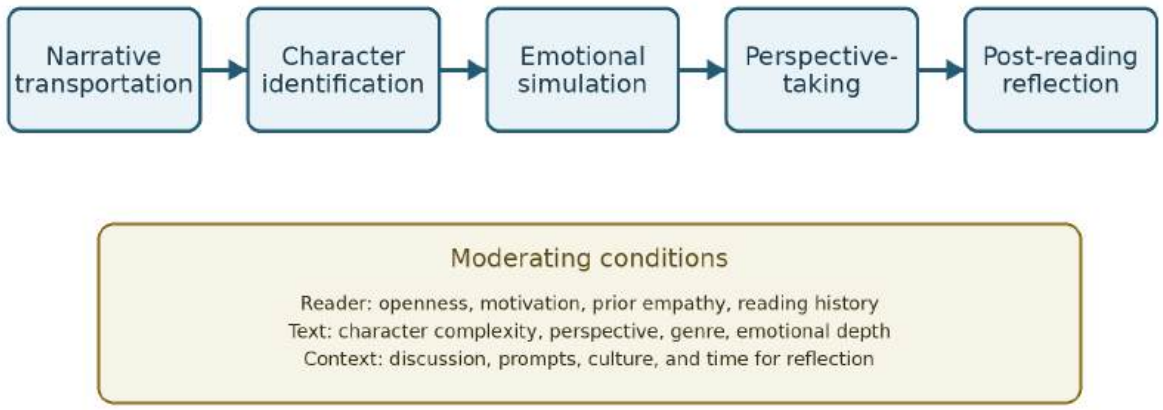


Figure 1. Reflective Narrative Engagement Framework and moderating conditions.

Testable Propositions

1. P1. Narrative transportation will predict character identification more strongly when a text presents psychologically complex characters and the reader is motivated to engage.
2. P2. Character identification will predict cognitive perspective-taking more consistently when it involves simulation of motives and constraints rather than character liking alone.
3. P3. Structured post-reading reflection will strengthen the relationship between narrative engagement and subsequent perspective-taking relative to unprompted reading.
4. P4. Associations between fiction reading and empathy will vary by outcome type, with smaller and less consistent effects for durable behaviour than for immediate self-report.

Research and Educational Implications

The framework suggests a factorial research design comparing text type and reflection condition. Participants aged sixteen to twenty-five could be randomly assigned to read the same narrative with either structured perspective-taking prompts, factual-comprehension prompts, or no prompts. Preregistered outcomes should separately measure transportation, identification, cognitive perspective-taking, affective concern, delayed recall, and a behavioural indicator. Follow-up assessment would test whether any change lasts beyond the immediate session.
Education should use the model as a hypothesis, not a promise. Useful prompts ask readers to distinguish a character's intentions from consequences, identify contextual pressures, compare interpretations, and examine how narrative voice shapes judgement. Discussion must also permit criticism of a text's stereotypes and omissions. Reading lists should not burden marginalised narratives with the expectation that they will automatically reform readers.
Cross-cultural and longitudinal research is a priority. Samples should report age bands precisely, test measurement equivalence, and distinguish voluntary reading from assigned reading. Open materials and transparent reporting would make contradictory findings easier to interpret.

Limitations

This is an integrative, concept-led review and not an exhaustive systematic review. The absence of a complete contemporaneous screening log prevents a defensible record count and may introduce selection bias. The evidence spans different populations, genres, exposure lengths, and measures, so it cannot support a pooled effect estimate.

The review's young-adult focus exceeds the direct age specificity of much of the literature. Findings from children and general adults clarify mechanisms but cannot establish effects for readers aged sixteen to twenty-five. Reflection is also the framework's least extensively tested stage in this population. Its placement is theoretically grounded, but its causal and temporal role requires direct comparison with non-reflective conditions.

Finally, empathy is not inherently accurate or prosocial. Identification can remain selective, emotion can coexist with stereotyping, and perspective-taking skills can be used strategically. Future studies should therefore measure accuracy, bias, and behaviour alongside self-reported empathy.

Conclusion

Fiction can provide a psychologically rich setting for encountering unfamiliar minds, but its social value depends on what readers, texts, and contexts bring to the encounter. Transportation, identification, and emotional simulation are plausible mechanisms; evidence for immediate Theory of Mind gains is mixed, and associations with lifetime reading are generally small and vulnerable to selection effects. The Reflective Narrative Engagement Framework places post-reading reflection as an explicit, testable link between narrative experience and later perspective-taking. Its contribution is integrative rather than proprietary: it organises established processes into propositions that can be challenged through age-specific, cross-cultural, and longitudinal research. Fiction should therefore be understood as an opportunity for empathic practice, not as proof of empathic change.

Works Cited

Arnett, Jeffrey Jensen. "Emerging Adulthood: A Theory of Development from the Late Teens through the Twenties." American Psychologist, vol. 55, no. 5, 2000, pp. 469-480. https://doi.org/10.1037/0003-066X.55.5.469.

Bal, P. Matthijs, and Martijn Veltkamp. "How Does Fiction Reading Influence Empathy? An Experimental Investigation on the Role of Emotional Transportation." PLOS ONE, vol. 8, no. 1, 2013, article e55341. https://doi.org/10.1371/journal.pone.0055341.

Black, Jessica, and Jennifer L. Barnes. "The Effects of Reading Material on Social and Non-Social Cognition." Poetics, vol. 52, 2015, pp. 32-43. https://doi.org/10.1016/j.poetic.2015.07.001.

Calarco, Nicole, et al. "Absorption in Narrative Fiction and Its Possible Impact on Social Abilities." Narrative Absorption, edited by Frank Hakemulder et al., John Benjamins, 2017, pp. 293-313. https://doi.org/10.1075/lal.27.15cal.

Denham, Alice E. "Empathy and Literature." Emotion Review, 2024. https://doi.org/10.1177/17540739241233601.

Dodell-Feder, David, and Diana I. Tamir. "Fiction Reading Has a Small Positive Impact on Social Cognition: A Meta-Analysis." Journal of Experimental Psychology: General, vol. 147, no. 11, 2018, pp. 1713-1727. https://doi.org/10.1037/xge0000395.

Green, Melanie C., and Timothy C. Brock. "The Role of Transportation in the Persuasiveness of Public Narratives." Journal of Personality and Social Psychology, vol. 79, no. 5, 2000, pp. 701-721. https://doi.org/10.1037/0022-3514.79.5.701.

Johnson, Dan R. "Transportation into a Story Increases Empathy, Prosocial Behavior, and Perceptual Bias toward Fearful Expressions." Personality and Individual Differences, vol. 52, no. 2, 2012, pp. 150-155. https://doi.org/10.1016/j.paid.2011.10.005.

Keen, Suzanne. "A Theory of Narrative Empathy." Narrative, vol. 14, no. 3, 2006, pp. 207-236.

Kidd, David Comer, and Emanuele Castano. "Reading Literary Fiction Improves Theory of Mind." Science, vol. 342, no. 6156, 2013, pp. 377-380. https://doi.org/10.1126/science.1239918.

Koopman, Emy M., and Frank Hakemulder. "Effects of Literature on Empathy and Self-Reflection: A Theoretical-Empirical Framework." Journal of Literary Theory, vol. 9, no. 1, 2015, pp. 79-111. https://doi.org/10.1515/jlt-2015-0005.

Kucirkova, Natalia. "How Could Children's Storybooks Promote Empathy? A Conceptual Framework Based on Developmental Psychology and Literary Theory." Frontiers in Psychology, vol. 10, 2019, article 121. https://doi.org/10.3389/fpsyg.2019.00121.

Lenhart, Jan, et al. "The Relationship between Lifetime Book Reading and Empathy in Adolescents: Examining Transportability as a Moderator." Psychology of Aesthetics, Creativity, and the Arts, vol. 16, no. 4, 2022, pp. 679-693. https://doi.org/10.1037/aca0000341.

Mar, Raymond A. “Evaluating Whether Stories Can Promote Social Cognition: Introducing the Social Processes and Content Entrained by Narrative (SPaCEN) Framework.” Discourse Processes, vol. 55, nos. 5-6, 2018, pp. 454-479. https://doi.org/10.1080/0163853X.2018.1448209.

Mar, Raymond A., et al. “Bookworms versus Nerds: Exposure to Fiction versus Nonfiction, Divergent Associations with Social Ability, and the Simulation of Fictional Social Worlds.” Journal of Research in Personality, vol. 40, no. 5, 2006, pp. 694-712. https://doi.org/10.1016/j.jrp.2005.08.002.

Mar, Raymond A., et al. “Exploring the Link between Reading Fiction and Empathy: Ruling Out Individual Differences and Examining Outcomes.” Communications, vol. 34, no. 4, 2009, pp. 407-428. https://doi.org/10.1515/COMM.2009.025.

Mumper, Micah L., and Richard J. Gerrig. “Leisure Reading and Social Cognition: A Meta-Analysis.” Psychology of Aesthetics, Creativity, and the Arts, vol. 11, no. 1, 2017, pp. 109-120. https://doi.org/10.1037/aca0000089.

Panero, Maria Eugenia, et al. “Does Reading a Single Passage of Literary Fiction Really Improve Theory of Mind? An Attempt at Replication.” Journal of Personality and Social Psychology, vol. 111, no. 5, 2016, pp. e46-e54. https://doi.org/10.1037/pspa0000064.

Price, Michelle D. “Young Adult Literature and Empathy.” English in Texas, vol. 53, no. 1, 2023, pp. 45-50.

Qi, Zhaokun, et al. “The Influence of Exposure to Foreign Literature on Chinese University Students’ Attitudes toward Out-Groups: The Mediating Roles of Emotional Investment and Cultural Empathy.” Frontiers in Psychology, vol. 16, 2025, article 1589631. https://doi.org/10.3389/fpsyg.2025.1589631.

Rogoski, Bianca da Nóbrega, and Eileen Pfeiffer-Flores. “Experiences of Empathy and Literary Empathy between Children Using the LuDiCa (Dialogic Reading for Deep Comprehension).” Frontiers in Psychology, vol. 16, 2025, article 1725818. https://doi.org/10.3389/fpsyg.2025.1725818.

Schapira, Rotem, et al. “Shared Book Reading and Promoting Social and Emotional Competencies in Young Children: A Systematic Review and Meta-Analysis.” Frontiers in Psychology, vol. 16, 2025, article 1622536. https://doi.org/10.3389/fpsyg.2025.1622536.

Sopcak, Paul, et al. “Existential Reflection and Morality.” Frontiers in Communication, vol. 7, 2022, article 991774. https://doi.org/10.3389/fcomm.2022.991774.

Wimmer, Lena, et al. “Reading Fictional Narratives to Improve Social and Moral Cognition: The Influence of Narrative Perspective, Transportation, and Identification.” Frontiers in Communication, vol. 5, 2021, article 611935. https://doi.org/10.3389/fcomm.2020.611935.

Author Declaration

The author reports no funding and no conflict of interest. This review collected no primary human-participant data.

Administrative Formality: How Britain Turned Partition into Catastrophe
By Oscar Ooi

The Partition of India in 1947 was one of the most violent and chaotic events of the 20th century. As British rule ended, India was divided into two countries, India and Pakistan. Partition caused millions to migrate from one place to another due to religious beliefs, and millions lost their lives due to violence, starvation, and diseases. People say this bloodshed is because of the long-standing rivalry between Hindus and Muslims. While this is partly true, it is important to remember how the British created this rivalry. The extreme violence and mass displacement during the Partition of India were not the result of long-standing religious tensions, but were the result of British policies, a rushed transfer of power that prioritized colonial withdrawal over stability, and a failure to plan borders or security adequately.

The Partition of India was not a meticulous process but an executive decision made by the British with little regard for the people it affected. The Indian Independence Act of 1947 legally established the two new states, declaring that "as from August 15, 1947, two independent Dominions shall be set up in India, to be known respectively as India and Pakistan" ("Indian Independence Act"). This single sentence, enacted thousands of miles away in London, determined the fate of hundreds of millions of people. The Act also fixed a single date, referred to as "the appointed day," leaving almost no leeway in terms of time for preparation, security planning, or organized migration ("Indian Independence Act"). The most damaging was the ambiguity in the act itself, which allowed for future territorial changes, meaning borders were not even finalized after independence ("Indian Independence Act"). This uncertainty fueled the Kashmir dispute and other long-running conflicts between India and Pakistan that still persist to this day. The fact that Partition was decided by British officials without consulting the people at a local level demonstrates that the British treated it as an administrative procedure rather than the humanitarian crisis it became.

The British system of governing in India was not designed to create peace and stability among Indians but was focused on staying in power and distancing themselves from the Indian population. As Stuart Roberts explained, "The British sought to maintain a careful distance from most Indians, sheltering in 'white towns,' clubs, and cantonments" (Roberts). This created a relationship of distrust between the two populations, and as a result, the British government was not effective in dealing with Indian politics and social issues. Roberts wrote, "British colonial power represented itself through theatrical rituals of power such as the durbar and grandiose monuments of Lutyens' Delhi" (Roberts). Durbar ceremonies were staged events where the British acted as rulers, receiving obedience from Indian princes and officials. Lutyens' Delhi was the grand capital where massive imperial buildings represented their power over the Indians. These displays of power showed how the British created a relationship based on power dynamics rather than trust, separating themselves from the Indian population. Therefore, the British system was not effective in dealing with widespread unrest.

Beyond unrest within India, the global economic state of the 1930s weakened the British government and made the eventual Partition even more chaotic. The Great Depression caused economic issues across the British Empire. In Malaya, indentured laborers were sent back to India when demand for rubber dropped, and even European plantation owners were unable to afford the cost of returning home. Bengal's export-dependent industry was badly damaged as global markets crashed (Keay). This economic collapse caused social hardship across India, increased unemployment, and worsened existing inequalities. When ordinary people are economically struggling, they become more susceptible to political fear, and religious identity becomes an easier target for violence. The Great Depression also weakened confidence inside of the British government because Britain could not protect the Indian economy during the global crisis. This added further motivation to nationalist movements and made the British withdrawal more likely.

Even as the British economy declined, decision-making consistently excluded Indian political organizations' input, creating distance between the British and Indian populations. This increased distrust and political instability. Major decisions about India's future were often made without the input of Indian leaders. For instance, when World War II began, the British government decided on India's involvement in the war without Indian leaders' consent ("The Partition of India"). Actions like this created the idea that Indians had little control over their own political future. Given the chaos created by British rule, British officials often relied on a group of elites to control small areas instead of democratic rule, which created more chaos after the withdrawal. Princes, landlords, and chiefs were seen as the muscle of British rule in this era, and the British carefully gained their loyalty with money and power (Roberts). This strategy strengthened British control but created a political system that only represented the British. When the British decided they would withdraw from India, these exclusive political structures made it much harder to manage tensions and foster a peaceful transition of power.

Making the transfer of power more chaotic, British policies made ethnic divisions worse by combining religion and politics. Religious tension between Hindus and Muslims already existed before British rule because of different views, but the British worsened these differences by associating Muslims and Hindus with a distinct political representation (Pate). This made people think in terms of political sides instead of one united country. Because muslims were often the minority in regions, they would not have the same amount of representation and power as Hindus, which led to religion becoming associated with power. That imbalance created extreme resentment between each other. Instead of creating unity, the British system forced people to compete against each other based on religion.

These religious differences were worsened by poorly drawn borders. The British quickly created new borders between India and Pakistan without fully understanding the people living there. Radcliffe was a British official with no experience and was put in charge of drawing the borders ("The Partition"). The borders between India and Pakistan were based on provinces, which are large regions created and governed by the British, instead of local communities, which were organized by villages and religion, which meant that families, villages, and businesses were

split apart (“The Partition of India”). People suddenly found themselves on the wrong side of the border. This created widespread panic, and many people began to leave their homes before they even knew where the borders would be. The uncertainty caused mass migration and increased violence because people feared that they would become minorities and targets in a country controlled by another religious group. Since the borders were not announced quickly enough, families fled their homes to avoid attacks. As millions of people moved at the same time, overcrowded refugee routes and trains became targets for violence and riots between religious groups. The poor planning of the British caused avoidable violence to occur.

All of these factors led to the British withdrawing without establishing a replacement government for India, allowing for more violence to ensue. The British did not put deep consideration into peace within India and instead prioritized leaving as quickly as possible. Clement Attlee, the British prime minister, announced that power would be transferred with only a few months' notice (“The Partition”), and this short timeline made it difficult to organize governments, create systems to create peace, or protect civilians. Because millions of people were suddenly being divided and forced to move because of their religion, they would be easy targets for violence and would need strong police or military protection from railway massacres and city riots, but they did not have any. People knew that major changes were coming, but they did not know what would happen to them. This created fear and uncertainty across India. Their negotiations with Indian leaders did not solve the conflict between the groups. Attempts to create agreements failed, which increased tension and forced India into independence without a clear plan (“The Partition”). At the same time, Indian leaders could not agree on how power should be distributed between religious groups (Pate). While Indian leaders played a role in the situation, the British still had the main responsibility because they created the political system that forced these conflicts to grow. When negotiations failed, the British did not stay to help fix the problem. They withdrew quickly, causing chaos.

One of the most overlooked consequences of Britain's rushed withdrawal was the fate of over 500 semi-independent princely states that had operated under treaties with the British Crown. As Guha describes, once the British began giving power to provincial governments and planning a full withdrawal, the rulers of these states became anxious, uncertain whether they would be absorbed into India or Pakistan or retain any British protection at all (Guha). These governments, which included powerful states like Hyderabad, Kashmir, and Junagadh, had never been directly governed by Britain but legally had individual treaties with Britain. When Britain left, those treaties disappeared with no replacement. This created a void in large parts of the subcontinent where authority was suddenly undefined. Britain's failure to solidify the status of the princely states before leaving added another layer of instability to an already catastrophic transition, contributing to conflicts that would define South Asian geopolitics for decades.

The result of British decisions was extreme violence and mass displacement. The Partition became one of the largest forced migrations in history (Bhalla). Gangs of killers set entire villages on fire, killing men, children, and the elderly while kidnapping young women (Hajari). Soldiers and journalists who had witnessed Nazi concentration camps described the

Partition's violence as the worst they had ever seen (Hajari). More than 14 million people were forced to leave their homes (Bhalla). Estimates suggest that between two and three million people died from violence, starvation, disease, sexual violence, and suicide, making The Partition one of the deadliest forced migrations in history. This level of violence is the result of fallen order, missing security forces, and a government that prioritized its own departure over the safety of the people it had governed. The British decision to leave without creating any sort of protection for migration routes created the conditions for mass violence to become possible.

The British withdrawal caused long-term problems that pushed past 1947. The new borders created long-term conflict between India and Pakistan, overcrowded refugee camps, and almost broke fragile healthcare systems (Tanveer, Mathur, and Sarwal). These problems only occurred because the British departed without creating stability or solving major long-standing conflicts. The damage extended well beyond violence. The mass migration overwhelmed an already weak healthcare system, using up the small amount of medical services that had existed during the colonial period. Refugee camps were crowded and unsanitary, making the spread of disease faster and raising mortality rates, especially among children and the elderly (Tanveer, Mathur, and Sarwal). However, the most lasting consequence was psychological. All the mental trauma of losing one's home, witnessing extreme violence, and being forced to rebuild one's life in an unfamiliar country had devastating effects on individuals and on the health of entire communities. Migration and the refugee crisis limited community participation in health and social programs. This took away social networks that were essential for psychological recovery (Bhalla). Survivor testimonies of the Partition reveal this added another layer of suffering. This trauma did not end in 1947 but was passed down through families and communities, shaping the lives of people who were not even born during the Partition. The many British failures created psychological suffering and compounded it over generations.

The lack of attention from international powers makes the scale of this suffering even more striking. Despite a death toll reaching into the millions and the forced displacement of over fourteen million people, there was little support from international powers. The Indian subcontinent received almost zero meaningful aid from world leaders in the aftermath of Partition (Tanveer, Mathur, and Sarwal). It is a sharp contrast to the response of the international community to other crises taking place at the same time. Unlike the victims of WWII and the Holocaust, who got their due recognition and aid by international powers, partition victims received nothing (Tanveer, Mathur, and Sarwal 401). This shows how the British framed the partition. It was not a humanitarian crisis that needed international aid but merely a political transfer of power. By considering Partition as an administrative process and not an emergency, the British ensured that the endangering of millions of people would remain unattended to by international powers. The citizens of both India and Pakistan had to face the problems of partition alone.

The Partition of India was not an inevitable result of religious conflict but a catastrophe shaped by decades of British colonial mismanagement and a rushed, poorly planned withdrawal. British policies worsened religious divisions, drew arbitrary borders without local knowledge,

and left no safety measures to protect civilians during the transition. The human cost was devastating, with millions killed, displaced, and traumatized in ways that lasted generations. Ultimately, the people of India and Pakistan paid the price for decisions made by a government that prioritized its own withdrawal over others' safety, and the consequences of those decisions are still not fully resolved.

Works Cited

Bhalla, Guneeta. "The Story of the 1947 Partition as Told by the People Who Were There." National Endowment for the Humanities. https://www.neh.gov/article/story-1947-partition-told-people-who-were-there.

Gilmartin, David. "The Historiography of India's Partition: Between Civilization and Modernity." The Journal of Asian Studies 74, no. 1 (2015): 23–41. http://www.jstor.org/stable/43553642.

Hajari, Nisid. Midnight's Furies : the Deadly Legacy of India's Partition. Mariner Books, Houghton Mifflin Harcourt, 2016.

“Indian Independence Act, 1947.” Parliament of the United Kingdom. His Majesty's Stationery Office, 1947. https://www.legislation.gov.uk/ukpga/1947/30/pdfs/ukpga_19470030_en.pdf

Keay, John. India: a History: from the Earliest Civilisations to the Boom of the Twenty-first Century. Rev. and expanded ed ed. Grove Press : Distributed by Publishers Group West, 2010.

Nehru, Jawaharlal. "A Tryst with Destiny." Speech transcript, New Delhi, India, August 14, 1947.

"The Partition." Partition Museum. https://www.partitionmuseum.org/partition-of-india.

"The Partition of India." In Encyclopedia of Modern Asia, edited by Karen Christensen and David Levinson. Vol. 5. New York, NY: Charles Scribner's Sons, 2002. https://link.gale.com/apps/doc/CX3403702740/GVRL?u=tmka_ca&sid=bookmark-GVRL&xid=102fccbd.

Pate, Tanvi. "The Breakup of India and Palestine: The Causes and Legacies of Partition." International Affairs 100, no. 2 (2024): 847–49. https://doi.org/10.1093/ia/iiae033.

Roberts, Stuart. "A Tryst with Destiny." University of Cambridge. Last modified October 17, 2017. https://www.cam.ac.uk/stories/tryst-with-destiny.

Tanveer, Tuba, Nixon Mathur, and Rakesh Sarwal. "Catastrophic Impact of 1947 Partition of India on People'S Health." Journal of Family Medicine and Primary Care 13, no. 2 (2024): 401. Accessed January 9, 2026. https://doi.org/10.4103/jfmpc.jfmpc_985_23

The Impact of Divorce on Children's Emotional and Neurological Development: Mediating Factors and Developmental Outcomes By Rowan Mandia

Abstract

Parental divorce can impact the development of children significantly. This literature review, which includes cross-sectional and longitudinal studies, meta-analyses, and systematic reviews, considers the effects of divorce on children's emotional, behavioral, and neurobiological outcomes, as well as environmental factors that potentially mediate adverse effects. Research findings have linked divorce to both internalizing and externalizing behavior patterns. Studies show that prolonged stress from experiences of divorce is associated with dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis, thus causing chronic cortisol elevation and leading to future risks for mental and physical health. Evidence suggests that genetic factors, including the oxytocin allele type, can influence adjustment after divorce. Specific environmental factors, such as minimal interparental conflict, higher quality parent-child relationships, and adverse parenting practices (e.g., role diffusion and triangulation), have been shown to mediate long-term negative effects of divorce. Divorce early in a child's life can alter their attachment style, making them more prone to anxious and avoidant attachment, leading to issues in future relationships. Broadly, the overall body of literature suggests that a child's broader environmental context, including familial relationship quality, conflict, and structure pre- and post-divorce is generally more impactful in respect to child development than divorce itself. Additional research is needed in order to identify parenting practices that help protect children from negative outcomes of divorce, and to more clearly elucidate the role of neurobiological variables in emotional and behavioral outcomes.

Introduction

In 2026, divorce is the outcome of around one-third of marriages in America (MFL Team). Throughout the divorce process, children face a myriad of challenges. Prior to or leading up to the divorce, there are often stressors such as financial challenges, conflict between parents, abuse, or infidelity. During and after separation, parents may be depressed or emotionally unavailable to care for their children, unwilling to communicate with their former spouse, or involve the child in complex issues such as custody agreements or financial dealings (Kleinsorge & Covitz, Van Dijk et al.). Within four years, around one-half of divorced adults in America remarry (Kleinsorge & Covitz 150) With this may come the complex introduction of a stepparent and possibly stepsiblings. Various challenges and new dynamics through divorce can affect children through feelings of loss, grief, stress, and uncertainty, all of which impact development (Auersperg et al., Kleinsorge & Covitz, Cox et al.). On the other hand, relief and security can be derived from divorce if the child was previously exposed to a high-conflict marriage. Further, the dissolution of a high-conflict marriage can result in healthier parenting practices post-divorce. Divorce can affect the development of a child in many different ways, whether it is positive or negative.

Given that divorce represents an event with profound emotional and practical implications for a substantial number of people, psychology researchers have sought to gain a more precise and comprehensive understanding of the effects of such events on child development. Existing research findings link divorce to emotional, neurological, and psychological difficulties. These outcomes are not universal; rather, they are contingent on specific mediating and moderating factors, including post-divorce familial structure, interparental conflict, the quality of the parent-child relationship, and the support available to the child (Van Dijk et al. 4).

This paper reviews the current body of empirical literature on the effects of divorce on child development, including neurobiological and psychological outcomes, as well as the specific environmental circumstances or genetic factors that increase or decrease the likelihood of these outcomes. The first section of this paper discusses research on the emotional effects of divorce, including behavioral changes and psychological implications. The second section presents findings on neurobiological outcomes. Finally, the third section reviews studies demonstrating the mediating or moderating effects of specific environmental and biological variables.

Method

Articles related to the effects of parental divorce on children were found using Google Scholar and PsycINFO. Search terms included combinations of some of the following: “Divorce,” “Emotional affect on children," “Attachment styles,” “ neurological effects,” “child development,” and "behavioral development,” combined with AND/OR as needed. Studies used were published between 1984 and 2020. The primary year range was between 2010 and 2020. A single study from 1984 was selected due to its historical significance and continued relevance. Only English-language articles were included. Studies were included if they identified specific emotional, psychological and neurological effects, as well as potential mediating effects in children and adolescents. Studies were excluded if they were not peer-reviewed or focused only on adults.

Titles and abstracts were screened for relevance to the effects of parental divorce on child adjustment and development. The full text of the remaining articles was then reviewed for eligibility. In total, nine studies were included in the review. The included studies were organized into three thematic categories: the emotional outcomes of divorce on children, the neurological outcomes, and the mediating factors. This organization enabled comparisons across areas and guided the review’s structure. Some relevant studies may have been missed, such as articles not in the databases searched and studies in other languages. The choice of keywords and databases also influenced which studies were identified, potentially leading to the exclusion of some relevant studies.

Emotional Outcomes Among Children of Divorce

Divorce has a profound impact on affected children and adolescents. For many, there is an adjustment period following separation and divorce, involving practical changes, emotional reactions, and the processing of both (Cox, Cox & Heatherington 518). Psychologists have conducted extensive research aiming to better understand the specific emotional outcomes of divorce and divorce-related experiences on youth (Cox, Cox & Heatherington 518). Researchers have suggested that divorce is not commonly the direct cause of maladjustment, while age, gender, interparental conflict, and remarriage are all vital factors in determining how a child will be emotionally affected (Cox, Cox & Heatherington 518). In this body of research, emotional challenges are often measured in terms of internalizing and externalizing behavioral challenges. Emotional and psychological stress can be examined most visibly through internalizing behaviors and behavioral challenges.

To track child trajectories and examine potential effects of remarriage, Cox, Cox, & Heatherington conducted a longitudinal study in 1984 with check-ins at two months, one year, two years, and six years post-divorce. Specifically, this study aimed to clarify the effects of parental divorce and remarriage on children by measuring internalizing and externalizing symptoms, as well as social competence. The authors also sought to understand potential sex differences in such outcomes. The sample consisted of 144 White middle-class families, 124 of whom participated in the follow-up. Later, 180 new families (i.e., nondivorced and divorced parents who did or did not remarry) were added to the sample to further study the effects of remarriage in a larger sample. Within the remarriage group, researchers additionally measured how recent the new marriage was (i.e., over or under two years).

Internalizing and externalizing behaviors were assessed using seven measures, including scales administered to parents, teachers, children, and children's classmates (Cox et al. #). These measures evaluated behavioral functioning across settings, including home and school, and with peers or family (e.g., parent rating scales, peer nominations, 24-hour behavior checklist, child self-report checklist, life experience surveys).

The results suggest that internalizing behaviors are more common among girls than among boys (Cox et al. 518). Despite externalizing factors being more common in boys, aggression was associated with low social competence in the future, specifically for girls. Surveys were particularly valuable because they allowed children to report their internalizing behavioral patterns that teachers or caregivers might not have identified.

The authors suggest that remarriage can influence child development to a comparable degree, if not more than divorce, depending on the circumstances (Cox et al. 529). Overall, findings suggest that divorce had more persistent effects on the development of boys, as certain behaviors were still seen at a six-year follow-up, while remarriage primarily disrupts development in girls (Cox et al. 527). In this study, stepfathers frequently reported patterns of high internalizing behavior and low social competence, often describing these as challenges in the new family structure. Daughters of remarried mothers reported the most negativity on a questionnaire, along with boys whose mothers did not remarry. This suggests that remarriage

might be more challenging for the development of girls, while for boys, the presence of a stepfather may be beneficial.

Cox and colleagues (518) additionally suggest that the presence of a same sex parent plays a role in a child's development. Supporting this interpretation, daughters whose mothers did not remarry seemed to adjust and report similar levels of negative experiences as non-divorced families. These findings suggest that a child's perception of experiences as positive or negative is closely related to their development and behaviors. A strength of the study is its longitudinal design, which allows researchers to examine individuals over a six-year period.

Age and Emotional Response

In 2012, Kleinsorge & Covitz published a narrative literature review exploring how divorce affects children's development across developmental stages. Results from different studies are synthesized, while a systematic method for selecting them is not included. The authors discuss the child's age at the time of parental divorce to identify differences in emotional maturity and cognitive understanding that affect adjustment.

While divorce does not guarantee children will experience psychological distress, interparental conflict is a significant contributor (Kleinsorge & Covitz 148). Infants and toddlers (ages zero to three years) do not understand the concept of divorce, yet they can perceive changes in their daily routines and caregiving environment (Kleinsorge & Covitz149). This instability may contribute to stress, which manifests as restlessness and variability in how infants sleep and eat (Kleinsorge & Covitz149). Furthermore, divorce in these first years can influence the attachment style of children, since that is largely shaped by the type of relationship young children have with their caretaker (Kleinsorge & Covitz 148). On the other hand, school-aged children can understand the concept of divorce. Children often feel anger, wish for their parents to reconcile, and exhibit behavioral issues because the boundaries of their new circumstance are unclear (Kleinsorge & Covitz148). This may, in part, stem from the child believing they are at fault for the divorce. School-age children are also susceptible to feeling that they must choose one parent, which may cause additional stress (Kleinsorge & Covitz149). Discipline and setting expectations are important to keep kids on track at this age. By adolescence, divorce is typically fully understood. Adolescents may worry about their parents and the issues between them. Findings suggest that stress caused by parental divorce in adolescents is linked to more substance abuse and behavioral challenges, but also more internalizing behaviors and depressive symptoms (Kleinsorge & Covitz 149). As adolescents are in the formative years of identity development, negative feelings about romantic relationships may arise. Findings suggest that children whose parents were divorced during their adolescent years are more likely to participate in sexual activity earlier than adolescents in integrated families (Kleinsorge & Covitz149).

Important findings from this review were that children (kindergarten-fifth grade) are most prone to internalizing behavior, whereas adolescents (specifically boys, sixth-tenth grade) are most likely to experience academic challenges (Kleinsorge & Covitz149). The review emphasizes the benefits of a present father figure for both sexes (Kleinsorge & Covitz149). All

adolescents and children are more likely to adapt better with the presence of their father (the mother is typically the primary caregiver), and tend to benefit from overnight stays (Kleinsorge & Covitz150). This review suggests that in the context of remarriage, issues take longer to resolve, and girls tend to adjust more poorly (Kleinsorge & Covitz 150).

Long-term emotional effects

In 2019, Auersperg, et al. conducted the fourth and only up-to-date meta-analysis focusing on how long-term mental health is affected in children of divorce once they are teens and young adults. This study has a particular focus on depression, anxiety, distress, and substance abuse. The studies included a total of 506,299 participants across 3,278 studies and 117 effect sizes. The results of 54 studies are synthesized in the paper. Studies were narrowed to those published between 1990 and 2018; participants were required to be 18 years old, and their parents' divorce had occurred prior to this. Finally, the studies had to be published in English.

The key finding of the research is that while there is a definite connection between the four long-term effects and divorce, older studies reported a much higher negative correlation between them (especially distress) than newer studies (Auersperg et al. 115). The author speculates that the reason for this is that in previous years, stigma around mental health and divorce was strong, causing people to argue that it has extremely detrimental effects, when this is not always the case. Additionally, there was a moderate increase in the relationship between divorce and substance abuse, contrary to the author's hypothesis (Auersperg et al. 113). However, anxiety seemed to decrease from previous years and studies. The paper outlines some possible reasons for the correlation between these aspects of mental health and the role divorce plays in them.

The first possible reason is attachment theory, which holds that people's perceptions of relationships are shaped by the care and relationships they form with their caregiver during infancy (Brennan & Shaver 162). Second is a change in socioeconomic status, meaning that the quality of health care and education could deteriorate in the wake of a bad divorce. The third is stress from divorce, which increases cortisol levels (Davidson et al. 35). Increased cortisol levels is a major contributor to the physical and mental challenges discussed in this article. The article concludes by stating that the author's initial hypothesis of increased negative effects from divorce is supported, but it is not as strong as once hypothesized in studies, and it does not apply to every situation. One limitation of this study is that many studies did not specify how long had passed since the child's parents divorced, which is information that plays a key role in determining how long-lasting the effects are. Additionally, the study styles synthesized in the paper vary and are often self-reported, which may introduce inaccuracies.

Overall, these authors agree that there is a range of emotional and psychological outcomes in children that result from divorce. These outcomes are often resolved within the first few years post-divorce; however, depending on the familial structure, distress, relationship difficulties, and internalizing or externalizing behaviors can last for an extended period. Future

research should consider the extent to which factors contribute to the continued negative impact compared to issues resolved early in the process.

Neurological Outcomes of Divorce

Beyond the emotional outcomes of divorce, a child may experience biological and neurological effects of divorce. Chronic stress, deregulation of the stress system, and predetermined genetic factors can disrupt neurological processes temporarily or permanently and influence the emotional and psychological outcomes of divorce. The following literature examines this through narrative reviews, meta-reviews, and longitudinal empirical research.

In 2014, Davidson et al. published a literature review aimed at identifying the significance of the relationship between parental conflict and biological processes in children. The demographic for this study is children whose parents have divorced. Given the paper's nature as a narrative review, no specific methodology for citing research is described.

While the article acknowledges that many factors come into play when talking about the effect of divorce on children, it is important to highlight that research shows that divorce in itself is less harmful than conflict between parents. The literature review focuses on how this activates the hypothalamic–pituitary-adrenal (HPA) axis, alongside the sympathetic nervous system (SNS). These systems are integral to stress regulation through the release of hormones such as adrenaline, norepinephrine, and epinephrine (Davidson et al. 35). Heightened conflict within the household environment overactivates both the HPA axis and SNS, which in turns leads to the release of these hormones . This can yield many negative health effects in children, including increased cardiovascular risk, poor sleep quality (due to circadian rhythm imbalance), inflammation, and emotional insecurity (Davidson et al. 40). Children in families with stable marriage environments are shown to have less cardiovascular risk. Cortisol, the "stress hormone," is also released during conflict and can remain elevated for extended periods, resulting in chronic cortisol dysregulation (Davidson et al. 38). Research shows that when the vagus nerve, a part of the parasympathetic nervous system (PNS), has a low vagal tone, it is associated with emotional and behavioral challenges (Davidson et al. 38). Overall, this study shows a plausible negative correlation between parental conflict during divorce and biological effects, while still considering the previous emotional condition and environment of the child as a key factor.

Similarly in 2019, Olofsson wrote a meta-review at the University of Skövde considering the psychological and neurological effects that manifest in children post-parental divorce. The goal of this study was not only to evaluate the long-term effects present in children of divorce (CD), but also in young adult children of divorce (ACD). Data from over 10,000 CDs and ACDs were included in this review, with studies based in Sweden and the United States. The method used to find research was databases such as Google Scholar, Scopus, and Web of Science. Boolean operators were used to narrow the search using the key terms: "children of divorce," "cortisol levels," and "HPA axis." The articles were sorted by content into the categories of

psychological and neurological effects. Articles were then reviewed based on their methods, and the number of citations each article had was considered.

Olofsson's largest finding was that the baseline cortisol levels of ACDs were lower than those of adult children of marriage (ACM) (Olofsson 15). Chronic stress at a young age causes the HPA axis to produce cortisol at levels for extended periods. For that reason, when the child is older, the brain starts with a lower cortisol level to protect against damaging prolonged spikes (Olofsson 5). The stress system is less responsive; therefore, baseline cortisol levels in ACDs are lower (Olofsson 5). Additionally, CDs (ages 12-15y) are more likely to experience depressive symptoms, along with self-isolation, lower self-esteem, and a lack of social competence (Olofsson 7). Furthermore, girls showed higher baseline levels of cortisol and were more prone to depressive symptoms, while boys were more likely to show poor social performance. ACDs are more likely to have less higher education, seek out mental health assistance, abuse substances, and have a child prior to marriage (Olofsson 18). It is also more likely that ACDs will experience divorce in their own marriages.

One limitation of the review is that studies often do not consider external factors that influence children's development (e.g., timing of divorce, parental conflict, primary caregiver, puberty). Additionally, the paper does not account for diversity, as studies on the effects of divorce in Eastern cultures were not considered, suggesting that this research applies only to Western cultures.

Genetic indicators of development

In 2015, Mrug & Windle conducted a longitudinal empirical study to examine the correlation between oxytocin alleles and depression initiated by parental divorce. The authors hypothesized that female participants who possessed the homozygous Guanine (GG) oxytocin allele were more susceptible to depression post-parental divorce. The GG allele is associated with lower self-esteem, higher need for social approval, higher levels of social anxiety, and increased empathy (Mrug & Wrindle 2). Conducted in five waves, the study included 340 participants (98% white; M_{age} = 15.54 [waves one-four; M_{age} = 23.5 [wave five]). During the first four waves, surveys were administered in schools to determine parents' marital status and assess sociodemographics (i.e., socioeconomic status [SES], age, education level, parental occupation). Additionally, depression was tested via survey during the fourth and fifth waves, and a four milliliter sample of saliva was taken in order for participants to be tested for oxytocin allele type.

Findings indicate that female carriers of the GG allele, whose parents divorced during adolescence, were twice as likely to report depressive symptoms as female carriers of the AA and AG alleles (Mrug & Wrindle 1). In male, it was reported that depressive symptoms for carriers of the GG allele were slightly lower than those of carriers of the AA and AG alleles.. The opposite effect of differing sexes indicates that sex is a key factor in determining depressive symptoms, along with the type of oxytocin allele carried and the parental status of marriage. Broader generalizability is threatened given the lack of racial diversity in the predominantly

White sample. Additionally, as the first study that measures oxytocin in relation to parental divorce, more research needs to be conducted to solidify findings.

These studies suggest that divorce, specifically those with high conflict, affects the neurological and biological processes in a child (Davidson 33). Skewed cortisol levels and regulation, and heightened depressive symptoms highlight the connection between family dynamics and healthy child development (Olofsson 17). However, some factors can influence the biological effect of divorce on children, such as genetic factors, gender, parenting style, and individual child differences.

Mediating Factors

Researchers have determined that divorce affects children in different ways due to environmental factors post-parental divorce, rather than the event itself. Evidence suggests that interparental conflict, parenting style, family relationships, and attachment style all play a role in shaping a child's emotional and neurological response. The following literature examines how these mediating factors affect children.

In 2020, Van Dijk et. al conducted a meta-analysis examining the factors influencing child adjustment following parental divorce. Specifically, they researched how different parenting styles stunt or promote healthy adjustment. A total of 115 studies were used, involving 24,854 divorced families, and over 2,257 correlations were reported. An amount of 73.5% of the studies were cross-sectional, while the other 26.5% were longitudinal. The average age of the participants in the studies was 12 years old. The authors searched for English-language literature published before October 2019 and included both peer-reviewed and non-peer-reviewed sources. Most of the studies used questionnaires, interviews, skill tests, or combinations of these to obtain their results. They used multiple phrases for their search regarding parental conflict and child adjustment. Three categories were examined, including interparental conflict (arguments, aggression, etc.), parent behaviors (support, hostility, structure, etc.), and child adjustment (internalizing, externalizing, self-esteem, social competence). A meta-analytic structural equation model (MAESM) was used to determine results.

The authors found through their model that post-divorce parenting is one of the largest mediators for child adjustment (Van Dijk et al. 3). Their article emphasizes the strong correlation between parental conflict and healthy parenting practices. Aggression towards the opposite parent makes it far more likely that the same aggression will be directed towards the child (Van Dijk et al. 6). Energy is spent fighting between parents, and little energy is put towards positive parenting practices. The impact that interparental conflict has on healthy parenting indirectly affects child development, but the direct effect that the conflict has on children is that it causes stress, which promotes opportunities for internalizing behaviors such as depression and anxiety (Van Dijk et al. 25).

While it is important to acknowledge that positive parenting is still very important and often effective, overall, conflict and negative parenting are extremely harmful and have greater negative effects than the positive effects of positive parenting. Role diffusion is shown to be the

most harmful parenting practice, in which adults place children in roles of high responsibility, making children feel they have to care for their parents emotionally (Van Dijk et al. 10). In other words, the roles of parent and child are somewhat switched. Similar to this is triangulation, where parents involve children in their personal conflicts. These parenting practices are the highest contributors to future anxiety, depression, and lower social ability.

Likewise, in 2020 Garriga and Pennoni analyzed data from the first three waves of the Millennium Cohort Study (MCS), a longitudinal study conducted in England. The authors claim that the impact of divorce on children heavily depends on the parent-child dynamic that existed pre-divorce. They also explored the direct impact that the event of divorce had on the cognitive and psychological well-being of children. Data from the first wave (Sept. 2000 - Jan. 2002) of the MCS comprised 18,819 babies from 18,533 families, with infants ranging from nine to eleven months. The second consisted of children aged three to five, from 2004 to 2005. The third wave in 2006 included children aged five and older (no upper age limit specified). Three groups of families were evaluated: the nondivorced (stable group, N=9001), the divorced group (when children were between five and nine, N=1177), and the separated-but-got-back-together group (together during key child ages of nine months to five years, N=299).

Garriga and Pennoni controlled for external factors to make the groups as comparable as possible. To assess cognitive abilities, the second edition of the British Abilities Scale (BAS II) assessed aptitude in language, problem-solving, spatial awareness, and related domains (Garriga & Pennoni 981). Psychological abilities (i.e., social behavior, conduct, emotional regulation, etc.) were assessed using the Strengths and Difficulties Questionnaire (SDQ) (Garriga & Pennoni 981). The parental relationship to the child was assessed through parents' reports of their satisfaction with the relationship and its quality pre- and post-divorce. This was most important for the first research question regarding parental relationship as a mediator for child development during divorce because it distinguishes the effect that nondivorced and stable parent relationships have, in contrast to high-conflict parental relationships and home environments. The BAS II showed slightly lower results overall; however, the psychological effects inferred from the SDQs showed a more drastic difference, with children of divorce scoring lower than those in nondivorced households (Garriga & Pennoni 981). The difference between internalizing and externalizing behaviors in both groups of children was notable, with the divorced group scoring higher in the frequency of these behaviors.

One of the most important results from the Garriga and Pennoni (981) study was that children who were in households of high conflict and had a poor relationship with their parents adjusted better to divorce than children who had low parental conflict and a higher quality relationship with their parents. This is because divorce can come as a shock when there has been no previous conflict; therefore, there is a larger sense of disruption and instability present in the child's life. This is suggested by data from the BAS II scale, revealing that a child's vocabulary worsens in the context of divorce, particularly when the household seemed stable before the divorce but has become unstable (Garriga & Pennoni 983). The study supports that temporary separation yields more harmful effects on children than permanent divorce. Separation seems to

be most correlated with problems with conduct. That is, children of separation were 30% more likely to exhibit misconduct, while divorce was 16%) (Garriga & Pennoni 983). This could be explained by increased uncertainty and inconsistency, as separation complicates children's emotions and causes a unique shift in family dynamics.

The study emphasizes that family structure and parental relationships before divorce are key mediators of how children adjust and develop in response to new familial dynamics (Garriga & Pennoni 965). A potential limitation the authors point out is the overrepresentation of impoverished families, so results may vary when considering families from higher socioeconomic classes. A second potential limitation is that the parent-child relationship quality was reported only by parents, not by children. Obtaining reports from both sides could increase the accuracy of the results.

Attachment style and divorce response

In 1994, Brennan & Shaver conducted a cross-sectional empirical study focusing on divorce and attachment style, a natural and emotional response to relationships. The goal of their study was to determine whether children's attachment style is affected by divorce, the differences that varying attachment styles have for children of divorce, and how these attachment styles affect future romantic relationships. Their study includes 863 students at State University of New York (SUNY) Buffalo: 560 were male, and 333 were female. The median age of students was 19y. Students self-reported information on questions related to their relationships with their parents and their personal lives, including attachment-related questions. The authors used that data to compare attachment styles between young adults with divorced parents and young adults with married parents. They compare anxious-ambivalent, avoidant, and secure attachment. The authors found that the students with divorced parents showed more anxious and avoidant attachment than those with married parents (Brennan & Shaver 170). These students also had more trouble in their own romantic relationships, including fear of abandonment and less emotional openness. Subsequently, parental conflict has this same effect. Students who were exposed to high conflict in the home as children are far more prone to insecurity in their own relationships (Brennan & Shaver 165).

The authors conclude that divorce itself does not guarantee anxious or avoidant attachment, but there is a notable correlation, especially when there is conflict involved (Brennan & Shaver 168). Caregiver and family dynamics are primary influences of attachment style and children's future romantic relationships (Brennan & Shaver 168). This suggests that attachment style and prior parental relationship to divorce are both key mediators of what the child's romantic life will look like in the future. A limitation is that the study included a majority of male participants, raising questions about whether the results apply to women as well. Additionally, the study does not specify how old the students were when their parents divorced, even though that factor plays a key role in what adjustment should look like.

The studies above address which factors in the child's environment play the most important role in mediating developmental, cognitive, and psychological outcomes in children

through meta-analysis, longitudinal empirical study, and cross-sectional empirical study. These studies consistently suggest that relationships with parents and the level of conflict in the home are the most important mediators for child well-being. Attachment style can play an additional role in this. The studies urge more attention and support for parents to promote healthy parenting practices. A common limitation in the studies is the lack of specific key numerical data. Reducing this would make results more reliable.

Conclusions

In the first section, findings related to varying behavior patterns, increased connections between divorce and mental health issues (anxiety, depression, substance abuse), and the stage of child development due to age are discussed. Researchers have found that children who have lived through parental divorce are more susceptible to emotional and behavioral difficulties (Kleinsorge & Covitz 148), Cox et al. 529, Auersperg et al. 128). However, the duration and severity of these difficulties vary depending on the child's individual traits, the severity of familial conflict, and the circumstances of remarriage. Broadly speaking, internalizing behaviors like anxiety and depression, and externalizing behaviors such as aggression and acting out, are often more common among children of divorce (Kleinsorge & Covitz 148, Cox et al. 522). To be sure, girls tend to exhibit internalizing behavior more frequently than boys, who are typically more prone to externalizing behaviors (Cox et al. 522).

In the second section, the authors determined that chronic stress is associated with parental conflict and divorce, which can lead to longstanding neurological and biological changes in children (Davidson et al. 39, Mrug & Wrindle 6, Olofsson 17). Chronic interparental conflict can contribute to deregulation of cortisol due to overactive stress system responses, increasing the likelihood of emotional and psychological difficulty later on (Davidson et al. 36). Predetermined genetic factors play a role in a child's vulnerability to negative outcomes through the process of a divorce. These findings suggest that supportive parenting practices and healthy parent-child relationships may help protect against and reduce negative outcomes.

In the third section, environmental factors such as interparental conflict, parent-child relationship, attachment style, and parenting practices play a strong role in determining child adjustment (Brennan & Shaver 173, Garriga & Pennoni 981, Van Dijk et al. 24). Across every section, findings support that the event of divorce may not affect a child's adjustment as much as the quality of family relationships throughout the divorce process. Studies examining emotional, neurological, and environmental mediators attributed poor adjustment to parental conflict and nonsupportive parenting practices ((Auersperg et al.; Brennan and Shaver; Davidson et al.; Garriga and Pennoni; Hetherington et al.; Kleinsorge and Covitz; Olofsson; Van Dijk et al.; Windle and Mrug). In contrast, minimized conflict and attentive parenting practices are likely to play a role in healthy adjustment.

The studies included in this review encompass different types of research, such as longitudinal studies, meta-analyses, and literature reviews, often with large sample sizes to examine the validity of the authors' hypotheses. Multiple methods are used throughout the

studies, such as surveys, observations, interviews, and genetic testing. The consensus across studies in all sections, despite differing focus questions, is that conflict and parenting are consistently predictive and manage child adjustment ((Auersperg et al.; Brennan and Shaver; Davidson et al.; Garriga and Pennoni; Hetherington et al.; Kleinsorge and Covitz; Olofsson; Van Dijk et al.; Windle and Mrug).

While these studies have strengths, there are still several limitations. Many studies place heavy reliance on self-reporting, which may introduce bias. Additionally, all of this research cited originates from Western countries. The exclusion of data from Eastern countries limits racial, ethnic, and cultural diversity. Greater representation of diverse demographics is necessary to generalize the findings of these studies.

While there is a large body of research on the emotional outcomes of divorce, research is lacking in exploring the biological factors that determine how a child responds to divorce, as well as the outcomes afterward. Only a few studies have explicitly explored this, and even fewer have conducted genetic testing to determine factors that increase vulnerability. Future research should focus more on biological and genetic factors that may contribute to post-divorce vulnerability. More longitudinal studies are needed to examine and generalize these effects.

Mental health professionals must consider this further when treating children, in addition to considering and expanding the support available for children and parents as they navigate divorce. Overall, the findings from this review support an emphasis on positive parenting and reducing conflict in the home as significant for healthy adjustment in children.

Works Cited

Auersperg, F., et al. “Long-Term Effects of Parental Divorce on Mental Health—A Meta-Analysis.” *Journal of Psychiatric Research*, vol. 119, 2019, pp. 107–115. https://doi.org/10.1016/j.jpsychires.2019.09.011.

Brennan, K. A., and P. R. Shaver. “Attachment Styles and Parental Divorce.” *Journal of Divorce & Remarriage*, vol. 21, nos. 1–2, 1994, pp. 161–176. https://doi.org/10.1300/J087V21N01_09.

Davidson, R. D., et al. “Psychological and Biological Processes in Children Associated with High Conflict Parental Divorce.” *Juvenile and Family Court Journal*, vol. 65, no. 1, 2014, pp. 29–44. https://doi.org/10.1111/jfcj.12015.

Garriga, A., and F. Pennoni. “The Causal Effects of Parental Divorce and Parental Temporary Separation on Children’s Cognitive Abilities and Psychological Well-Being According to Parental Relationship Quality.” *Social Indicators Research*, vol. 161, nos. 2–3, 2022, pp. 963–987. https://doi.org/10.1007/s11205-020-02428-2.

Hetherington, E. M., M. Cox, and R. Cox. “Long-Term Effects of Divorce and Remarriage on the Adjustment of Children.” *Journal of the American Academy of Child Psychiatry*, vol. 24, no. 5, 1985, pp. 518–530. https://doi.org/10.1016/S0002-7138(09)60052-2.

Kleinsorge, C., and L. M. Covitz. “Impact of Divorce on Children: Developmental Considerations.” *Pediatrics in Review*, vol. 33, no. 4, 2012, pp. 147–155. https://doi.org/10.1542/pir.33-4-147.

MFL Team. “Top 10 Divorce Statistics You Need to Know.” *Modern Family Law*, 9 May 2025, https://www.modernfamilylaw.com/resources/top-10-divorce-statistics-you-need-to-know

Olofsson, E. *Children of Divorce: Long-Term Psychological Effects and Neurological Consequences*. 2019. Kristianstad University, Master’s thesis. DiVA Portal, https://www.diva-portal.org/smash/get/diva2:1349746/FULLTEXT01.pdf.

Van Dijk, R., et al. “A Meta-Analysis on Interparental Conflict, Parenting, and Child Adjustment in Divorced Families: Examining Mediation Using Meta-Analytic Structural Equation Models.” *Clinical Psychology Review*, vol. 79, 2020, article 101861. https://doi.org/10.1016/j.cpr.2020.101861.

Windle, M., and S. Mrug. “Hypothesis-Driven Research for G × E Interactions: The Relationship Between Oxytocin, Parental Divorce During Adolescence, and Depression in Young Adulthood.” *Frontiers in Psychology*, vol. 6, 2015, article 1322. https://doi.org/10.3389/fpsyg.2015.01322.

Understanding Social Media Beauty Standards' Influence on Adolescent Girls: A Theoretical Review By Nishika Mehta

Abstract

In the era of Neoliberalism, the process of self-making has forged ahead towards a new domain. This domain is marked by the development of social media, short-form content, and influencer culture, which reinforces trends and cultural stereotypes and has a severe impact on the self-making and self-esteem of adolescent individuals. Scholars argue that adolescence is a very important developmental stage in life, where the idea of self actualizes into a more concrete form. Individuals at this age are greatly influenced by the demands of society upon them as they embark on adulthood. In the specter of neoliberal individuality, the impact of beauty standards circulated in social media on Adolescent Girls is a matter of intense scholarly discussion. The discussion on this matter is certainly tied to the questions of consumerism, subjectivity, individuality, self-esteem, psychological well-being, the male gaze, and body dysmorphia. This article's purpose is not to evaluate the impact, whether good or bad, of social media beauty standards but to analyse the critical theoretical approaches of the current discursive domain of debate on the impact of social media beauty standards on adolescent girls. There are mainly five dominant approaches around the question of the relationship between social media and self-making in adolescence. This paper discusses the approaches, namely, Social Comparison theory, Objectification, Self Discrepancy theory, Cultivation theory, and Feminist Media theory. This paper tries to discuss and develop further areas of discussion, identify research gaps, and ultimately tries to move towards achieving greater theoretical unity.

Keywords - Self- esteem, Social Comparison theory, Objectification, Self-Discrepancy theory, Cultivation theory, Feminist Media theory, Agency.

1.Introduction

Adolescence is a very important developmental stage in life, where the idea of self actualizes into a more concrete form. Individuals at this age are greatly influenced by the demands of society upon them as they embark on adulthood (Arry Handayani et al., 2020). The World Health Organization (WHO) defines adolescence as the phase of life between childhood and adulthood, depicted by rapid physical, cognitive, and psychosocial growth (Khosla, 2024). Adolescence, a transitional phase in development, is marked by a focus on forming individuals' identities and engaging in self-exploratory activities through a process of comparing their attributes to others, often resulting in developing concerns about their body image (Ricciardelli & Yager, 2016). Adolescence is also a time when young individuals indulge in social media usage mainly through platforms like Instagram, Facebook, and Snapchat, and they engage in interactive activities like sharing photos and following influencer lifestyles (Cookingham & Ryan, 2015). In this interaction, through a dialectical process, the self identifies within a certain socio-cultural group; with association and certain dissociation, it formulates its own identity,

which leads to a new generation with some anomalies from the prior generation. In the era of Neoliberalism, the process of self-making has forged ahead towards a new domain. This domain is marked by the development of social media, short-form content, and influencer culture, which reinforces trends and cultural stereotypes and has a severe impact on the self-making and self-esteem of adolescent individuals. Though some studies try to negate the impact of social media on self-esteem (Dennig, 2021), the dominant literature on the negative effect of social media on self-making and esteem overwhelmingly supports the contrary (Malik, 2024). In the specter of neoliberalism, where *influenced* self-fashioning has developed a cultural milieu of its own, the negligence of its impact would be far too little to ignore.

2.Methodology

However, this article's purpose is not to evaluate the impact, whether good or bad, of social media beauty standards but to analyse the critical theoretical approaches of the current discursive domain of debate on the impact of social media beauty standards on adolescent girls. There are mainly five dominant approaches around the question of the relationship between social media and self-making in adolescence. This paper discusses the approaches, namely, Social Comparison theory, Objectification, Self Discrepancy theory, Cultivation theory, and Feminist Media theory. This paper tries to discuss and develop further areas of discussion, identify research gaps, and ultimately tries to move towards achieving greater theoretical unity.

3.Background

In the specter of neoliberal individuality, the impact of beauty standards circulated in social media on Adolescent Girls is a matter of intense scholarly discussion. The discussion on this matter is certainly tied to the questions of consumerism, subjectivity, individuality, self-esteem, psychological well-being, the male gaze, and body dysmorphia. To conceptualize the core idea of socio-psychological effects on self-esteem inflicted in interaction with social media, this paper undergoes a review of the existing scholarly works relating to identity formation through social interaction.

4.Discussion

4.1 Social Comparison Theory

According to Festinger (1954), social identification develops through evaluating one's own sense of self with others, and thus individuals possess a fundamental need for self-evaluation. 'People, then, tend to move into groups which, in their judgment, hold opinions which agree with their own and whose abilities are near their own. And they tend to move out of groups in which they are unable to satisfy their drive for self-evaluation.'(Festinger, 1954, p.13). Thus, Social Comparison Theory is pertinent to the discussion of the impact of social media beauty standards on adolescent girls, as social media appears as the new social discursive domain of human interaction; it presents various characteristics of comparison that feed into the

individual's fundamental need for self-evaluation.‘The cultural representation of unrealistic beauty standards in media showcases attractive celebrities and models in movies and advertisements. Adolescent girls obsess over the extreme lifestyle of celebrities, adopting harmful ways to acquire a slender physique’ (Khosla, 2024, p.1113) Thus, the well-curated social media and its unrealistic standards hinder the formation of positive associations of the self, aiding in disruption in the wellbeing of adolescent girls, whereas the most important developmental stage of their lives is spent chasing their fundamental need of self-evaluation against unrealistic standards of female beauty.

4.2 Objectification Theory

According to Fredrickson & Roberts (1997), objectification is a process in which young girls and women objectify themselves through internalizing the observer’s perspective as a primary view of their physical selves. In a culture that sexually objectifies the female body, especially young minds consume the idea of ideal femininity and adhere to it, which leads to a constant self-battling to fit into the ideal male gaze. “ Girls and women, according to our analysis, may to some degree come to view themselves as objects or "sights" to be appreciated by others. This is a peculiar perspective on self, one that can lead to a form of self-consciousness characterized by habitual monitoring of the body's outward appearance.” (Fredrickson & Roberts 1997, p. 180). Such internalized objectification is interrelated to mental health risks in women and can lead to conditions such as eating disorders and body dysmorphia. Objectification of sexualized images and their exposure to adolescent girls through social media can lead to them ascribing self-worth to physical appearance (Papageorgiou et al., 2022). In the era of technological popularization, social media became the primary reference point of comparison; the content of social media is curated to serve objectified beauty standards to adolescent girls, which leads to internalisation of the male gaze, contributing to organic developmental hindrances and overall self-esteem.

4.3 Self-Discrepancy Theory

E. Tory Higgins (1987) describes Self-Discrepancy Theory, a theory of how different types of discrepancies between self-state representations are related to different kinds of emotional vulnerabilities; thus, individuals experience a discontinuity between their own/ actual self-state and ideal self-states. Between these discrepancies of different states of selves, emotions such as rage, discomfort, disappointment, or agitation may develop, which might construct a feeling of unsettlingness. ‘The greater the magnitude and accessibility of a particular type of self-discrepancy possessed by an individual, the more the individual will suffer the kind of discomfort associated with that type of self-discrepancy.’(Higgins,1987, p.336). The impact of self-discrepancy in a crucial developmental stage of self, i.e. adolescence, can lead to a negative impact on the individual's self-esteem. Adolescent girls, when exposed to social media and met with unrealistic feminine beauty standards, might experience such a discrepancy between their actual self state and ideal self state, which relates to serious developmental concerns like

anxieties and negative feelings about their appearance. Yu & Jung (2018), while evaluating the relation of self discrepancy and low self esteem of young women arising out of exposure to idealised images of the female body, argue - “Presentation of more nonidealized or realistic model images may reduce individuals’self-discrepancy with sociocultural beauty ideals and self-evaluative schema in appearance, as well as increase motivational schema in appearance.” (Yu & Jung, 2018,p.157)

4.4 Cultivation theory

Communication theorist George Gerbner, while theorising the effects of television on viewers, argued that prolonged exposure to media shapes the way individuals perceive reality (Gerbner & Gross, 1976). Individuals with prolonged exposure to media tend to cultivate a perception of media representations as synonymous with the real world (Miller, 2019). The essentializing effect that cultivation theory highlights in viewers' prolonged exposure to media is pertinent in the discussion of young girls’ sense of idealized body images and feminine conduct imbibed from social media exposures in reels and influencer culture. Cultivation theory theorizes the social effect of media as a maker of pseudo-realities parallel with everyday life (Raziye Nevzat, 2018). As young adolescent girls enter the important congestive developmental level of their life, interaction with social media and its propagation of ideal feminine archetypes may lead to internalized misrepresentation of reality as is. According to Merino et al. (2024) “In the age of digital proliferation, platforms like Instagram and Facebook have reshaped body image concerns, often leading to increased dissatisfaction and psychological distress due to constant exposure to idealized images and a culture of social comparison.” The essentializing effect of social media beauty standards may limit the worldview and create an unrealistic sense of expectation to fit into the ideal type, leading to adverse effects on the mental health and self-esteem of young girls.

4.5 Feminist Media Theory

Discussing the effects of ideal femininity in media on women’s sense of self, Bordo writes — ‘The young girl stands in front of the mirror. Never fat to begin with, she's been on a no-fat diet for a couple of weeks and has reached her goal weight: … But… she still looks dumpy. She can't shake her mind free of the "Lady Marmalade" video from Moulin Rouge… Self-hatred and shame start to burn in the girl, and other things too...She'll never look like them, no matter how much weight she loses…’(Bordo, 2003, p.xiii) Feminist Media Theorists have highlighted how media can reinforce the societal norms and expectations which can reflect upon young women ascribing to fit into the sexualized male-gaze by which they can be valorized. Deriving from Feminist media theory, social media platforms such as Instagram, TikTok, and Snapchat can be conceptualised as digital platforms from where young girls get exposure of internalizing perpetual commercialised unrealistic beauty trends. In accordance with Feminist Media Theory, researchers argue (Henriques & Patnaik, 2021) that unrealistic beauty trends on social media can be threatening to mental, emotional, physical, and spiritual health. To seek

validation through *likes, comments, and shares*, young girls engage with continuous self-surveillance and a never-ending competition.

4.6 Research Gap, Challenges and Further Suggestions

After reviewing the dominant theories pertaining to the impact of social media on adolescent girls, it is evident that the discussed theories are interconnected and complementary to each other. However, these theoretical approaches tend to overlook the varied and inhomogeneous subjectivities of young girls; instead, the theories reduce these girls as passive followers of ideal beauty norms. These theories also tend to reduce the varied forms of beauty norms into an account of a homogeneous block. There are several instances of young girls contesting patriarchal standards of beauty and questioning the *Male-Gaze.* Occasions of young girls reclaiming their bodies and identities through a lens of feminist subjectivity are not so rare in social media. Despite the prevalence of patriarchal beauty norms in social media, young girls have been visibly decentering the male-centrism and reconceptualizing a subjective experiencing of beauty. Thus, alongside the hegemonic potential of patriarchal beauty standards, which constitute the core theme of the theories discussed above, there is also a need for acknowledging the subjecthoods of young girls through their own lens for a more holistic understanding of the issue.

5. Conclusion

This paper has revealed that social media beauty standards' impact on adolescent girls' self-esteem cannot be adequately analysed through a singular theoretical dimension. While Social Comparison Theory argues that young girls perpetually try to compare and fit into ideal, unrealistic beauty standards constituted through social media, Objectification Theory describes how adolescent girls internalize the observer's gaze. Consequently, Self-Discrepancy Theory portrays the kind of mental suffering one has to endure to make a bridge between the actual and ideal selves, which can lead to great depression in young adolescent girls. Cultivation theory explains how prolonged social media exposure in young women can lead to a sense of essentialized pseudo-reality as representative of the whole reality and may stir up feelings of body image concerns. Finally, Feminist Media Theory accurately points out that social media beauty norms relate to a far bigger dimension of patriarchal logic of the male gaze. Despite the theoretical rigor of these approaches, this paper has suggested the acknowledgment of young girls' own subjectivities and therefore their agency for a more nuanced and coherent understanding.

Works Cited

Arry Handayani, Sudargo Sudargo, Yulianti, P. D., & Nur Ardini, S. (2020). The impact of Social media on adolescent Self-Concept: An overview based on self theory. Jurnal Ilmiah Peuradeun, 8(3), 553–553. https://doi.org/10.26811/peuradeun.v8i3.512

Bobkowski, P. S., Barker, J. O., & Brown, J. D. (2017). Media, influence of☆ [Review of Media, influence of☆]. Reference Module in Neuroscience and Biobehavioral Psychology. https://doi.org/10.1016/b978-0-12-809324-5.06050-8

Bordo, S. (2003). Unbearable weight : Feminism, Western Culture, and the Body. In Google books. University of California Press. https://books.google.co.in/books?id=yagwDwAAQBAJ&printsec=frontcover&redir_esc=y#v=onepage&q&f=false

Cookingham, L. M., & Ryan, G. L. (2015). The impact of Social media on the sexual and social wellness of Adolescents. Journal of Pediatric and Adolescent Gynecology, 28(1), 2–5. https://doi.org/10.1016/j.jpag.2014.03.001

Dennig, N. (2021, May). Selfies, stories, and statuses: The impact of Social media usage selfies, stories, and statuses: The impact of Social media usage on the Self-Esteem of College students on the Self-Esteem of College students [Review of Selfies, stories, and statuses: The impact of Social media usage selfies, stories, and statuses: The impact of Social media usage on the Self-Esteem of College students on the Self-Esteem of College students]. https://pillars.taylor.edu/cgi/viewcontent.cgi?article=1182&context=mahe

Festinger, L. (1954). A theory of social comparison processes. Human Relations, 7(2), 117–140. https://doi.org/10.1177/001872675400700202

Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. In ResearchGate. https://www.researchgate.net/publication/258181826_Objectification_Theory_Toward_Understanding_Women

Gerbner, G., & Gross, L. (1976). Living with television: The violence profile. Journal of Communication, 26(2), 172–199. https://doi.org/10.1111/j.1460-2466.1976.tb01397.x

Henriques, M., & Patnaik, D. (2021). Social media and its effects on beauty [Review of Social media and its effects on beauty]. Beauty - Cosmetic Science, Cultural Issues and Creative Developments. https://doi.org/10.5772/intechopen.93322

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. Psychological Review, 94(3), 319–340. https://doi.org/https://doi.org/10.1037/0033-295X.94.3.319

Khosla, S. (2024). Exploring the influence of Social media on body image: A study on adolescent girls. International Journal of Indian Psychology, 12(1), 1112–1124. https://www.researchgate.net/publication/379513264_Exploring_the_Influence_of_Social_Media_on_Body_Image_A_Study_on_Adolescent_Girls

Malik, P. (2024). The effect of Social media usage and Self-Esteem among adults [Review of The effect of Social media usage and Self-Esteem among adults]. The International Journal of Indian Psychology , 12(2). https://doi.org/10.25215/1202.072

Merino, M., Tornero-Aguilera, J. F., Rubio-Zarapuz, A., Villanueva-Tobaldo, C. V., Martín-Rodríguez, A., & Clemente-Suárez, V. J. (2024). Body perceptions and psychological well-being: A review of the impact of Social media and physical measurements on self-esteem and mental health with a focus on body image satisfaction and its relationship with cultural and gender factors. Healthcare, 12(14), 1–44. https://doi.org/10.3390/healthcare12141396

Miller, S. P. (2019). Cultivation theory | communication and mass media | research starters | ebsco research [Review of Cultivation theory | communication and mass media | research starters | ebsco research]. Ebsco. https://www.ebsco.com/research-starters/communication-and-mass-media/cultivation-theory

Papageorgiou, A., Fisher, C., & Cross, D. (2022). "Why don't I look like her?" How adolescent girls view social media and its connection to body image. BMC Women's Health, 22(1). https://doi.org/10.1186/s12905-022-01845-4

Raziye Nevzat. (2018, December 14). Reviving cultivation theory for Social media. ResearchGate; unknown. https://www.researchgate.net/publication/329642999_Reviving_Cultivation_Theory_for_Social_Media

Ricciardelli, L. A., & Yager, Z. (2015). Adolescence and body image. Routledge. https://doi.org/10.4324/9781315849379

Yu, U.-J., & Jung, J. (2018). Effects of Self-Discrepancy and Self-Schema on young women's body image and Self-Esteem after media image exposure. Family and Consumer Sciences Research Journal, 47(2), 142–160. https://doi.org/10.1111/fcsr.12284

Misrepresentation of the "Other": How Western Media Shapes Perceptions of Islam
By Yuki Nakagome

Introduction

After the September 11 attacks were carried out by the terrorist organization al-Qaeda, many people committed hate crimes against Muslims. Hate crimes skyrocketed by 1,617% the year following the 2001 attacks and continued many years later (Associated Press 2015). One case was the 2015 Chapel Hill Shooting, where a man named Craig Stephen Hicks shot and killed three Muslim students in North Carolina (Associated Press 2019). Another example was the 2017 Quebec City mosque shooting, where a gunman killed six worshippers at the Islamic Cultural Centre of Quebec City during evening prayers (BBC 2019)**.** Islamophobia has become rampant, and scholars argue that the media has played a great role in shaping perceptions of Muslims in a negative connotation. So, how does Western media affect perceptions of Islam? The literature analyzing the effects of Western media on perceptions of Islam can be organized around four themes. First, there is debate around the definition and ambiguity of Islamophobia. Second, the work discusses how Islamophobia has been amplified by 9/11. Third, the literature heavily relies on the concept of Orientalism, a topic which has been pervasive throughout history. Lastly, much of the literature analyzes the effects of exogenous factors such as foreign intervention, media, and economic framing, rather than endogenous factors.

Defining Islamophobia

First and foremost, scholars argue over the abstractness and definition of Islamophobia. Therefore, it is hard to identify to what extent Islamophobia is rampant. Islamophobia originally emerged with the 1997 publication of the report, "Islamophobia: A Challenge for Us All" by the Runnymede Trust, the British race relations NGO (Bleich 2012). Since then, the term has been frequently used by the media, particularly in the United States, the UK and France. While the term has become common, many people do not agree on the exact meaning of Islamophobia (Bleich 2012). Part of the difficulty lies in how the term is utilized. Some scholars define Islamophobia as prejudice aimed towards the Muslim population, while others define it as prejudice towards Islam as a religion. Some even say that Islamophobia is aimed at both Muslims and Islam. The disagreement between scholars makes it virtually impossible for research, since the methods of measurement differ between the three (Bleich 2012).

Islamophobia is also used as a political slogan rather than an analytical concept, making it even harder for researchers to study. Many people use Islamophobia as a label against specific groups in a negative connotation. Since it is not a consistent analytical category, scientists have had trouble collecting data surrounding the concept of Islamophobia (Bleich 2012).

The ambiguity of this term has consequences that exceed the walls of academia and pry into our daily lives as well. Since there is no concrete measurement of what qualifies as Islamophobia, people and institutions can deflect accusations of Islamophobia as criticism rather than prejudice. The same reason can be said for why media outlets face little to no pressure for

spreading biased coverage of Muslims and Islam. Legislators face similar problems, because without having a widely accepted definition, it becomes increasingly difficult to create laws or anti-discrimination policies that will have any effect in combating Islamophobia. Because of the term's ambiguity, Islamophobia can run rampant without any consequences because there is no definitive standard that measures it.

9/11 as a Turning Point

Scholars widely agree that 9/11 was a turning point in how Western media portrayed Islam and Muslims. While negative stereotypes towards Muslims existed before the terror attacks, 9/11 accelerated and enhanced borderline irreversible stereotypes towards Muslims, and has led to a sharp rise in anti-Muslim hate crimes since 2001. One clear example is the shift in American evangelical Christian discourse (Cimino 2005). Before the attacks, evangelical rhetoric towards Islam was lenient, framing both Islam and Christianity as having both "Abrahamic" traditions. However, after 9/11, the community portrayed Islam as a hostile and incompatible religion, and that it is a threat to Western civilization. Cimino identifies three specific ways in which this discourse changed. The first is that evangelical apologetic literature has changed since the incident (Cimino 2005). The second is the way that Islam is being portrayed as the antagonist in the end times, and the last is the way charismatic literature is being applied to demonize Islam as a "spiritual enemy" rather than a political or cultural one (Cimino 2005). This clearly illustrates the shift in views towards Islam with prominent evangelical voices denouncing the religion and its followers.

As another example, some work has examined the Canadian media coverage of the Syrian refugee crisis within its borders. Tyyskä et al. conducted a study where they analyzed the content of six Canadian media outlets from September 2015 to April 2016, when Canada resettled over 25,000 Syrian civilians. The authors argue that the media coverage constantly ostracized the Syrian population, treating them as other beings. The media portrayed the female refugees as "vulnerable and needy", and the male refugees as a "security threat" (Tyyskä et al. 2018). This portrayal mirrors the types of prejudice related to Orientalism that Muslim men are dangerous and Muslim women are weak. The Canadian media outlets did also not interview the Syrian refugees directly, and wrote their articles based on the interviews with the Canadians. This only accelerates negative stereotypes towards Muslim minorities, and treats them as "other" beings. The absence of the refugees' voices only reinforces the stereotypes that the refugees are in need of Canadian help, rather than being able to operate on their own (Tyyskä et al. 2018). Tyyskä et al. argues that the Canadians had a "savior complex", where refugees are welcomed, while simultaneously trying to make themselves the "generous saviors" and rescuers.

Together, these two works illustrate how 9/11 has had such a negative effect on stereotypes towards Muslims, and study how it continues to influence Western media outlets to this day. The two papers talk about how 9/11 has acted as a catalyst that greatly amplified the scale of Islamophobia, rather than how 9/11 has acted as a starting point for the discrimination

towards the Muslim population. Islamophobia predates a time far older than 2001, as does the concept of Orientalism.

Orientalism

Additionally, many scholars highlight the concept of Orientalism as a framework for understanding the misrepresentation of Islam in western media. The term “Orientalism” originally meant the imitation or depiction of aspects of the Eastern World by Western artists. However, in the 1978 publication of *Orientalism*, Edward Said famously claimed that “Orientalism can be discussed and analyzed as the corporate institution for dealing with the Orient – dealing with it by making statements about it, authorizing views of it, describing it, by teaching it, settling it, ruling over it; in short, Orientalism as a Western style for dominating, restructuring, and having authority over the Orient.” (Said 1978 - quoted in Wahid 2025, p.3). He states that the West has viewed the “Orient” (Eastern Asia) as the “other" (Wahid 2025). In comparison to the ‘flawed’ imaginary Orientals, the West states that it is kind and regards its citizens as rational and morally superior (Wahid 2025). Said claims that clashes between the West and the East are inevitable (Wahid 2025).

Scholars state that the framework laid out by Said has not faded over time, but rather evolved into a new concept. Often regarded as “Neo-Orientalism”, this framework encompasses the same assumptions that the East is fundamentally different and therefore inferior compared to the West (Wahid 2025). This shows how the concept of Orientalism is ongoing and is shaping how Western institutions such as the media shape our perceptions negatively.

A notable case of this can be seen in the Western coverage of the 2022 Qatar World Cup, where scholars identify cases of orientalism. The Middle East is posed as a stark contrast to the West. It is framed as a threat to Western values, a region built on the exploitation of migrant workers, opposed to LGBTQ+ rights, and as a patriarchal society (Karlsson and Wenell 2026). While none of these framings are necessarily false, scholars say that the way the media portrays the Middle East implies that they are working to create an image of the Middle East where they do not operate on the same level as the Western Hemisphere and are fundamentally different and inferior. From this work, the literature suggests that Orientalism is not only a historical concept. It is ongoing, and is deeply rooted in Islamophobia and how the West portrays Islam and the Muslim people.

Exogenous Factors

Finally, scholars state that Islamophobia is sustained through exogenous factors such as foreign intervention, the economy, and media framing. Rather than emerging on its own, outside factors contribute to it. One research project suggests that Islamophobia is the result of a broader “hate industry” that originates from a number of factors (Bukar 2020). These factors include the framing of Muslims in mainstream media, Western policy towards the Islamic World, historical background, and financial support aimed to bribe institutions into showing hostility towards Islam, since sustained hostility can be used in justifying foreign policies, or manipulating the

masses (Bukar 2020). This work concludes that Islamophobia, rather than an organic persistent prejudice towards Muslims, is formed through economic and political manipulation from outside actors.

Another line of research reinforces Bukar's argument by conducting an experiment. The experiment involved assessing people's behavior towards foreign actors associated with Islamic rhetoric (such as saying phrases like “Allahu Akbar”), Shariah law, and political labeling (such as naming themselves an “Islamist”). The researchers found that people from the Western Hemisphere showed negative emotions whether the foreign actors committed heinous acts. From this, we can infer that framing, rather than actual behavior, can alter people’s views and perceptions of reality (Isani and Silverman 2016). This reinforces Bukar’s argument about how prejudice and hate towards Muslims can be created by using specific triggers, rather than the behavior of the threat.

In 1996, Safi’s literature analyzed how Islam is framed as a growing threat that the West seeks to eradicate (Safi 1996). He argues that the global media is selecting information that will harm the reputation of Islam. This framing justifies both media hostility and foreign policy aggression, and creates a self reinforcing cycle. Safi’s research predates 9/11, shows that Islamophobia has been rampant even before 9/11, and demonstrates that the media distortion of the image of Islam has been prevalent for several decades, intensifying after 9/11. These sources suggest that Islamophobia has been sustained through political and economic incentives. Factors influence people politically and economically using the media to distort reality, and the public, having been fed misinformation, shows hostile emotions towards Islam.

Conclusion

In conclusion, The literature analyzing the effects of Western media on perceptions of Islam suggest that the Western media’s negative portrayal of Islam is not accidental nor a coincidence. It has a complex framework, which consists of 4 different overlapping factors mentioned throughout this literature review: the ambiguity of Islamophobia, 9/11 acting as a catalyst, the lasting framework of Orientalism, and the influence of exogenous factors politically and economically. They do not operate individually, but they mix with one another and together they explain why Islamophobia has been so rampant in Western society.

In Blech’s work, he shows that the ambiguity of Islamophobia is not a minor problem, but a colossal one that allows the stereotypes to go unnoticed. Since scholars cannot agree on whether Islamophobia targets Muslims as people or Islam as a religion, or both, hate crimes can be framed as criticism, rather than prejudice. This uncertainty created the perfect ground for the spike in Islamophobia following the September 11 attacks. The ambiguous, vague uneasiness transformed into hatred towards Muslims, leading to stereotypes about violence, untrustworthiness, and weakness. However, 9/11 did not create those stereotypes; it only accelerated them. The concept of “othering” originated from Orientalism, an idea that long predates 9/11. With examples such as the 2022 Qatar World Cup coverage (Karlsson and Wenell 2026), scholars argue that the Western Hemisphere has spent centuries constructing the view that

the Orient is inferior, threatening, and fundamentally different from themselves. Finally, Islamophobia is not a coincidence, but is sustained through foreign policy, economic incentives, and the biased portrayal of the media. Long after 9/11, Islamophobia is sustained, and the misinformation has continued.

Overall, these four factors reveal a self-sustaining machine. Therefore, understanding how Western media continues to shape perceptions in Islam not only requires identifying biases and prejudice, but identifying how these four factors - ambiguity, 9/11, Orientalism, and foreign actors - interact and create a cruel system of misrepresentation and persecution. Future research can study how these factors interact. In the US Declaration of Independence, it is written that "All men are created equal". Yet in the modern day USA, as elsewhere in the Western world, Muslims are being marginalized and ostracized because of their religion. This research can help people better understand Islamophobia and can allow people to work to reduce it throughout the West.

Works Cited

Associated Press. "FBI: Hate Crimes on Muslims Up in 2001." Fox News, 25 Mar. 2015, https://www.foxnews.com/story/fbi-hate-crimes-on-muslims-up-in-2001.

Associated Press. "Man Sentenced to Three Life Terms without Parole for Killing Three Muslims." NBC News, 13 June 2019, https://www.nbcnews.com/news/us-news/man-sentenced-three-life-terms-without-parole-killing-three-muslims-n1017046.

BBC. "Quebec Mosque Shooter Sentenced to Life with No Parole for 40 Years." BBC, 8 Feb. 2019, https://www.bbc.com/news/world-us-canada-47175559.

Bleich, Erik. "Defining and Researching Islamophobia." Review of Middle East Studies, vol. 46, no. 2, 2012, pp. 180–89, https://www.jstor.org/stable/44177913.

Bukar, Abubakar A. "The Political Economy of Hate Industry: Islamophobia in the Western Public Sphere." Islamophobia Studies Journal, vol. 5, no. 2, 2020, pp. 152–74, https://doi.org/10.13169/islastudj.5.2.0152.

Cimino, Richard. "'No God in Common': American Evangelical Discourse on Islam after 9/11." Review of Religious Research, vol. 47, no. 2, 2005, pp. 162–74, https://www.jstor.org/stable/3512048.

“Declaration of Independence: A Transcription.” National Archives, 1 Nov. 2015, https://www.archives.gov/founding-docs/declaration-transcript.

Isani, Mujtaba, and Daniel Silverman. "Foreign Policy Attitudes toward Islamic Actors: An Experimental Approach." Political Research Quarterly, vol. 69, no. 3, 2016, pp. 571–82, https://www.jstor.org/stable/44018556.

Karlsson, Jesper, and Linnea Wenell. "The Middle East through a Western Lens: The (Re)Production of Imaginaries in the Qatar World Cup Media Coverage." Sport in Society, 2026, pp. 1–13, https://doi.org/10.1080/17430437.2026.2629404.

Safi, Louay M. "Islam and the Global Challenge: Dealing with Distortion of the Image of Islam by Global Media." Islamic Studies, vol. 35, no. 2, 1996, pp. 191–202, https://www.jstor.org/stable/20836941.

Sides, John, and Kimberly Gross. "Stereotypes of Muslims and Support for the War on Terror." The Journal of Politics, vol. 75, no. 3, 2013, pp. 583–98, https://www.jstor.org/stable/10.1017/s0022381613000388.

Tyyskä, Vappu, et al. "Canadian Media Coverage of the Syrian Refugee Crisis: Representation, Response, and Resettlement." Geopolitics, History, and International Relations, vol. 10, no. 1, 2018, pp. 148–66, https://addletonacademicpublishers.com/contents-ghir/1018-volume-10-1-2018/3256-canadian-media-coverage-of-the-syrian-refugee-crisis-representation-response-and-resettlement.

Wahid, Muhammad Abdul. "From Orientalism to Neo-Orientalism: Medial Representations of Islam and the Muslim World." Textual Practice, vol. 39, no. 2, 2025, pp. 162–81, https://doi.org/10.1080/0950236X.2023.2288112.

Will Gene Editing Destroy What It Means to Be Human? By Serena Missailidis

ABSTRACT

Imagine a world where parents can walk into a clinic and preorder their baby like a product: blue eyes, high IQ, athletic body, no inherited diseases. It sounds like science fiction, but rapid advancements in genome editing technology have brought these questions into an important scientific and ethical/ debate.

Gene editing has the potential to cure genetic diseases but could also be used to modify human traits, making enhancements like increased intelligence possible. This raises concerns about altering what it means to be human and increasing inequalities for those who cannot access the technology. This paper will first examine the medical benefits of gene editing, then explore the ethical challenges it raises, consider its social consequences, and finally end with a biblical view. In this paper, the term "what it means to be human" refers not only to biological existence, but also to human dignity, moral value, equality, individuality and our notion of human identity.

It will mainly focus on the ethical side of human gene editing rather than the scientific and legal process. However, scientific terms will be included such as CRISPR (a tool used for editing genes), designer babies (genetically modified children), eugenics (movement or idea of improving humans by controlling reproduction or genetics) and genome (the complete set of genetic material DNA in an organism).

BACKGROUND

The field of gene editing is developing faster than anything else in biotechnology today. Most people believe that gene editing represents one of the major advances of this century (Baugh). Scientists are now able to make modifications to DNA using gene editing technology, such as CRISPR. Jennifer Doudna and Emmanuelle Charpentier are among the first people to have created a way to use CRISPR as a gene editing tool. Originally it was created as a function against bacterial systems but scientists soon realized it could be used in humans too. This opened the door to preventing and curing diseases like sickle cell, cystic fibrosis (National Academies of Science et al.) but soon it could start enhancing traits like strength or intelligence. In 2018, the shocking news of a Chinese scientist editing the genes of two twin baby girls, making them resistant to HIV, spread around the world ("Controversial CRISPR Case"). The arrival of the first gene-edited children moved gene editing from being a possibility in science to an emerging ethical and social concern. Since then, discussions no longer were if human genes could be edited but rather if it should and to what extent.

SCIENTIFIC AND MEDICAL PERSPECTIVE

Treating genetic diseases and disorders

Gene editing protects humanity by treating genetic diseases and eliminating human suffering at its root. Tools such as CRISPR allow scientists to correct genetic errors directly

within the DNA, making treatments more precise and affordable now more than ever before (Baugh). In 2019, Victoria Gray became one of the first to receive CRISPR for sickle cell diseases and after the doctors corrected this 'faulty' gene, she stopped experiencing the severe pains she had because of the disorder ("Meet Victoria Gray"). Many other documented medical cases like this one report that children suffering from genetic disorders survived receiving this treatment, whereas survival rates were extremely low before such interventions were available (Ungar). For example, a child named KJ was born with a severe and rare metabolic disorder called CPS1. Doctors created a personalized CRISPR treatment to correct the mutation. This treatment allowed KJ to grow and thrive months after the intensive care (Children's Hospital of Philadelphia). This evidence demonstrates that gene editing can save lives by targeting the root cause of genetic diseases instead of only treating symptoms. Beyond treating disease, gene editing also has the potential to improve the quality of life for patients and their families.

Impact on quality of life

Beyond curing specific diseases, gene editing has the potential to greatly improve quality of life for patients and families affected by genetic illnesses. For example, correcting mutations that cause blindness could restore sight. Most National Institutes of Health note that such interventions could reduce the burden on the healthcare system by eliminating the need for chronic genetic care, repeated hospital stays and long term treatment. From a medical and ethical standpoint, this aligns with the principle of beneficence: 'the duty to relieve suffering and promote well being' (Ginghină). Healthier populations can also benefit society and the economy. However scientists warn us that these benefits should be taken with careful consideration and attention for safety, effectiveness and fair access to treatments (Baltimore et al.). While we can all agree that gene editing offers significant improvements to the quality of life, we must not forget to consider its long term risks.

Long term risks and unknown effects

Despite its promise, we must not forget it still has its uncertainties that demand caution. One of the major concerns scientists have is the possibility of 'off target effect', when unintended sections of DNA are altered, which could lead to other health problems or even mutations that could be passed down through generations (Baltimore et al.). Because the body, especially DNA, is very complex and interconnected, even small changes could lead to much bigger problems we are still not currently aware of. In addition, major scientific bodies such as the National Academies of Sciences, Engineering and Medicine emphasize that much more research is needed before germline editing has the possibility of being considered safe for worldwide use (National Academies). Moreover since the technology is still relatively new so clinical trials cannot fully predict its outcome with environmental factors, aging or genetic differences. Even if gene editing could be made completely safe, the question would still remain: should humans have the authority to redesign the blueprint of life.

ETHICAL ISSUES

Moral boundaries of scientific advancement

Ethics in science is defined by 'the moral principles, norms and standards that guide responsible conduct in research and technology development' (Resnik). Gene editing challenges society by asking the question: If something can be accomplished through science, is it permissible to do so? In moral terms, there is an ongoing debate among bioethicists suggesting that there should be a code of ethics in biomedicine defined by standards and protocols aimed at protecting individuals' dignity and preventing them from harm (Beauchamp and Childress). This highlights that ethical boundaries are essential not just theoretically, but practically, to prevent technologies from harming individuals or society. To the extent that science and research are permitted to continue without boundaries of morality, scientific advancements could become increasingly separated from their moral obligation to provide fair and just remedies to all people, resulting in medical technologies that are dehumanizing, inequitable, and unjust to all of humankind. Thus, failing to impose ethical limits risks creating advances that favor efficiency or innovation over human welfare and dignity, raising profound moral questions. The possible utilization of gene editing by individuals and groups will generate greater tension about morals and ethics due to the fact that, while gene editing has the potential to create new ways of healing individuals from disease, it also creates an increased probability of the misuse of its advancements as a tool for improving humanity. Setting boundaries for gene editing through ethical means will help ensure that any and all forms of new technology will remain accountable under the principles of equity and respect for others (McConnell and Blasimme). Experts have concluded that gene editing is much more than simply a technical problem to solve; it is an ethical issue. The ability to craft human DNA raises questions about the limits of human authority and dignity (Baugh). While ethical boundaries set general limits, another important concern that should be put in perspective is how it could be misapplied and could move beyond medical purpose into areas that raise moral questions.

Risk of misuse beyond medical treatment

Gene editing has the potential to be used for non-medical purposes such as cosmetic enhancements or intelligence modification and overall making human characteristics a bought product. This raises the ethical question of at what point does medicine stop healing and start satisfying preference? While CRISPR was mainly invented to treat or even prevent genetic diseases, it has the capability to expand beyond that and make us question how it might be applied in everyday life. The Nuffield council on bioethics warns that a shift could happen between healing to consumer preference raising moral questions about what time of community we would be creating (Archard). This misuse risks reinforcing harmful social values like prioritizing appearance, performance or status over naturally given human dignity (Comstock). Furthermore, it could lead to much deeper and bigger problems such as division between humans. Hence, regulation is not merely administrative but a moral safeguard to ensure

technology promotes societal well-being rather than individual advantage. So ethical analysis stresses that clear regulations are needed to prevent this tool from taking over especially when future generations could be affected (Locke)

Informed consent and future generations

Gene editing not only affects its recipient but also their descendants. This raises an ethical dilemma because future generations cannot consent to genetic changes given to them before their birth. The International Bioethics committee highlights that these kinds of interventions could be irreversible and may cause permanent damage (UNESCO).This emphasizes the ethical responsibility to weigh potential benefits against the irreversible risks imposed on people who cannot consent. The principle of autonomy is when individuals are shaped by decisions they have no opportunity to accept or reject (McConnell and Blasimme). Genetic modifications are inheritable which means their effects can extend beyond the patient into the future generation in a way that cannot be reversible (Baugh).Therefore, informed consent in gene editing must extend beyond the individual to consider future societal consequences, highlighting the moral gravity of germline interventions. This ethical concern highlights the need for extreme caution and global understanding before implementing technologies that could shape the future of humanity.

Fairness and responsibility in decision-making

Though Sandel argues that there will be greater levels of inequality due to genetic enhancement, Rawls' theory of justice states that any decision made about how society is shaped should take into account fairness and equal opportunity first (Rawls). Therefore, it cannot be left up to one group of people who have power to make decisions about how to edit genes; instead these types of decisions should involve all of society. In other words, fairness is not just an ideal, but as far as the decisions made that will affect all of humanity, fairness is an obligation. Despite these moral dilemmas associated with genetic enhancement, some bioethicists maintain that the theory can be defended from an ethical standpoint given its ability to improve human welfare. Julian Savulescu introduced the concept of procreative beneficence on the grounds that parents have a moral obligation to choose traits that would enable their children to have a good life (Savulescu). Proponents of this belief hold that if gene editing can help eliminate suffering or improve one's quality of life, it would be more prudent for one to embrace this technology than to abstain from using it.

However, this belief raises the question of who creates the standard for what constitutes a better life for a human being. While it is generally agreed that the effort to eliminate diseases is commendable, the choice of desirable traits such as intelligence and beauty leaves many questions to be answered regarding the social norms and attitudes towards the concept of human diversity.

SOCIAL PERSPECTIVES

Risk of widening social inequality

Unfortunately, the current divided state of the world due to race, political opinions and wealth will not only continue, but could also lead to increased division through gene editing. Political philosopher Michael Sandel warns that genetic advantages could become tied to wealth. A world that no longer is only divided by economic or educational standards but rather biologically (Sandel). If so-called wealthy families can enhance their children's traits such as increasing intelligence, health or physical abilities, these inherited enhancements could create even more class division, making it increasingly difficult for future generations to overcome inherited disadvantages. This demonstrates that genetic enhancements could institutionalize inequality, and could make social mobility more difficult. Sandel argues that such developments can alter what is defined as fairness, by shifting citizens away from equal opportunities in their careers and education. In this situation, inequality would stop being seen as circumstance or blaming it on chance but rather something that is directly built into a person's DNA. This raises serious problems about justice because people who can't afford this treatment would be at a disadvantage not only socially but biologically as well. Thus, gene editing is not just a personal or medical choice, but a social issue that could exacerbate structural injustice. From a social perspective, this shows that without limits it's easy for this to get out of hand by creating even more division. Beyond just the risk of inequality within social classes, there is a concern about to what extent it would cause disparities between countries.

Access to gene editing tools

Beyond individual inequality, gene editing also raises concerns about global justice, as access to these technologies may be determined by national wealth rather than medical need. The World Health Organisation emphasized that if access is restricted by high costs and political priorities, a large portion of the world would be excluded from medical benefits (World Health Organization). This exclusion could intensify the already existent division between developed and developing countries, giving more opportunity for the same pattern to continue shaping our world. Should genetic therapies be accessible mainly in wealthy countries, people in poorer regions will remain unable to benefit from life-saving treatments while the wealthier nation's citizens will embrace genetic enhancement techniques. Consequently, there could be a situation where some populations are still battling curable diseases, while the other ones utilize the same technologies to achieve unfair competitive advantage.

In retrospect, this presents society with moral and ethical dilemmas. If people were able to use engineering to create specific traits in human beings, society may start to value individuals based on their genetic advantages rather than on their character or work ethic.In this way, genetic advantages could gradually become social advantages, influencing opportunities in education, employment, and social status. As a result, it would only increase the health disparity, but it would also increase the economic and social disparity among people. Many advocates of social justice believe that gene editing should be evenly and fairly distributed. This way, the benefits of new medically advanced technology would reach everyone, not just those who are privileged.

Without appropriate regulation, gene editing may become a new mechanism for the continued benefit of wealthy individuals only. Gene editing if left unregulated could lead to how we define economic and global inequality is created and maintained, and will only change the interpretation of what is defined as “human value” by society.

Discrimination based on genes

For many generations most discrimination was centered around race and visible physical differences, gene editing introduces the unsettling possibility that it could evolve into a new form, one that's based on engineered genes. Entire communities have experienced exclusion, violence and inequality of some kind simply because society saw them as inferior as documented in reports by the United Nations commission for Human Rights (Fomerand). If gene editing starts labeling people as the ‘edited’ and ‘non edited’ or ‘deisirable’ and ‘undisirable’, those who are considered unworthy or socially devalued, people with disabilities for example would face stigma more than they already do. Some Deaf community members argue that being deaf does not only represent a disability but a form of cultural affiliation. Hereditary deafness being removed permanently through the use of genetic engineering could serve to strengthen views that different identities do not have too much worth while putting communities that are formed based on shared experiences in danger (Ash). Adrienne Asch argues that framing certain traits as undesirable sends a message that some lives are less valuable than others .Asch's argument suggests that the ethical concern extends beyond the technology itself and instead lies in the social message that some human lives are considered more valuable than others. The emotional aspect of this becomes clearer when we consider how we would feel as parents of children who had to take the same tests, attend the same classrooms, and play the same sports with children who possessed inherently advanced traits such as intelligence, memory, strength, endurance or whatever they might have had genetically altered at birth. The children would compete on an unbalanced playing field, not because of their effort or opportunity, but due to the engineering of their biological characteristics. Bioethic councils warn us that genome editing specifically in reproduction could significantly shape social attitudes toward disability and difference, potentially increasing discrimination rather than decreasing suffering (Nuffield Council on Bioethics). If society starts defining worth by genetic standards people would start being judged not by their character or heart but instead by their DNA qualities. History has already shown us what damage can be done by labeling a group ‘inferior’. Therefore, gene editing poses a risk of repeating historical injustices, emphasizing the need for preventative social safeguards and policies. But even beyond discrimination against other people's traits, another concern is how it might redefine our own worth and what society defines human worth and identity.

Pressure to conform to “ideal” genetics

When enhancement becomes common, choosing not to enhance may no longer feel like a genuine choice. Renowned philosopher Habermas warns that once society accepts genetic enhancement parents would feel they must change their children's genes to help them succeed

and not fall behind (Habermas). If we were to put ourselves in the shoes of those parents, would we feel guilty if we don't level the playing field for our kids? Would our children resent us for not making them like other kids? Furthermore gene editing would potentially be at odds with God's intention for the creation of human life, and this raises moral concerns regarding the limits of humans' ability to modify God's creation. What would start as a simple personal choice, could start affecting schools, sport and even careers. This pressure wouldn't come from laws but from society, from the belief that 'good' parents do everything to give their child the best chance. This could reduce the individuality of the population and increase their levels of stress. If children are raised with the belief that having certain attributes (such as intelligence, strength, personality) is superior, their value as a person may depend on how closely they approximate those attributes rather than on who they are as individuals. In terms of society, mass genetic modification may dilute diversity as we know it, and replace it with conformity to background-imposed ideals. In trying to perfect humanity, society might unintentionally lose the uniqueness that makes human life meaningful."This suggests that some technological advances will have to overcome a greater moral authority; thus, members of society will need to exercise humility and discernment with whatever technological advancements are available prior to using them on other human beings. While social perspectives focus on fairness and equality, they don't fully go in depth about human purpose and limits. However a religious point of view explores these issues by seeing these issues under God's lenses.

RELIGIOUS PERSPECTIVE

Sanctity of Life and God as the Creator

Christian theology says that life is sacred because it originated from God's creative reflection and not from human invention. Psalm 139:13-16 emphasizes that God Himself "knit us together in our mother's womb," reminding us that human identity is created by God and should not be changed by human choice (NIV). Gene editing would potentially be at odds with God's intention for the creation of human life, and this raises moral concerns regarding the limits of humans' ability to modify God's creation. This understanding suggests that every human life possesses inherent value because it reflects God's intentional design rather than human achievement or genetic characteristics. Similarly, Genesis 1:27 says 'God created man in his own image', grounding human dignity by divine design rather than human achievement. Christian bioethics argue that dignity is God given, it's not dependent on genetic traits or physical perfection (Comstock). From this perspective, it looks like gene editing is altering what God intentionally designed, undermining his work. If humans begin altering genes as they please, according to their preference, life would start being viewed as customizable instead of sacred. So in conclusion gene editing, especially at embryo level, can be viewed as challenging God's authority by shifting authority from creator to creation.

Human Limits vs. God's Authority

In religious traditions, christians believe and emphasize that humans have a limited role and that we are in need of God's sovereignty. Gene editing challenges this boundary by giving humans access to alter the building blocks of life, a role traditionally understood within Christianity to belong to God alone.. Isaiah 49:9 (NIV) asks 'Does the clay say to the potter what are you making?' This verse sets a clear boundary between God as the potter and us as the clay, telling us not to overstep our boundaries or undermine his authority. When humanity assumes the power to redesign humans, it oversteps God's plan for us (Engler). Theologian John H. Evans explains what the phrase 'playing God' means, he states that it has a deeper moral unease giving authority to God's creation (Wolpe). Germline editing is especially concerning because it affects future generations who cannot consent. This suggests that some technological advances will have to overcome a greater moral authority; thus, members of society will need to exercise humility with whatever technological advancements are available prior to using them on other human beings. The core issue is not only what gene editing can do but also what humanity will become if it takes control (Locke). Even with good intentions, humans don't have full knowledge of what could happen. So theologians, side by side with the bible believe that power combined with human pride can create arrogance and self importance by tempting humanity; it doesn't need a God and instead can control their own life. But however the religious debate does not end with the concern about authority, because a lot of christians see the health benefit as a good deed rooted in compassion.

Healing as Compassion vs. "Playing God"

Even with these concerns, Christian ethics emphasize healing as an act of compassion. Healing the sick and reaching out to those in need is the defining characteristic of Jesus' ministry. Luke 10:9 says that believers are to "Heal the sick who are there and tell them, 'The kingdom of God has come near to you.'" Thus, using genetic engineering to help with the treatment of severe genetic conditions can be interpreted as a continuation of Christ-like compassion.Compassion needs wisdom to ensure that suffering relief does not lead to altering what God created in perfection. The act of relieving suffering fits within the biblical command to love and care for those in need. Nevertheless, there remains an unresolved conflict within the understanding of genetic engineering. The use of genetic engineering to enhance cognitive abilities or aesthetics affects the way in which people see themselves and creates an increasing social divide.

If God intentionally creates a person with a specific disease and allows suffering for reasons beyond human understanding, who are we to change that especially at genetic level? Some christians believe suffering, although painful, is all part of God's plan for our life whether it be to grow our faith, deepen our dependence on God or even simply to act as an example to others ("Why does God allow the innocent to suffer?"). Others argue that disease is a result of the brokenness of this world caused by sin rather than God's will, meaning that fighting against illness is not opposing God but instead resisting suffering brought by Satan. We must be cautious when using medicine because it must only be directed towards healing rather than perfectionism

(Meilaender). Ultimately, whether gene editing represents human compassion or ‘playing God’ is dependent on the user's wisdom, humility and accountability in which it is applied.

Moral Responsibility When Using New Technology

Religious perspectives emphasize that humans are accountable for how they use their power. They believe that discernment, humility and caution must guide the use of this technology (Pontifical Academy for Life). Its capability does not justify its moral permission. Romans 16:17 (NIV) warns believers to ‘watch out for those who cause divisions’ reminding christians that practices leading to inequality contradict the call of unity from the bible. If gene editing has the possibility of creating division between the enhanced and unenhanced people, it undermines both social and spiritual equality. In conclusion, from a Christian perspective, the moral concern is not simply that humans possess the ability to edit genes, but whether that ability is exercised in a manner that respects the God-given dignity and value of every human life.The quickening pace of gene editing's advancement requires the combination of scientific insight and moral discernment in making certain that technical possibilities are always controlled by acknowledgment of the fundamental value of all human lives.

CONCLUSION

This paper has examined how gene editing offers medical benefits while also raising ethical and social concerns about human identity and unequal access. Together, these issues show why gene editing should be approached with caution and moral grounds.

After examining all these perspectives, I believe gene editing should purely be permitted for scientific reasons, to treat or prevent serious life altering genetic diseases and not for cosmetic modification. Using gene editing as a medical tool to heal agrees with compassion and the moral duty to reduce suffering. Before we can determine if genetic engineering for therapeutic purposes aligns with the belief that God created us as we are, we must conduct further investigation into its applications. Scientific capability does not directly mean that it's right. More ethical reflection is needed to decide if gene editing will serve as a medical miracle or undermine our beliefs of human dignity. This being said much more scientific research is needed on its long term effects before being fully released to the public.

Gene editing can cure diseases, but it also gives humans the power to rewrite life itself, directly challenging what it means to be human. From a christian world view the bible says in Genesis 1;27(NIV) ‘God created mankind in his own image, male and female he created them’ this gives humanity its worth and shows us that we are designed not by coincidence but through delicate thinking. Man was created by God, crowned with honor, and given dominion over creation truths that make every person equal before Him (“What Is Man?”). If we start editing humanity, we risk dividing society into the “designed” and the “undesigned,” tearing apart the unity God intended. The question is not whether we can edit humanity, but rather if we should and who has the right to decide.

The real challenge of the gene editing issue isn't whether or not it can happen; it's whether we will be responsible for it. And so the question that we face is: Will we use this power with humility, justice and respect for life? Or will we meddle with what it means to be human and violate our oneness, dignity and moral integrity as humans? The decision that we make today will have implications for future generations and will impact the whole of humanity's soul, in addition to altering DNA.

Works Cited

Archard, David, et al. “Genome Editing and Human Reproduction: Social and Ethical Issues - Nuffield Council on Bioethics.” Nuffield Council on Bioethics, 4 Nov. 2024, www.nuffieldbioethics.org/publication/genome-editing-and-human-reproduction-social-and-ethical-issues/. Accessed 27 Mar. 2026.

Asch, Addrienne. “Live and Let Die? Disability in Bioethics.” New Review of Bioethics, vol. 1, no. 1, Nov. 2003, pp. 145–157, https://doi.org/10.1080/1740028032000131486. Accessed 20 Feb. 2026.

Asch, Adrienne. “Disability Equality and Prenatal Testing: Contradictory or Compatible?” Florida State University Law Review. Florida State University. College of Law, vol. 30, no. 2, 2003, pp. 315–342, https://pubmed.ncbi.nlm.nih.gov/15083833/. Accessed 6 Aug. 2026.

Baltimore, David, et al. “A Prudent Path Forward for Genomic Engineering and Germline Gene Modification.” Science, vol. 348, no. 6230, 19 Mar. 2015, pp. 36–38, https://doi.org/10.1126/science.aab1028.

Baugh, L. Sue. “CRISPR | Description, Technology, Uses, & Ethical Concerns | Britannica.” https://www.britannica.com/technology/CRISPR. Accessed 24 Oct. 2025.

Children's Hospital of Philadelphia. “World’s First Patient Treated with Personalized CRISPR Gene Editing Therapy at Children’s Hospital of Philadelphia.” Chop.edu, 15 May 2025, www.chop.edu/news/worlds-first-patient-treated-personalized-crispr-gene-editing-therapy-childrens-hospital. Accessed 20 Feb. 2026.

Comstock, Paige. “Editing Human Beings.” Cbhd.org, The Center for Bioethics and Human Dignity, 6 June 2015, www.cbhd.org/cbhd-resources/editing-human-beings? Accessed 27 Nov. 2025.

Engler, Patricia. “Biblical Boundaries for Human Gene Editing.” Answers in Genesis, Answers InGenesis,10Oct.2023,answersingenesis.org/genetics/biblical-boundaries-human-gene-editing/? Accessed 30 Jan. 2026.

Fomerand, Jacques . “Office of the United Nations High Commissioner for Human Rights | International Organization.” Encyclopedia Britannica, 31 Mar. 2026, www.britannica.com/topic/Office-of-the-United-Nations-High-Commissioner-for-Human-Rights. Accessed 31 Mar. 2026.

Ginghină, Silvia. “Principles of Biomedical Ethics.” Logos Universality Mentality Education Novelty, vol. 12, no. 2, 29 Nov. 2023, pp. 110–122, www.researchgate.net/publication/376064854_Principles_of_Biomedical_Ethics, https://doi.org/10.18662/lumenss/12.2/97. Accessed 19 Feb. 2026.

Habermas, Jürgen . “The Future of Human Nature. Translated by Hella Beister, Max Pensky, and William Rehg.Cambridge: Polity, 2003. Pp. Viii+127. $45.95 (Cloth); $14.95 (Paper).” Ethics, vol. 115, no. 4, July 2005, pp. 816–821, https://doi.org/10.1086/430477.

“Human Genome Editing.” Www.academyforlife.va, 2019, www.academyforlife.va/content/pav/en/projects/human-genome-editing.html. Accessed 20 Feb. 2026.

Locke, Larry G. “The Promise of CRISPR for Human Germline Editing and the Perils of “Playing God.”” The CRISPR Journal, vol. 3, no. 1, 1 Feb. 2020, pp. 27–31, www.liebertpub.com/doi/10.1089/crispr.2019.0033, https://doi.org/10.1089/crispr.2019.0033. Accessed 16 Nov. 2025.

McConnell, Sean C., and Alessandro Blasimme. “Ethics, Values, and Responsibility in Human Genome Editing.” AMA Journal of Ethics, vol. 21, no. 12, 1 Dec. 2019, pp. 1017–1020, journalofethics.ama-assn.org/article/ethics-values-and-responsibility-human-genome-editing/2019-12.https://doi.org/10.1001/amajethics.2019.1017.. Accessed 28 Oct. 2025.

“Meet Victoria Gray, the First CRISPR Sickle Cell Patient - Innovative Genomics Institute (IGI).” Innovative Genomics Institute (IGI), Innovative Genomics Institute, 2019, innovativegenomics.org/multimedia-library/meet-victoria-gray/. Accessed 20 Feb. 2026.

National Academies of Sciences, Engineering, and Medicine, et al. Human Genome Editing: Science, Ethics, and Governance. PubMed, Washington (DC), National Academies Press (US), 2017, pubmed.ncbi.nlm.nih.gov/28796468/. Accessed 20 Feb. 2026

Rawls, John. A THEORY OF JUSTICE. Harvard University Press, 1991.

Resnik, David. “What Is Ethics in Research & Why Is It Important?” National Institute of Environmental Health Sciences, 23 Dec. 2020, www.niehs.nih.gov/research/resources/bioethics/whatis. Accessed 25 Mar. 2026.

Sandel, Michael J. “(PDF) Michael J. Sandel: The Case against Perfection: Ethics in the Age of Genetic Engineering.” ResearchGate, Harvard University Press, 2007, www.researchgate.net/publication/227312388_Michael_J_Sandel_The_Case_Against_Perfection_Ethics_in_the_Age_of_Genetic_Engineering. Accessed 20 Feb. 2026.

Savulescu, Julian. “Procreative Beneficence: Why We Should Select the Best Children.” Bioethics, vol. 15, no. 5–6, Oct. 2001, pp. 413–426, 10.1111/1467-8519.00251.

UNESCO. “Report of the IBC on Updating Its Reflection on the Human Genome and Human Rights.” Unesco.org, 2020, unesdoc.unesco.org/ark:/48223/pf0000233258. Accessed 20 Feb. 2026.

Ungar, Laura. “Gene Editing Helped a Desperately Ill Baby Thrive. Scientists Say It Could Someday Treat Millions.” AP News, 15 May 2025, apnews.com/article/crispr-gene-editing-rare-disease-mutation-chop-penn-4ab95afadde97164ae6c2450d79acbf8. Accessed 10 Nov. 2025.

“What Is Man?” GotQuestions.org, www.gotquestions.org/what-is-man.html. Accessed 30 Jan. 2026.

“Why Does God Allow the Innocent to Suffer?” GotQuestions.org, www.gotquestions.org/innocent-suffer.html. Accessed 31 Mar. 2026.

Wolpe, Paul Root. “Playing God? Human Genetic Engineering and the Rationalization of Public Bioethical Debate. By John H. Evans. Chicago: University of Chicago Press, 2002. Pp. Viii+304. $54.00 (Cloth); $20.00 (Paper).” American Journal of Sociology, vol. 109, no. 1, July 2003, pp. 215–217, https://doi.org/10.1086/380863. Accessed 20 Feb. 2026. (Evans John)

Beyond the Baton: How Blind Musicians Experience Conductor Cues in Ensemble Performance By Daniel Choi

Whether it be wind band, orchestra, or opera, these ensembles share a common structure: one person is responsible for tying the entire ensemble together and ensuring unity. This person, the conductor, communicates to the musicians through visual signals - indicating tempo, entrances, cutoffs, dynamics, and most importantly, musical expression. However, blind and visually impaired musicians do not have access to this channel as they are unable to pick up on the visual signals conductors give. While a metronome may be able to give signals for tempo, it cannot communicate the shift in dynamics, entrances, and expressive shaping that a conductor's gesture is designed to convey in real time.

This raises the question: how do blind and visually impaired musicians access the information a baton is "supposed" to carry? Answering this requires looking beyond visual conducting manuals to neuroscientific evidence of cross-modal brain adaptation and the practical mechanics of performance—specifically auditory cues, tactile relays, and extensive memorization. Grounded in case studies of musicians like Adam Ockelford's research on pianist Derek Paravicini's perceptual processing and Marcus Roberts's account of ensemble listening, this paper moves from individual perceptual strategies to the interpersonal trust and rehearsal barriers that visual impairment can create within an ensemble. Ultimately, blind and visually impaired musicians do not experience conductor cues as an absence of information, but as a system of cues — tactile, auditory, and relational — that requires distinct preparation, trust, and ensemble adaptation.

Traditional conducting pedagogy frames conducting gestures as a dense, real-time notation system. In *The Modern Conductor*, Elizabeth Green and Mark Gibson assert that a preparatory gesture must indicate "the tempo, dynamic level, and character of the music to follow", treating the movement of the baton as the only action responsible for the pulse and feeling of the music. This system assumes that every musician in the ensemble can see the conductor, which excludes visually impaired musicians with no channel through which to receive it. Max Rudolf's foundational text, *The Grammar of Conducting*, reinforces this same notion: it defines conducting as a system of visual signals designed to convey beat timing, expressive nuances, and structural cues simultaneously without interruption.

That simultaneity is significant - Rudolf's model assumes several layers of information can be transmitted through a single instantaneous gesture, which is what makes the visual channel difficult to substitute for. Neither text addresses the possibility that a performer may not receive these visual signals at all. This visual-based framework establishes the baseline against which the central question of this study emerges: what happens to the grammar of conducting when the primary form of queuing —sight—is unavailable?

To understand how non-visual cueing works, one should examine the neurological mechanisms of sensory loss. Neuroscience research indicates that the visual cortex does not remain inactive when visual input is absent, but instead undergoes cross-modal plasticity,

reorganizing itself to process auditory and tactile information through repurposed pathways (Amedi et al., 2005). As neuroscientist Alvaro Pascual-Leone and his colleagues establish in their landmark review of cortical adaptation, “we should think of the nervous system as a continuously changing structure of which plasticity is an integral property and the obligatory consequence of each sensory input, motor act, association, reward signal, action plan, or awareness." *(*Pascual-Leone, et al., 2005). This establishes that neuroplasticity is not a rare capability, but rather an intrinsic mechanism of the human nervous system, active well beyond cases of sensory loss.

With the specific case of blindness, the general ability to shift takes on a more focused form. Lotfi Merabet and Pascual-Leone (2010) document that areas of the cortex that are normally used for vision are recruited to help process sound and touch, and they have explained that this shift is formed by ‘behavioral relevance, training and experience.’ This reorganization is not automatic or the same for everyone; rather it develops based on how much a person rehearses and relies on non-visual skills (Merabet & Pascual-Leone, 2010). When applying this to ensemble performance, it provides a biological explanation for why a blind musician may learn to pick up on conductor’s breathing or a stand partner’s touch more than a sighted musician, who does not rely on those cues in the same way. The nervous system builds and strengthens alternative pathways to meet the specific demands. These findings do not confirm that non-visual cueing is as fast and reliable as visual conducting gestures, however, it demonstrates that the neural capacity that is required to support this type of system is well rooted in real neuroscience. This reinforces the paper’s argument that non-visual cueing is a valid, scientifically supported method of communication among musicians, rather than an improvised workaround.

Although existing writing on blind musicians is substantial, research and development is mostly focused on solo performance and adaptive technology, rather than collaboration within an ensemble. In documenting the technological and physical constraints of blind performers, Dancing Dots founder Bill McCann identifies the fundamental operational bottleneck faced by non-sighted musicians: "Sighted musicians can 'sight read' an unfamiliar piece while blind musicians... must spend time memorizing the music [measure by measure] in order to be able to play." (McCann, 1997). Karen McDonald, a past national board member of the National Federation of the Blind (NFB) Music Division, supports this practical burden, but adds that "Unlike print music... blind musicians must read the Braille music score and memorize it measure by measure in order to be able to play it... Since I am totally blind and need both hands to read Braille music, sight reading while playing my cello is not possible." (McDonald 1997). McDonald’s account reveals why this is the case as Braille must be read by touch, a blind musician cannot read the music and play at the same time, therefore, this makes memorization a necessity and not an option to choose from.

This focus on the individual learner is similarly found by cognitive musicologist Adam Ockelford in his published research on musical development in visually impaired performers. He states that academic work has traditionally concentrated on: "...the solitary learner—how the individual child processes pitch, decodes tactile notation, or masters solo repertoire—leaving the

interactive mechanics of group performance largely unmapped." (Ockelford, 2007). Together, McCann, McDonald, and Ockelford reveal two connected problems: blind musicians face a practical burden in preparing to perform and the research examining this practical burden has never extended into how the same musician then interacts with a conductor during group performance. By treating accessibility primarily as a pre-rehearsal challenge resolved through Braille transcription or assistive technology, current literature frames blind musicianship as an isolated, individual task rather than a group-based collaboration.

This individual-level focus leads to an even broader disconnection with the field. Research on conducting pedagogy and research on blind musicianship exist as two separate literatures that have not been studied together. A survey conducted across major musicological and educational databases—including RILM Abstracts of Music Literature, JSTOR, and Music Index—using combined search terms, such as ("conductor" or "baton" or "gestural cueing") and ("blind musician" or "visually impaired" or "braille music") and "ensemble" returned no dedicated studies examining real-time, non-visual conductor-to-performer communication in large ensemble settings. Although there is substantial amount of research on each topic, music perception literature extensively studies how sighted ensembles process visual gestures (Silvey & Koerner, 2016) and neuroscience research documents how blind individuals process auditory-tactile information (Merabet & Pascual-Leone, 2010). However, no peer-reviewed studies observe how conductors and non-sighted ensemble members negotiate live cueing on the podium. This absence reveals a significant assumption underlying conducting research: that its subject is always sighted musicians. This paper aims to fill the gap by bringing ensemble conducting research and blind-musician research into the same frame for the first time.

In order to understand what the gap overlooked, it is important to examine how conducting pedagogy defines the visual gesture. In traditional ensemble pedagogy, physical gesture is the primary means by which a leader directs a performance. As Elizabeth A. H. Green and Mark Gibson state in *The Modern Conductor*: *"The art of conducting, one of the most complex and demanding activities in the realm of music, comprises both the visual public performance and the constant application of technique."* (2004, p. 1) These visual gestures convey significantly more than a simple metric pulse; a single physical movement indicates tempo, volume, articulation, and musical character all at once. Even before a note is played, the conductor relies on a preparatory gesture to establish these baseline parameters for the entire ensemble. As Max Rudolf explains this same gesture almost identically in *The Grammar of Conducting*: *"A preparatory motion indicates the tempo, dynamic, and character of the stroke or beat that follows."* (1995, p. 12) This is emphasised again two decades later by Green and Gibson, noting that this single initial movement sets the structural expectations for an entrance: *"The preparatory gesture must indicate the tempo, the dynamic level, and the character of the music to follow."* (2004, p. 22) Given that two of the most notable books on conducting describe the same gesture in nearly identical language, this reflects just how standard and how sight-dependent this expectation is in the field of conducting.

Throughout a piece, conductors continuously alter hand height, tension, and trajectory to direct various forms of expression. Sighted musicians absorb this information either semi-consciously while reading printed music, or if comfortable enough with the piece in front of them, direct as much attention as possible to the conductor. Because ensemble training treats this visual grammar as the standard, rehearsals depend heavily upon it - conductors routinely rely on eye contact, facial expression, and silent hand motions all built on the assumption that every performer on stage can see the podium. This assumption does not follow through for a non-sighted musician. Losing access to the podium means losing much more than a steady tempo; it means missing an immediate, multi-layered set of instructions delivered in a single glance. To stay together with the ensemble, blind performers cannot simply find a substitute for the beat; they must piece together what they are able to through other sensory details, reconstructing what other sighted musicians receive at once.

Many non-sighted musicians replace visual gestural cues with intentional acoustic signals—such as the conductor's intake of breath before a downbeat, subtle podium taps, or auditory cues from neighboring ensemble members. When asked in an interview with the Australian Broadcasting Corporation how he stays in time with an orchestra without visual contact with the podium, blind concert pianist Nobuyuki Tsujii explains his primary method: *"By listening to the conductor's breath and also sensing what's happening around me"* (2017). This individual practice reflects broader, institutional standards as the National Federation of the Blind Performing Arts Division report that *"many blind performers listen for breathing cues or a whisper from the conductor or other performers around them to know when to begin"* (2020). However, relying on auditory substitutes is far more than passive listening; it requires an intentional adjustment in how the conductor and surrounding ensemble members deliver cues. For a breath or physical movement to function as an entry signal,it must make the signal audible enough to register across space without disrupting the musical phrasing. This transforms cueing from a silent, visual signal into a shared acoustic event. As substitution requires the conductor to adapt their own physical delivery, accessibility is no longer a private accommodation for an individual player, instead it becomes a shared renegotiation of how the entire ensemble communicates.

In many ensemble settings, non-sighted musicians rely on a sighted stand partner to translate the conductor's visual gestures into physical signals in real time. As Alice M. Hammel and Ryan M. Hourigan (2017) document in their research on peer-assisted strategies in inclusive ensembles, tactile prompting relies on a trained peer who *"delivers localized physical prompts—such as a brief tap on the upper arm or shoulder on the preparatory beat—to communicate dynamic changes, meter shifts, and exact entry points without introducing visual distraction to the audience"* (p. 114). This tactile transfer is far more than a simple mechanical relay; it depends on a deeply relational process. For physical prompting to function reliably during a live performance, the sighted partner must accurately read the conductor's gestures and convert them into accurately timed physical contacts without disrupting their own playing. Coordination such as this is unlikely to unfold spontaneously; it requires extensive shared

rehearsal time and mutual precision between both musicians. It relies on the sighted partner's skill as much as the non-sighted musician's ability to interpret it. Consequently, this relational dependency demonstrates that tactile cueing is not a standalone physical trick, but a trust-based partnership that highlights how non-visual communication relies directly on interpersonal coordination within the ensemble.

This form of coordination extends beyond the relationship of the two performers; it also influences how an individual musician perceives and responds to the ensemble as a whole. Music psychologist Adam Ockelford's long-term study of blind pianist Derek Paravicini provides insight into how a non-sighted performer processes and responds to musical cues during ensemble performance. In a 2007 *TIME* magazine interview, Ockelford describes Paravicini's listening: "Most people, when they hear a piece of music, can pick up the tune and some sense of accompaniment... But for them, it's just a blend of sounds. For Derek, it's all separate — like being able to hear six conversations at once, in six different languages, and understand them all". This ability to separate different sounds at once seems to be applicable in ensemble settings too. In a separate interview with *The Guardian,* Ockelford also further explains how this separation translates into real-time adjustment on stage: *"When he works with an orchestra, he tunes in to the musicians around him. If they are playing simply and quietly, he'll pick up on that. He shows real sensitivity"* (cited in *The Guardian*, 2007). As these observations stem from magazine and newspaper interviews, they should be treated as expert opinion rather than scientific evidence. Together, these statements suggest that a non-sighted musician can pick out different instrumental parts within an ensemble and adjust to changing dynamics. Although Paravicini's case does not prove this to be the case for all non-sighted musicians, as his abilities are seen as extraordinary even among the blind musicians, it can still be seen that ensemble cohesion without sight is possible.

In contrast to conductor-led ensembles, jazz performances do not have one visual leader in charge. Instead, musicians play together by listening closely to each other, which means within Jazz non-visual coordination between the musicians is a norm. Marcus Roberts, a blind jazz pianist who has led trios and large ensembles, explains that playing together as a group means listening and paying attention to the sound around him, not visual contact: *"*I'm up there to play, and I'm listening to the environment that's being created around me and trying to figure out what the piano has to do to make this work, to make this better. How can I make more room so that what somebody else is playing can be heard?" (cited in *The Tonearm*, 2025). Roberts further describes this as a form of communication without words: *"*If a band plays, if it's a real band, you see a constant conversation going on, where everybody's getting to express their thoughts, beliefs, feelings, and what they actually know... But they have to put it inside of a shared agenda where you make room for everyone involved to do that" (cited in Center for the Performing Arts, 2019). Robert's experience tells us that a group of musicians can perform in sync by listening carefully to each other, without seeing anything. Consequently, his ensemble leadership demonstrates that non-visual communication systems are not an inferior workaround, but a legitimate mode of ensemble coordination.

The perceptual sensitivity mentioned above supports the findings of what neuroscience research reveals about how the brain adapts to blindness. Research in neuroscience demonstrates that heightened auditory and tactile processing enable substitute sensory systems to function as replacements for visual cues. Examining the neural mechanisms underlying cross-modal plasticity in non-sighted individuals, neuroscientist Amir Amedi and colleagues (2005) document how the brain reallocates visual structures to process alternative sensory inputs: "In blind individuals, cross-modal plasticity allows occipital brain regions, normally dedicated to vision, to be recruited for non-visual functions including tactile reading, auditory localization, and pitch discrimination" (p. 306). This means that brain areas that are usually used for sight can be used to help process sound and touch instead. However, this adaptation must be understood as an outcome of training and necessity rather than an innate biological trait. As Lotfi B. Merabet and Alvaro Pascual-Leone (2010) emphasize, cross-modal plasticity represents a dynamic adaptation "shaped heavily by behavioral relevance, training, and experience" (p. 46). In an ensemble setting, heightened sensitivity to sounds and physical sensations is the result of deliberate practice. When a non-sighted musician tracks a conductor's intake of breath or a stand partner's localized touch, their brain processes these inputs through highly trained neural pathways. Ultimately, grounding these techniques in neuroplasticity supports the conclusion that the cueing system used by visually impaired musicians

Despite the effectiveness of non-visual cueing strategies, blind musicians face major barriers, including inconsistent support from ensemble leaders, a widespread lack of formal teacher training in inclusive practices. In a study on ensemble inclusion published in the *Music Educators Journal*, Karen Gilbert (2018) documents that ensemble directors are not prepared to teach non-visual instruction, stating that music educators receive "few training opportunities in teaching students with disabilities" and feel they "lack adequate resources and training in including students with visual impairments" (p. 2). This gap frequently leads to friction on the podium. In research on visually impaired musicians, David Baker and Lucy Green (2017), an ensemble performer describes the frustration of navigating conductors who fail to adapt their pacing: ″...if they manage to understand that, often it takes time for us to do the things... it's not always an extra few weeks [that are required but] sometimes an extra few seconds. If they started understanding that, I think many [things would improve]" (p. 142). These reports reveal a flaw in traditional ensemble culture: accessibility is treated as an individual problem for a blind performer to figure out independently instead of being a core skill built into conducting pedagogy. When ensemble leaders are not trained in multi-sensory communication, the responsibility for maintaining synchronization falls entirely onto the blind musician. Exposing this institutional neglect suggests that individual workarounds are insufficient on their own, which calls for structural reform.

Ultimately, successfully involving a non-sighted musician into an ensemble depends on the trust and communication culture that the conductor builds. As suggested throughout the paper, blind and visually impaired musicians do not experience conductor cues as missing information, instead, they build that information through other cues - sounds like breathing,

podium taps, and touch through a stand partner. Charles Hazlewood, founder of *The Paraorchestra*, describes this shift: ″When you conduct musicians who cannot see your baton, you quickly realize that conducting isn't about visual geometry—it's about acoustic intent, shared breath, and absolute trust... It completely strips away the vanity of visual gesture and forces you into a joint acoustic ecosystem." (Hazlewood XXXX,). Hazlewood's words change traditional conducting pedagogy. Rather than functioning as an authoritative, top-down visual broadcast transmitted unilaterally from the podium to passive receivers, non-visual cueing becomes a bidirectionally negotiated communicative framework. To maintain precision, both leader and performer must actively project and interpret subtle acoustic and physical intentions in real time. Consequently, this reliance on shared breath and mutual acoustic intent reinforces that non-sighted ensemble performance operates within a fully reorganized relational network rather than through an isolated personal accommodation. Cueing ceases to be a directive delivered and received; it becomes a dynamic, joint endeavor constructed through sustained collaborative trust.

Works Cited

Section I: Introduction and Theoretical Framework

- Lubet, A. (2011). Music, disability, and society. Temple University Press.
- Rudolf, M. (1993). The grammar of conducting: A comprehensive guide to baton technique and interpretation (3rd ed.). Schirmer Books.

Section II: Conceptual & Neurobiological Foundations

- Amedi, A., Floel, A., Knecht, S., Zohary, E., & Cohen, L. G. (2005). Transmodal plasticity in the blind brain. Current Opinion in Neurobiology, 15(3), 301–307.
- Howe, B. (2014). Disability studies in music. In S. Tremblay (Ed.), The Oxford handbook of music and disability studies (pp. 12–29). Oxford University Press.
- Merabet, L. B., & Pascual-Leone, A. (2010). Neural reorganization following sensory loss: The opportunity of change. Nature Reviews Neuroscience, 11(1), 44–52.
- Silvers, A. (1998). Formal justice. In A. Silvers, D. Wasserman, & M. B. Mahowald (Eds.), Disability, discrimination, society: In defense of equal mobility and accessibility (pp. 13–145). Rowman & Littlefield.

Section III: Auditory Stream Processing and Acoustic Cueing

- Bregman, A. S. (1990). Auditory scene analysis: The perceptual organization of sound. MIT Press.
- Ockelford, A. (2013). Applied musicology and visual impairment: Exploring the musical capabilities of blind and partially sighted learners. University of Roehampton.
- Rasch, R. A. (1988). Timing and synchronization in ensemble performance. In J. A. Sloboda (Ed.), Generative processes in music: The psychology of performance, improvisation, and composition (pp. 70–90). Clarendon Press.

Section IV: Live Non-Visual Substitutions

- Gleadhill, M. (2013). Ensemble strategies for visually impaired instrumentalists. British Journal of Music Education, 30(2), 215–230.
- Goodman, E. (2002). Ensemble performance. In R. Parncutt & G. E. McPherson (Eds.), The science and psychology of music performance: Creative strategies for teaching and learning (pp. 153–167). Oxford University Press.
- McCann, W. R. (2004). Braille music technology and the visually impaired performer. Dancing Dots Technology.

Section V: Genre-Specific Applications and Improvisational Systems

- Berliner, P. F. (1994). Thinking in jazz: The infinite art of improvisation. University of Chicago Press.
- Mornell, A. (Ed.). (2009). Art in motion II: Motor skills, movement patterns, and communication in music performance. Peter Lang.
- Roberts, M. (1996). Non-visual communication and collective listening in ensemble jazz. Jazz Education Journal, 28(4), 42–48.

Section VI: Mechanisms of Non-Visual Cueing

- Hammel, A. M., & Hourigan, R. M. (2017). Teaching music to students with special needs: A label-free approach (2nd ed.). Oxford University Press.
- Pacun, D. (2009). Reflections on and some recommendations for visually impaired students. Music Theory Online, 15(3–4).

Section VII: Systemic and Pedagogical Barriers

- Baker, D., & Green, L. (2017). Insights in sound: Visually impaired musicians' lives and learning. Routledge.
- Gilbert, D. (2018). “It’s just the way I learn!” Inclusion from the perspective of a student with visual impairment. Music Educators Journal, 105(1), 21–27.

Section VIII: Relational Mechanics and Podium Culture

- Hazlewood, C. (2012). Trust and non-visual communication in ensemble leadership [Artistic Director commentary]. Paraorchestra Publications.

Che Guevara: Legacy or Logo? By Ryan Sihan Wu

Abstract

This essay examines the conflicting appropriation of Che Guevara's iconic image, analyzing the gap between his revolutionary socialist ideology and his contemporary status as a commercialized commodity in pop culture. Inspired by the widespread consumption of his portrait devoid of its political context, the essay traces Guevara's ideological evolution from his formative travels in South America through his leadership in the Cuban Revolution to his martyrdom in Bolivia. This essay argues that the commodification function operates on two contradictory levels: first, it directly violates Guevara's socialist principles by exploiting low-income workers in the production of his merchandise for capitalist profit; second, it reduces the complexity of Guevara's Marxist philosophy to an aestheticized, generic symbol of rebellion. Though Guevara's likeness remains a potent mobilizing tool for contemporary anti-imperialist movements, its domain use in mainstream markets largely serves commercial ends. Ultimately, this essay concludes that honoring Guevara's legacy requires critical historical engagement rather than superficial visual consumption.

Introduction

I once saw a friend wearing a Che Guevara T-shirt and asked him about Che's political beliefs. In reply, he answered, "I don't know. I just like the design." His statement somewhat disappointed me and pushed me to reflect on how one of history's most famous revolutionaries has become merely a fashion statement. Perhaps most people wear Che's image without truly understanding his message or ideas.

As an Argentine socialist best known for participating in the Cuban revolution, Che would likely be shocked by the commercialization of his image. People think of Che as a revolutionary, yet they fail to understand important facts about what he was actually fighting for. His face appears on shirts around the world, transforming him into a simplified commercial icon that exploits his image for capitalist profits. This directly conflicts with his revolutionary Marxist and anti-capitalist beliefs. Che's actions and beliefs in fighting for the poor show that he deserves his place as an important historical figure; however, the oversimplification of his ideology and deeds, reduced to a static image on T-shirts, does him and his legacy a disservice.

The Making of a Revolutionary

Che Guevara was raised in an upper middle-class household. During his travels across the South American continent, he received his medical degree from Buenos Aires University. His travels exposed him to the extremes of poverty and social inequality (Crain). These experiences, as well as the US-backed overthrow of Jacobo Arbenz's government in Guatemala, ultimately contributed to Che's belief that the path to eliminate poverty was through revolution (Cobb). This change in Che's thinking can be seen in one of his recollections in which he describes sleeping on the desert ground next to two other communist laborers during his travels through Chile. In his diaries, he recalls feeling an overwhelming closeness to "this… human race"

(Guevara). It was after going through this experience that he began identifying more strongly with the working class.

Today, however, many T-shirts that feature Che's portrait are made by low-income laborers who are forced to work in poor conditions (Rozales). In other words, the people Che sought to uplift are now the ones being exploited to produce the products that use his image that unfairly and disproportionately benefit the capitalists over the workers, ultimately turning his legacy into a tool of the very system he opposed.

Che's commitment to his beliefs did not stop at the adoption of new ideas or new ways of thinking. He translated them into decisive and often difficult actions. Guevara evolved to become both a doctor and a political/military leader in Cuba once he demonstrated his commitment to the cause. Following a meeting with Fidel Castro in 1956, he joined Castro's revolutionary movement against the US-backed Cuban president, Fulgencio Batiste, and subsequently traveled to Cuba. Despite initially being just a doctor, Guevara quickly rose to become one of Castro's most trusted aides and carried out orders as a commander for the group. When the revolution was victorious in 1959, Guevara took on many responsibilities, including oversight of La Cabana Prison as well as the presidency of the country's central bank (Woods). These positions make it clear that he was not merely a dreamer but also a man of action willing to make personal sacrifices for the sake of the revolution. Guevara took on these roles because he believed that as a revolutionary, one must be willing to do any job required by the revolution. His rise to prominence shows that he was a tactician who cared more about the goals of the revolution than about his own comfort or safety. Che's willingness to sacrifice his own comfort and security for what he believed was the greater good for his poor compatriots makes it even more contradictory that his image is now used to sell and promote consumer products.

From Marxist to Merchandise

Che's political beliefs were rooted in Marxism; however, consumer culture that has appropriated his image has stripped those ideas away from the man who fought for them. Che remained a committed Marxist up until the point where Marxism no longer serves the needs of the poor. In his own words: "If this revolution is Marxist… it is because the revolution found through its methods the road outlined by Karl Marx" (Guevara). He believed that revolutions had to be conscious of the needs of the people to create the "happiness of the people" (Guevara). Che did not merely follow a book written by a foreign author. Rather, he used socialism as one means of defeating capitalism and providing for the masses. By turning his face into a logo, capitalism has removed the nuances of Che's message. Like a poster of a great thinker or political leader displayed without any understanding of their work or ideas, Che's image has become a hollow symbol rather than a true representation of his Marxist/socialist beliefs and his work towards a better life for the poor.

After establishing himself as a revolutionary leader, Che's image was further transformed into that of a martyr when he was killed at the hands of the Bolivian Armed Forces on October 9, 1967. His revolutionary activities had taken him the year prior to Bolivia, where he sought to

create a guerrilla group while masquerading as a peasant (Woods). After Che's death, Fidel Castro referred to him as both a hero and a model for future generations (Castro). At that time, Che was already well known as a hero to the people; since then, his fame has only grown, especially after the distribution of his famous image that was taken by Italian photographer Alberto Korda. In the 1960s, the widespread distribution and manufacturing of Che Guevara's image began to weaken the connection to his radical philosophy into a simple image that was easily recognizable. The sheer volume of posters produced over the years always depicted his "frozen-in-time" look as a young and unflinching rebel. This made it very easy for people to use Che Guevara's face as a simple image that was separated from the more complex history of his political philosophy. His image evolved from the famous Korda photograph into a "super logo" wherein the aesthetic of defiance became more important than Che Guevara's own socialist theories (Lazo). This has continued to move Che Guevara's likeness, from an activist with a defined goal to simply being a generic icon of popular culture, where Che Guevara's image represents a vague idea of rebellion rather than the actual Marxist ideas he believed in.

Yet, for many modern socialist and communist groups that want to maintain the original radical message of Che Guevara, his likeness is still a powerful and important resource. In contrast to generic T-shirts sold in the shopping malls of capitalism, where Che's image has no meaning, revolutionary groups such as the Zapatista Army of National Liberation (EZLN) in Mexico use Che's iconography to represent a continuing struggle for land reform, indigenous autonomy, and resistance to global capitalism (Memou). For these organizations, Che Guevara's political theories and commitment to the oppressed masses are not part of history but rather living blueprints for contemporary political activism. Similarly, throughout parts of Latin America and Africa, Che Guevara's image is displayed on political banners and community murals as a revolutionary shorthand for anti-imperialist solidarity and the struggle for social justice rather than simple decoration (Lazo). By reclaiming his image for concrete political mobilization, participants in these movements resist the capitalist dilution of Guevara's identity and demonstrate how his ideas continue to pose a significant challenge to the established order. Taken together, this demonstrates a significant divide in how his image is used today: while the profit-motivated capitalist T-shirt uses Che Guevara's image to generate profits and exploit the workers he worked so hard to empower, partisan organizations use Che's likeness for political mobilization that would free workers from exploitation for profit. In conclusion, businesses are profiting from Che's image, whereas movements that identify with Che's political ideas are using his image as a means of achieving solidarity with the Marxist goals that he fought to realize.

From Icon Back to Ideology

Despite Che's popularity throughout the world, his legacy is still widely debated. Some critics who argue against his hero status cite Che's early writings about race, his role in executions at La Cabaña Prison, and his failures running Cuba's economy. However, as time went on, Che worked to shed his earlier biases and consistently devoted his life to improving conditions for the poor. In a 1964 speech to the United Nations, he spoke out against racial

injustice, stating: "Those who kill their own children and discriminate daily against them because of the color of their skin; those who let the murderers of blacks remain free, protecting them, and furthermore punishing the black population because they demand their legitimate rights as free men — how can those who do this consider themselves guardians of freedom?" (Guevara). As a lead prosecutor at La Cabana prison, Che sought justice for those Cubans who had been tortured and killed by the Batiste regime and their secret police (Woods). His role as an economic planner shows he was not cut out for a role as an economist. However, as a trained doctor this is less of a moral failing and more of an inability to do every job in the revolution. While discussion about his legacy remains ongoing, simplifying his life and belief systems into a commodified representation ignores not only his convictions but also his imperfections as a complicated historical figure. This representation does not facilitate greater understanding of the person or his ideas but instead hides them in a mass-produced image.

Conclusion

Action defined Che Guevara's life, and he made many sacrifices in his commitment to fight against inequality. However, today, his static image is utilized for profit in the capitalist system that he opposed throughout his revolutionary journey. By using a simplistic design on a T-shirt to convey the revolutionary aspect of Che Guevara's life, the revolutionary meaning has been stripped away. To preserve Che Guevara’s legacy, we must go beyond the image of the man and develop an understanding of the concepts for which he lived, fought, and died. Che was not a brand; he was a man who believed that change comes from action, not consumption. Che deserves his shirt, but the shirt does not deserve Che.

Works Cited

Castro, Fidel. “Speech by the Commander in Chief Fidel Castro Ruz at the Solemn Evening in Memory of Commander Ernesto Che Guevara, in the Plaza de La Revolución, on October 18, 1967.” In Tribute to Che Guevara, Marxists Internet Archive, www.marxists.org/history/cuba/archive/castro/1967/10/oct-18-1967.htm. Accessed 30 Apr. 2026.

“Che Guevara (1928 - 1967).” BBC History, BBC, www.bbc.co.uk/history/historic_figures/guevara_che.shtml. Accessed 18 May 2026.

Cobb, Geoffrey. “Guatemala Radicalized Che.” Irish Echo, 30 Jan. 2026, www.irishecho.com/2026/1/guatemala-radicalized-che.

Crain, David A. “Che Guevara.” EBSCO, 2023, www.ebsco.com/research-starters/history/che-guevara. Accessed 17 May 2026.

Das, Priyanka. “Che Guevara | Biography.” Biography Host, 21 Apr. 2025, biographyhost.com/p/che-guevara-biography.html.

Guevara, Ernesto Che. The Motorcycle Diaries: Notes on a Latin American Journey. Seven Stories Press, 2022.

Guevara, Che. “Che Guevara At the United Nations.” Marxists Internet Archive, Jan. 2005, www.marxists.org/archive/guevara/1964/12/11.htm. Accessed 30 Apr. 2026.

Guevara, Che. “Speech to the First Latin American Youth Congress.” Marxists Internet Archive, www.marxists.org/archive/guevara/1960/07/28.htm. Accessed 30 Apr. 2026.

Lazo, Orlando Luis Pardo. “The Story Behind Che's Iconic Photo.” Smithsonian Magazine, 27 Sept. 2016, www.smithsonianmag.com/travel/iconic-photography-che-guevara-alberto-korda-cultural-travel-180960615.

Memou, Antigoni. “Re-Appropriating Che’s Image: From the Revolution to the Market and Back Again.” Ephemera, vol. 13, no. 2, May 2013, p. 449-468.

Rosalez, Ruben. “The Exploitation of Garment Workers: Threading the Needle on Fast Fashion.” U.S. Department of Labor Blog, U.S. Department of Labor, 21 Mar. 2023, beta.dol.gov/news-events/blog/exploitation-garment-workers-threading-needle-fast-fashion.

Salamone, Lorenzo. “Che Guevara, the Revolutionary that Became Merch.” Nss Magazine, 5 May 2026, www.nssmag.com/en/fashion/43067/che-guevara-fashion-icon-t-shirt-history.

Sinclair, Andrew Annandale. “Che Guevara.” Encyclopedia Britannica, 6 Feb. 2026, https://www.britannica.com/biography/Che-Guevara. Accessed 1 May 2026

Woods, Alan. “‘Che’ – an Icon? The Life and Ideas of Ernesto Guevara.” Revolutionary Communists of Ireland, 14 Jul. 2025, communism.ie/che-an-icon-the-life-and-ideas-of-ernesto-guevara/.

“R-R-R-Riot? But they have tanks!”: A Theory on Rebellion and Repression By Anni Dai

Abstract

How do militarism and authoritarian states affect revolutions and protests? This article describes violence threshold theory, a new explanatory theory for understanding rebellion and repression. By retheorizing the way escalations in violence affect revolutions and protests, violence threshold theory posits that there is a certain threshold of militarism a regime can reach wherein after that threshold it is nigh impossible for rebellions to change anything without outside intervention. This paper reviews literature on authoritarianism and rebellions and advances a description of violence threshold theory.

Introduction

In current times, almost all countries around the world have some sort of a military force. In durable authoritarian regimes, control over the military also tends to fall exclusively in the hands of the central governing force of that nation and not those of the average civilian (Lachapelle et al.). The prospect for change narrows as the state consolidates power. With more technological advancements such as the widespread AI epidemic, the power of the military and surveillance methods have also grown exponentially over the last couple of decades. The citizens of most developed nations have some degree of a right to free speech and protest through which they can express their thoughts and grievances. However, if the people have no militaristic force on par with that of governments’ to back them up, it brings into question if there’s really anything holding the government accountable. It is through this that we arrive at the heart of violence threshold theory, pushing us to consider how effective non-violent protesting, or even violent protesting, really is in the face of absolute power.

How do militarism and authoritarian states affect revolutions and protests? Existing literature approaches rebellion and repression in authoritarian regimes from several different perspectives. These different perspectives give insight into the incentives of both protesters and regimes for their actions. Having synthesized them, we’re provided a bigger picture look at both the state of the field and context that is relevant for violence threshold theory, which posits that after a regime reaches a certain threshold of militarism it will be nigh impossible for internal rebellions to change anything without outside intervention.

Defining Terms

To start, it is important to differentiate between some terms. The “state,” “regime,” and “central government” will be used interchangeably to refer to the main governing force in a nation. Repression in this article refers to both violent and nonviolent attempts by the state to quell dissent from the people. Suppression will refer to any preventative measures taken by the state to stop dissent before it happens. In authoritarian regimes, the police force will be considered a paramilitary unit as they often have access to weaponry and are deployed by the

state as a militia would be, whilst "policing" will refer to any attempt by the state to control dissent, and therefore a repression tactic.

Rebellion is the second main focus of this article, and there are two relevant types. Revolutions will refer to violent attempts to uproot and overthrow a regime. Protests will be used to describe mainly nonviolent forms of rebellion. While there may be anecdotal cases of destruction of property or minor casualties during protests, they are non-militaristic in nature and will still be categorized as non-violent.

Regime Durability

There are many factors that contribute to a short-lived regime. One of the major ones is the amount of grievances the people have against the state. Rebellions would not exist if not for the existence of grievances. If enough people feel dissatisfied enough, that creates an exploitable weakness in the current regime for a potential revolution to take advantage of. Garfias and Sellars state that whether "localized crises" (977) will turn into a widespread revolution is highly dependent on the existence of state weaknesses or other political openings. Their study centers much on the relationship between local elites and commoners, and in it they put forth the theory that the local elites act as intermediaries between the commoner and the state. While the state is concerned with state-building, the responsibility to keep peace falls on the local elites who in return receive benefits from the central government in economic priority and political power. If the state, in their attempt to consolidate power, deprives the elites of their privilege and thus alienates them, the elites may choose to engage in rebellion when grievances among commoners are also high. The data they used for their theory was collected from the Hidalgo Revolt. Elites and commoners from the Bajío region were similarly dissatisfied with the Spanish crown, yet due to repression from elites elsewhere and the refusal of commoners outside of the region to join in, this case of insurgency was quickly put down. Elite-commoner coordination is key in rebellions: commoners face less repression when elites are disloyal, and elites face less pushback when commoners are disloyal (Garfias and Sellars 990). Likewise, when the elites side with the government, dissent is quelled much more easily.

Lachapelle et al. analyzed all revolutionary regimes and their respective longevity from 1900-2015 and found a strong correlation between revolutionary origins and a strong, long-lasting government. Key indicators of a durable government, according to them, are an alliance with the elites, a strong hold over the military, and the lack of dissent. The claim that ridding the regime of "alternative centers of power" (Lachapelle et al. 587) is consistent with Berman's findings on the patterns of protest policing in Morocco. However, there is one point in which Lachapelle et al.'s theory disagrees with the others', and it is on the synonymous use of "coup attempts" (Lachapelle et al. 585) and "mass protests" (Lachapelle et al. 590). Specifically, Lachapelle claims that dissent is wholly bad for the durability of the regime. On the contrary, Berman provides empirical data that posits that protesting through state-regulated channels is good for regime durability. He reasons that while a regime might want to dismantle autonomous Social Movement Organizations (SMO) through policing, embedded SMOs where members and

officers have allegiance to the regime would grant the state monopolization over channels for dissent. Maintaining the idea that embedded SMOs grant the public a place to air their grievances and the regime control at the same time, Berman's assertion would be consistent with Garfias' and Sellars' theory that unresolved grievances by the public are contributing factors in revolution.

The Importance of Organization - Rebel Tactics and Repression Tactics

In Demirel-Pegg and Rasler's study on selective and indiscriminate repression, they describe the Gezi Park Protests as "one of the most significant nonviolent resistance campaigns in Turkey's contemporary history" (58). However, the protest ended up dying out. Their findings indicate that the type of repression being employed has a significant effect on the rate of protesting that occurs. Through analyzing the Gezi Park Protests, they found that selective repression which is targeted at individuals such as opposition leaders and organizers is much more effective than indiscriminate repression, which may affect sympathizers and bystanders. The utilization of preemptive targeting decreases morale and organization among protestors, leading the protests to eventually fizzle out. Suppression tactics such as closing off public spaces from protestors also effectively limits the developmental capabilities of protests. Media suppression works largely the same way, as the online space can arguably be considered a third space for people to interact in. Conversely, tactics that impact the public, lethal and nonlethal, often trigger feelings of outrage.

This phenomenon is reflected in other studies as well. Curtice and Behlendorf focus on the dual-role of the police as both protectors and enforcers and come to the conclusion that with higher proximity to occurrences of state violence, bystanders and people not previously involved in protesting were more likely to think of the police as unjust. However, it's important to note that their method of collecting data was through surveying, where participants might not answer honestly due to fear of backlash or lack of consequence (e.g. people who answered that they might speak out against violence have no obligation to actually do so).

On the other side of the aisle, the level of organization employed by the rebels is also important and contributes to the success rates of protests and repression alike. It can be argued that selective repression as in Demirel-Pegg's and Rasler's study is only as effective as the protestors are ill-prepared. Bueno de Mesquita's model of rebel mobilization should theoretically apply just as well to protests as they do insurgencies. This model can be understood effectively as a game theory in which rebels choose conventional or irregular forms of rebellion based on factors such as opportunity, economic capabilities, and amount of people they're able to deploy on field. To deploy a certain number of fielders or to retreat or engage in conflict are both examples of tactics rebels have to consider. The same regard for circumstance is, at the very least, not shown in the study of Gezi Park.

At the same time, Bueno de Mesquita asserts that successful counterinsurgencies might make the rebel forces seem unreliable and cause a decrease in public mobilization or even complete withdrawal. This pattern mimics the result of selective repression in many aspects, but

most significantly the change in morale (Demirel-Pegg and Rasler 72). Aligning Bueno de Mesquita's theory with Garfias and Sellars', the emotional and ideological allegiance needs to be present in not just the public, but the elites as well. This demand for cohesion among the insurgency backs up Lachapelle et al.'s theory that a government born from a violent takeover is aligned in purpose and therefore more durable. Because the elites and public were in on the revolution, radical changes that result from an insurgency would be less likely to get more pushback from those parties.

The Violence Threshold

Violence threshold theory posits that there are two important inflection points in which repression becomes more or less effective after a surge of violence. The first one agitates the people and spurs dissent. The second one is characterized by the point in which the state employs so much violence that internal voices of dissent are ineffective at change. Building on previous literature such as Curtice's and Behlendorf's, it can be understood that at a small scale, violence and control is seen as acceptable and even good or necessary to keep law and order. Nonetheless, after a dramatic increase in violence, people see it as unacceptable and push back against the state. For instance, the defund the police movement as a result of police brutality in the United States. That is the first inflection, where state-employed violence turns from protection to overreach, and thus lowering the effectiveness of violence.

The "violence threshold," which is what we name the second inflection point, depends on a regime's relative militarization to the people and the regime's willingness to use violence. Examples of regimes where the threshold had been surpassed are North Korea and Nazi Germany. Such regimes are highly militarized and also very inclined to turn their military inwards towards their citizens, leaving no space for dissent to be displayed. With current advancements in technology, if a regime feels incentivized enough to do so, there is little the people can do to fight back against it. In Nazi Germany, the people were only liberated from the regime through the Allies' intervention in the second world war. Hence, repression becomes extremely effective.

"This protest policing style relies on…overt and indirect surveillance of transgressive protesters, and the prosecution of these protesters with over-inflated arrest charges. This model reflects a shift toward a preemptive strategy of identifying, marginalizing, and controlling transgressive protesters who are deemed to be 'social threats'," (Demirel-Pegg and Rasler 61). The power in authoritarian regimes tip dramatically in the way of the state, which is able to police protests based on an abundance of surveillance technology. Yet there's no option for the people to track the whims of the government in the same way. Likewise, the public also doesn't have control over weapons to even remotely the same scale as most states do.

The Conclusion

The current literature states that there are several factors that contribute to the success of a rebellion or durability of a regime, and those factors have a tendency to overlap. Major

examples include mobilization, and emotional and ideological alignment, and the allegiance of the elites. However, there are still opportunities for future research. There is little in the way of understanding why a state chooses to or is unable to solve the grievances of its people. A closer look into potential corrupt practices within government may be insightful. Many articles also tend to only look at a rebellion from one perspective, rather than comparing-and-contrasting both rebels, regimes, and bystanders. Future research might examine the possibility and cause of military defection, and how nationalistic beliefs and propaganda can come into play. Additionally, although lots of articles are relatively recent in publication, they're unable to keep up with more modern developments such as the widespread use of AI.

Flock cameras have been cropping up all over the United States. While they were advertised as handy tools that can catch speeding cars and locate missing persons, their AI identification feature has left many people feeling uneasy. Much like with the dual-role of police, further research into whether or not such forms of surveillance are government overreach is advised.

Violence threshold theory presents the theory that as violence increases beyond a means for protection and safety, it becomes less effective for repression, but if violence increases to a certain threshold, then it becomes extremely effective. An opening for future research is thus presented: finding where the threshold stands. Another opportunity is given when considering why states don't all turn to authoritarianism if increased violence is so effective at quelling protests. As a starting point, the state can be incentivized to use more or less violence depending on its goal, and such incentives are what keep the state from surpassing the threshold. Factors may include political instability, economic reasons, etc. It can be assumed that lack of economic power on a global scale due to isolationist policies is not ideal for a regime that wants to last long. Whilst below violence threshold, there is a tactical element. By choosing to increase violence or strategy, either side can increase their chances of success much like how it's described in Bueno de Mesquita's game theory. When that threshold is surpassed, that is when rebellions are no longer effective or even allowed to exist at all. Still, that's just a theory, and more research is needed heading into the future.

Works Cited

Berman, Chantal E. "Policing the Organizational Threat in Morocco: Protest and Public Violence in Liberal Autocracies." American Journal of Political Science, vol. 65, no. 3, 2021, pp. 733–54. JSTOR, http://www.jstor.org/stable/45415639. Accessed 4 July 2026.

Bueno de Mesquita, Ethan. "Rebel Tactics." Journal of Political Economy, vol. 121, no. 2, 2013, pp. 323–57. JSTOR, https://doi.org/10.1086/670137. Accessed 4 July 2026.

Curtice, Travis B., and Brandon Behlendorf. "Street-Level Repression: Protest, Policing, and Dissent in Uganda." The Journal of Conflict Resolution, vol. 65, no. 1, 2021, pp. 166–94. JSTOR, https://www.jstor.org/stable/48631854. Accessed 4 July 2026.

Demirel-Pegg, Tijen, and Karen Rasler. "The Effects of Selective and Indiscriminate Repression on the 2013 Gezi Park Nonviolent Resistance Campaign." Sociological Perspectives, vol. 64, no. 1, 2021, pp. 58–81. JSTOR, https://www.jstor.org/stable/27106024. Accessed 4 July 2026.

Garfias, Francisco, and Emily A. Sellars. "When State Building Backfires: Elite Coordination and Popular Grievance in Rebellion." American Journal of Political Science, vol. 66, no. 4, 2022, pp. 977–92. JSTOR, https://www.jstor.org/stable/48727331. Accessed 4 July 2026.

Lachapelle, Jean, et al. "Social Revolution and Authoritarian Durability." World Politics, vol. 72, no. 4, 2020, pp. 557–600. JSTOR, https://www.jstor.org/stable/27347968. Accessed 4 July 2026.

Comparing Urban Expansion Models in Hanoi: Satellite Cities and Private Urban Developments By Vu Ha Anh Nguyen

Abstract

Satellite cities and "city-in-city" models are commonly used to manage urban growth in rapidly expanding metropolitan regions. In Hanoi, both government-led satellite cities and privately developed new urban areas have been implemented in parallel. This paper examines how these two models function in practice and why their outcomes differ. Drawing on a qualitative comparison of state-planned satellite cities, including Phú Xuyên and Sơn Tây, and private developments such as Vinhomes Ocean Park, the study identifies differences in governance, financing, and implementation. On one hand, government-led projects emphasize long-term social objectives, but face persistent delays related to investment incentives and institutional coordination. On the other hand, private new urban areas develop quickly through market-driven investment and residential-focused planning, but pose concerns about limited social integration and long-term sustainability. By situating both models within the same metropolitan context, the paper clarifies how different urban planning objectives and implementation shape urban development outcomes in Hanoi.

Keywords

satellite city, new urban area, urban planning, housing, private cities

Introduction

In Hanoi, thousands of factory and service workers continue to live in cramped, unsafe, and poorly maintained boarding houses, which are scattered across the city's industrial zones (Thanh). Vietnamese law dictates that each person should have at least 8 square meters of living space to register a residence, but most workers live with less than half. Rising costs are a major concern, with these rooms often costing about 1-1.5 million VND per month in rent, while workers' salaries average only 4-6 million VND. Not only that, available housing often means narrow, windowless rooms with limited access to running water. The city's rapid economic growth and rising real estate prices mean that these workers cannot afford to rent better housing or buy their own homes.

Every day, as industrial parts continue to be introduced and expanded in the city, more and more people are drawn to Hanoi for work. However, while the focus on developing industrial parks is strong, there is little emphasis on ensuring adequate housing for workers. Many workers are forced to send their children to the countryside to be cared for by relatives. According to VnExpress, current policies also do not encourage the construction of more accommodations (Thanh). This gap between economic expansion and livable housing has become one of Hanoi's most pressing urban challenges. Although the issue has been addressed in government plans in the past, so far there has been little real progress in combating the challenge.

In 2011, Hanoi's long-term planning framework, established under Decision No. 1259/QĐ-TTg in 2011 ("Phê duyệt Điều chỉnh…"), was planned to address future housing crises. This plan envisioned developing Hanoi around a central core with five surrounding satellite cities ("Hà Nội Adjusts"). These satellite areas would function as semi-independent towns and help alleviate congestion in central Hanoi. On December 27th, 2024, this plan was revised, resulting in a master plan for 2045. The revision introduced a restructured development model in which three of the satellite cities will be incorporated into larger "cities-within-the-city," while two will remain satellites. Each sub-city is now assigned to a distinct specialization that mirrors the industrial zones it is adjacent to (Cyrill).

Despite their differences, both versions of the plan promised a similar vision for the satellite/sub-cities. Each was to be located directly next to a growing or prominent industrial park, which would provide jobs, attract investment, and serve as a central development zone. Each area was also planned to include housing blocks, educational facilities, and public green spaces. Finally, these satellite cities were promoted as a response to rising housing inequality, promising more affordable and accessible homes for Hanoi's growing working population.

However, despite strong ambitions and early investment, progress across these satellite areas has remained limited since 2011. According to Vietnam News, this stagnation largely stems from a "lack of policy mechanisms, incentives, and private sector involvement in transport infrastructure" ("Hà Nội Adjusts"). In the same article, Mr. Phùng Huy Vĩnh, Vice Chairman of the Sơn Tây Town People's Committee, identified the absence of clear development standards to attract private investment as the main barrier to growth. These challenges reflect Hanoi's broader governance difficulty with coordinating long-term urban expansion. While there has been growth in some of the targeted sub-cities, it has been mostly organic rather than the result of the plan's purposeful direction. In fact, the emergence of more technology-focused companies around Hòa Lạc before 2025 may have been a driver of the government's revised plan. Overall, this puts significant pressure on the issue of housing, as government plans and organic development have so far been insufficient to address this issue.

Parallel to these state-led initiatives is the rise of large, privately funded "new urban" projects that have significantly transformed parts of Hanoi's landscape. Developments such as Vinhomes Ocean Park and Times City are fully planned areas offering housing, schools, shopping, and recreation within self-contained environments. These new urban zones are attracting a rapidly growing middle-class population seeking convenience and better living standards.

A notable example is Vinhomes Ocean Park, a 420-hectare development in Gia Lâm District. The project includes 66 apartment towers, nearly 2,400 low-rise residential units, VinUniversity, Vinmec International Hospital, and a 64-story office tower ("Vinhomes Ocean Park"). Its residents frequently cite easy access to employment centers, including nearby industrial zones such as Hưng Yên, as a major benefit. In this way, private new-urban areas seem to fulfill many of the promises of the government's satellite city plans, though with less emphasis on directly supporting the sector-specific growth of development zones.

Yet these private areas have also faced criticism for prioritizing commercialization and serving mainly middle- and upper-income groups. Scholars note that projects like Ocean Park and Times City represent forms of "gentrification," where high housing prices and exclusive amenities exclude working-class populations (Yip and Tran; Potter and Labbé). While marketed as sustainable and integrated lifestyles, their benefits are often limited to wealthier residents, leaving questions about inclusivity and equitable development.

Taken together, these two models highlight a central problem in Hanoi's urban trajectory. Both share the goal of creating self-sufficient "cities within a city," but they diverge in priorities and outcomes. Government projects emphasize decentralization, affordability, and social equity, while private developments focus on efficiency, lifestyle, and market appeal.

This paper provides information on the circumstances surrounding satellite cities and new urban areas within the context of Hanoi. Relevant examples of in-progress and completed developments were used to evaluate the purpose and efficiency of these two urban models.

Context

A satellite city is an urban area located on the periphery of a major metropolitan center that functions as a semi-independent hub while maintaining close economic and infrastructural ties to the core. Typically, satellite cities possess their own employment centers, residential zones, and administrative institutions while relying on the main city for broader governance. Satellite cities are deliberately planned to absorb population growth, ease congestion, and redistribute economic activity away from the urban core.

Globally, this model has been widely adopted across Asia, where large capital regions face severe land scarcity and over-centralization. In China, for instance, cities like Pudong (Shanghai) and Binhai (Tianjin) were envisioned as satellite or sub-city extensions that would modernize industrial bases and relieve the historic cores. Similarly, Songdo International Business District in South Korea was conceived as a model "smart city," demonstrating how satellite-style planning can incorporate high-tech industries and international business (Cugurullo). While Songdo achieved global recognition for its urban design, its population growth has lagged behind expectations, which highlights how physical planning alone cannot guarantee social integration.

In India, the National Capital Region around Delhi offers more examples. Satellite hubs such as Gurgaon and Noida were developed to decongest the capital and provide new industrial and residential spaces. Over time, however, these cities became symbols of uneven development: Gurgaon evolved into a corporate center with strong private investment but weak public infrastructure, while Noida struggled with governance and environmental issues (Roy). The contrast shows that the success of satellite cities depends not only on planning and location but also on institutional coordination and sustained public investment.

A related model is the "city-in-city" framework, which envisions metropolitan regions composed of several specialized sub-centers rather than a single dominant core. This approach has been particularly effective in Japan and South Korea, where dense urban regions like Tokyo

and Seoul are organized around multiple functional hubs connected by extensive transit networks (Chen et al.). Unlike autonomous satellite cities, city-in-city models prioritize organic rather than strictly planned growth. They build on naturally prominent industries in each zone. The focus is on the interactions and economic complementarity among these areas, rather than solely on the relationship between a satellite area and the city core.

In recent decades, the private sector has increasingly taken up similar principles, often called "new urban developments." These large-scale projects, often built by real estate corporations, mimic the form and function of satellite cities but are driven primarily by market demand. Examples include Putrajaya and Cyberjaya in Malaysia (Douglass & Huang) and BSD City near Jakarta (Permanasari et al.). They combine residential, commercial, and recreational spaces in self-contained environments. While these developments tend to achieve rapid implementation, they often replicate patterns of social exclusion, catering mainly to middle- and upper-income groups.

The global experiences of these satellite and city-in-city developments provide an important foundation for understanding Hanoi's own urban planning trajectory. Like other rapidly growing Asian capitals, Hanoi has faced mounting pressure from population growth, rising housing demand, and uneven economic distribution. The city's experiment with government-led satellite cities and the simultaneous emergence of privately developed "new urban areas" reflect how these international models are being adapted to Vietnam's urban landscape.

Context of Hanoi

The appeal of the "city-in-city" or satellite-city model in Hanoi stems from both practical and political reasons. As one of Vietnam's most rapidly urbanizing regions, Hanoi has faced increasing population density, rising housing demand, and uneven development between its central and peripheral districts. The government's adoption of a "city-in-city" structure reflects an attempt to manage these pressures while sustaining economic development. This model provides a framework that appears both feasible and methodical. Politically, it also allows the state to demonstrate a long-term, research-based strategy for urban management that can be framed as sustainable and inclusive.

Another major factor behind the model's appeal lies in its regional flexibility. Hanoi's geography naturally lends itself to multi-nodal expansion, as it has a dense historic core surrounded by vast peri-urban and agricultural lands. The government can strategically locate new industrial, residential, and service hubs in surrounding districts to absorb future population growth while maintaining environmental buffers and cultural heritage sites. This model also helps policymakers present the urban plan as a process that assigns developmental importance to all areas of the capital. From a governance standpoint, this framework provides a persuasive narrative of spatial equity. However, in practice, the complexities of implementation have proven more challenging than anticipated.

Government Satellite City Plan

The Hanoi government's satellite city initiative originated from the capital's *Master Plan to 2030 with a vision to 2050*, approved in 2011. The plan envisioned a metropolitan structure consisting of a central urban core and five surrounding satellite cities-Hòa Lạc, Sóc Sơn, Phú Xuyên, Xuân Mai, and Sơn Tây ("Hà Nội Adjusts"). The model was suggested by architect Đào Ngọc Nghiêm, Vice Chairman of the Vietnam Association for Urban Planning and Development ("Hà Nội Adjusts"). His vision focused on managing population growth, improving regional integration, and stimulating economic development in areas that had not seen equal progress across Hanoi. To accommodate new growth and bring changes into a plan that has seen little development, the newly revised 2045 vision has introduced a restructured development model.

This new model keeps two out of the five satellite cities and reorganizes the rest into new "sub-cities. Sóc Sơn will be incorporated into the Northern City, while Hòa Lạc and Xuân Mai will become part of the Western City, leaving Phú Xuyên and Sơn Tây as the only remaining independent satellites (Cyrill). Each area is now assigned to a distinct specialization: the Northern City for logistics, the Western City for science, technology, and education, and the Southern City for trade and services (Cyrill). Phú Xuyên, located along national highways and rail lines, is envisioned as a logistics and industrial node serving as a gateway to southern provinces. Sơn Tây, farther west, is planned to preserve cultural heritage and ecological landscapes while developing a tourism economy. Together, these towns were expected to form a network of complementary urban centers. Critically, the eastern part of Hanoi is left out of this plan, which could be due to the separation of this area from Hanoi's central area by the Red River.

However, implementation has lagged significantly behind these ambitions. Transport connectivity between the satellite towns and the urban core remains underdeveloped, limiting their attractiveness to investors and residents alike ("Hà Nội Adjusts"). The provision of public services such as schools, hospitals, and housing also trails behind, leaving these areas underpopulated and economically stagnant. This illustrates the difficulty of turning long-term visions into functioning urban environments.

Son Tay and Phu Xuyen

Among the satellite cities proposed in Hanoi's 2011 master plan, Phú Xuyên and Sơn Tây remain the only two left in the government's revised urban strategy. While other planned towns, such as Hòa Lạc and Xuân Mai, have been reabsorbed into broader "cities within the city," these two areas have retained their status as key nodes in the capital's polycentric vision.

Located in the southernmost part of Hanoi, Phú Xuyên was envisioned as an industrial and logistics hub designed to redistribute economic activity away from the overcrowded urban core. Its selection as one of the remaining satellite cities in the 2045–2065 revised plan highlights its strategic position as a gateway to the south. The area lies along major transport axes, including national highways, planned high-speed rail lines, and the Red River waterway system, making it an ideal site for industrial expansion and goods transshipment. Government documents

emphasize its potential to host food processing, export-oriented manufacturing, and warehouse clusters, along with large-scale freight forwarding facilities (Cyrill). Beyond its logistical role, Phú Xuyên's low-lying terrain and network of lakes and canals make it an important ecological buffer for flood management, offering opportunities for integrated water-based planning and green industrial design. Critical industrial zones in Phu Xuyen include the HANSSIP industrial park and the Phu Yen craft village industrial cluster.

In theory, this development model offers several benefits. By absorbing factories and workshops relocated from Hanoi's inner districts, Phú Xuyên could help reduce congestion and pollution in the core city while generating new employment opportunities in its outskirts. The construction of worker housing and industrial service zones would also help stabilize migration patterns, creating a more balanced distribution of jobs and living spaces across the metropolitan region.

Yet, progress on the ground has been far slower than envisioned. Despite being designated as a priority zone for development, Phú Xuyên remains largely underbuilt. Many of its detailed zoning and land-use plans have yet to be finalized, leaving vast areas in limbo and discouraging investors from committing capital. A 2021 article noted that several approved industrial parks still exist "only on paper," with limited public services, few operational facilities, and minimal residential occupancy (VietNamNet). Transport connectivity also lags: highways and rail extensions are either incomplete or delayed, restricting the area's accessibility and commercial potential. This shows a dilemma in government-led planning: there is a gap between the planned visions and the institutional capacity required to implement them. The HANSSIP industrial park, covering 640 hectares and projected to employ around 30,000 workers, has been in development for over five years. In addition, although promising to bring a metropolitan area with many amenities such as housing and malls, there are currently no plans in the development for these aspects. The Phu Yen craft village center has also been under construction since 2023, with no near projected completion date.

Alongside Phu Xuyen is Son Tay, a satellite city planned to be the center of cultural tourism in Hanoi. Located in the northwest, Sơn Tây has long been recognized for its historical value, home to landmarks such as the ancient Đường Lâm village, Sơn Tây Citadel, and Và Temple. The government's revised plan expands its boundaries to include nearby ecological zones such as Ba Vì and Suối Hai, framing it as both a cultural and environmental gateway for the capital (Cyrill). The intent is to transform Sơn Tây into a sustainable urban center that preserves Hanoi's rural identity while developing modern tourism, education, and service industries.

This vision aligns with broader goals of cultural preservation and green development. Recent public investments, such as a 500 billion VND wastewater treatment facility serving 400 hectares of the town, illustrate growing attention to environmental infrastructure (Khanh An). The focus on tourism and heritage industries offers economic potential without the heavy industrial footprint of other satellite zones, appealing to both domestic visitors and foreign investors interested in eco-heritage tourism.

Nonetheless, Sơn Tây faces challenges similar to Phú Xuyên's. Despite policy support, its connectivity to the metropolitan core remains limited, with insufficient public transport and road infrastructure slowing investment and commuter movement. The area's hilly terrain and ecological constraints also limit large-scale development, requiring a careful balance between conservation and modernization. Moreover, tourism and cultural projects tend to generate lower immediate returns than industrial ones, making it harder to attract private financing without state incentives. Institutional coordination across cultural, environmental, and planning agencies further complicates progress, resulting in delays in zoning and project approval (Hanoi Times).

Taken together, Phú Xuyên and Sơn Tây illustrate the contrasting faces of Hanoi's state-led satellite city strategy. While the government's vision emphasizes equity, order, and long-term spatial balance, the practical challenges of financing, connectivity, and institutional coordination continue to delay tangible outcomes. These cases reveal a fundamental problem: Hanoi's most ambitious plans often lack the infrastructural and administrative coherence needed to bring them to life.

Private New Urban Areas

In contrast to government-led satellite city projects, private new-urban areas have emerged as the most visible and rapidly developing form of urban expansion around Hanoi. These privately financed projects, such as Vinhomes Smart City (Nam Từ Liêm District), Ecopark (Văn Giang, Hưng Yên Province), and Gamuda City (Hoàng Mai District), represent an alternative approach to decentralizing growth. Rather than constructing independent satellite cities from scratch, these developments create "self-contained city-in-city environments" within or just beyond the capital's boundaries. They combine residential, commercial, and recreational functions within master-planned compounds that appeal to the rising middle class (Tarigan). The speed and scale of these projects underscore the increasing role of corporate capital in shaping Hanoi's urban form. Companies such as Vingroup, Ecopark Corporation, and Gamuda Land operate under a profit-driven model that integrates housing, amenities, and retail spaces from the outset, allowing early real estate sales to fund ongoing construction. This contrasts sharply with state-led satellite cities, which depend on public budgets and fragmented administrative coordination. For example, Vinhomes Smart City markets itself as a "comprehensive smart urban ecosystem," complete with international schools, shopping centers, sports parks, and high-rise apartments designed around digital infrastructure (Vinhomes). Similarly, Ecopark promotes its identity as an "ecological township," with an emphasis on green space, lakeside living, and educational facilities such as British University Vietnam and the Sakura Montessori School. The integration of such features from the beginning allows these projects to generate both revenue and social desirability, sustaining a self-financing cycle of urban growth. In addition, it is worth noting that these private urban projects have a clear focus on residency, unlike government satellite areas, where industrial development seems to come first. Private urban areas also focus on smaller goals as compared to government satellite cities, which might be easier for investors to envision and feel safer to invest in.

From a governance perspective, these projects also benefit from streamlined administrative processes. As most are developed under public-private partnership or provincial approval frameworks, they often bypass the bureaucratic complexity that hinders government-led initiatives. In Ecopark's case, cooperation between Hưng Yên Province and the developer resulted in rapid progress: within a decade, the area transformed from agricultural land into a township housing more than 30,000 residents (Thuy Linh). This demonstrates how flexible regulatory environments can accelerate urbanization when driven by commercial incentives and coordinated governance.

However, the appeal and success of private new-urban areas also reveal structural inequities in Hanoi's urban development. Because developers prioritize return on investment, they primarily target upper-middle and high-income groups, producing enclaves of affluence rather than socially mixed communities (Tarigan). Moreover, while private developers excel at building residential and commercial spaces, they rarely provide sufficient public services such as healthcare facilities, public schools, or low-income housing. This imbalance can exacerbate inequality and limit the inclusive potential of these developments. Critics have also pointed out that some projects, despite their "eco" or "smart city" branding, remain heavily dependent on private car usage and gated-community layouts, reinforcing patterns of exclusivity rather than sustainable urban integration ("Vinhomes Ocean Park").

Environmental sustainability represents another point of contrast. Projects like Ecopark and Gamuda City emphasize green design and environmental marketing, but large-scale land conversion for private developments still poses ecological risks. Wetlands, agricultural fields, and peri-urban green spaces are often transformed into artificial lakes or golf courses to attract high-end buyers. Although these transformations may improve microclimates and aesthetics, they simultaneously reduce agricultural resilience and biodiversity. In this sense, private-led "eco-urbanism" can both mitigate and reproduce the environmental challenges of rapid urbanization, depending on how its design principles are implemented.

Ocean Park

Vinhomes Ocean Park illustrates how these dynamics operate in practice. Located in Gia Lâm District, Vinhomes Ocean Park is one of Vietnam's largest privately developed new urban areas. Built by Vingroup, the country's most powerful real estate conglomerate, the project embodies the "city-in-city" model at a commercial scale. Spanning over 420 hectares, it integrates high-rise apartments, villas, malls, educational institutions, healthcare facilities, and recreational amenities—most notably, an artificial saltwater lagoon and a large central lake.

The project was developed on land that was formerly a mix of agricultural fields and small villages. It lies on the eastern side of Hanoi, separated from the central city by the Red River. Despite this separation, marketing capitalized on the government's plans to expand transportation infrastructure. This demonstrates how private initiatives often follow state-led cues while executing projects with greater speed and autonomy.

Economically, Ocean Park has contributed to the rapid transformation of Gia Lâm District. Since construction began in 2018, surrounding land values have increased dramatically, and the district's population has surged. Commercial and service activities have followed residential growth, with smaller businesses and retail outlets clustering around the development. This district-level transformation highlights the potential of large private developments when capital, planning, and infrastructure converge.

However, Ocean Park also exposes structural tensions inherent in market-led urbanization. Despite its scale, it remains socioeconomically exclusive, with apartment prices and service costs beyond the reach of lower-income workers. Its internal amenities and semi-gated layout reinforce spatial separation from surrounding communities, while commuting to the city center still largely depends on private vehicles. Although Vingroup promotes Ocean Park as a "smart city," many of its technological features prioritize convenience and branding rather than long-term sustainability or integration with Hanoi's public transport networks.

Urban researchers and planners have further noted that Ocean Park raises questions of governance coordination. Unlike government-led satellite cities, which fall under comprehensive public master plans, Ocean Park's planning and management are largely corporate-controlled. This enables rapid implementation but limits the state's capacity to integrate the development into broader metropolitan systems. As a result, while Ocean Park functions successfully as a standalone city-in-city, it remains weakly connected to surrounding industrial zones and operates more as a separate residential enclave than as a fully integrated component of Hanoi's urban region.

Conclusion

The divergent trajectories of government-led satellite cities and privately developed new urban areas in Hanoi reveal a fundamental relationship between planning ambition and implementation capacity. Both approaches stem from the same challenge, but they operate under contrasting logics. Government projects emphasize long-term balance and public service provision, while private projects prioritize speed, profitability, and consumer satisfaction. These differing logics produce distinct outcomes, advantages, and limitations.

In theory, the government-led satellite city model offers a more comprehensive and equitable framework for metropolitan development. Areas like Sơn Tây and Phú Xuyên were envisioned to absorb population growth, provide affordable housing, and decentralize economic activity. Their planned functions (science and technology in Hòa Lạc, industry in Phú Xuyên, culture and tourism in Sơn Tây) reflect a vision to build a balanced urban system that integrates economic diversification, housing, and environmental preservation. However, this pursuit of multiple objectives requires extensive coordination across ministries, funding channels, and local authorities. This complexity leads to slow implementation.

Meanwhile, private developments like Vinhomes Ocean Park have a narrower focus. They concentrate on the delivery of housing and lifestyle amenities for specific market segments. This streamlined objective allows developers to mobilize capital efficiently, phase construction

according to demand, and quickly create a tangible urban environment. Their success demonstrates that focused, market-driven planning can achieve rapid physical transformation. However, this efficiency comes at the cost of inclusivity and integration. By catering to higher-income residents, private projects reproduce spatial inequality, leaving lower-income workers confined to overcrowded and substandard housing elsewhere.

Interestingly, one notable unrealized aspect is the fact that many satellite cities are strategically better positioned than private new urban areas. Phú Xuyên, for instance, sits at the intersection of national highways and rail lines, linking Hanoi to major industrial zones in the Red River Delta. This location makes it ideal for logistics and industry, which should attract a steady workforce and foster economic development. Similarly, Sơn Tây, with its rich cultural heritage and ecological landscapes, has the potential to become a sustainable tourism and heritage hub. Yet, the absence of investment incentives, limited infrastructure, and insufficient coordination has left these areas underdeveloped.

Thus, a crucial challenge for the government-led model is attracting private investment to lower-income or less profitable areas. Satellite cities, by design, aim to serve middle- and working-class populations. Without guaranteed returns, investors are reluctant to commit to these zones, especially when basic infrastructure and amenities remain incomplete. This dynamic highlights a central problem: the state expects private capital to support socially oriented development, but the private sector relies on profitability, not socially oriented goals. Unless the government introduces stronger fiscal incentives, subsidies, or risk-sharing mechanisms, the investment gap between socially necessary and economically attractive areas will persist.

Another important dimension to consider is how the scope of governmental objectives affects outcomes. While private developers target a single aspect of urban life (residential environments), the government aims to design entire urban systems, combining housing, industry, culture, and environment. This integrative vision is commendable and necessary for sustainable urbanization, but it also makes implementation more difficult. For example, Sơn Tây's role as both a cultural preservation zone and an urban growth pole places conflicting demands on land use and infrastructure development. Similarly, Phú Xuyên's planned industrial expansion must balance environmental protection and social equity.

Taken together, the comparison between satellite cities and private new urban areas underscores that Hanoi's urban future cannot depend solely on either model. Satellite cities offer the vision of balanced, inclusive development, but lack the mechanisms for efficient realization. Private projects demonstrate dynamism and innovation but fail to address deeper questions of affordability and public connectivity. The challenge, therefore, is to design a governance framework that incorporates not only infrastructural coordination but also policy tools that align market incentives with social goals.

Ultimately, the contrasting experiences of Sơn Tây, Phú Xuyên, and Ocean Park reveal that Hanoi's urban transformation is not a simple matter of state versus market, but rather a question of how vision, investment, and inclusion can coexist within a shared metropolitan framework.

Acknowledgements

I would like to acknowledge the support of Mr. Jefferson Yang in conducting this research. I would also like to acknowledge the help of Mr. Nate Buettner in preparing this manuscript.

Works Cited

Chen, T. L., et al. “How Do East and Southeast Asian Cities Differ From Western Cities? A Systematic Review of the Urban Form Characteristics.” Sustainability, vol. 12, no. 6, 2020, p. 2423, https://doi.org/https://doi.org/10.3390/su12062423.

Cugurullo, Francesco. “Exposing Smart Cities and Eco-Cities: Frankenstein Urbanism and the Sustainability Challenges of the Experimental City.” Environment and Planning A: Economy and Space, vol. 50, no. 1, 2018, pp. 73–92, https://doi.org/10.1177/0308518x17738535.

Cyrill, M. “Hanoi’s Master Plan 2045-2065: Major Goals and Investment Prospects.” Vietnam Briefing News, 7 Jan. 2025, https://www.vietnam-briefing.com/news/hanoi-master-plan-2045-2065-major-goals-and-investment-prospects.html/.

Douglass, M., and L. Huang. “Globalizing the City in Southeast Asia: Utopia on the Urban Edge–the Case of Phu My Hung, Saigon.” International Journal of Asia Pacific Studies, vol. 3, no. 2, 2007.

Hanoi Times. “Hanoi 2045 Planning Outlines Clear Vision for Its Urban Spaces.” Hanoitimes.Vn, 2024, https://hanoitimes.vn/hanoi-2045-planning-outlines-clear-vision-for-its-urban-spaces-327426.html.

Khanh An. “Hanoi Spends More Than 500 Billion VND to Build a Wastewater Treatment Plant in Son Tay Town.” Lao Động, 11 Apr. 2025, https://news.laodong.vn/xa-hoi/ha-noi-chi-hon-500-ti-dong-xay-nha-may-xu-ly-nuoc-thai-o-thi-xa-son-tay-1489766.ldo.

Permanasari, E., et al. “Urban Expansion in South Tangerang: Analyzing Bintaro Jaya as a Private City.” Cities, vol. 144, 2024, p. 104665, https://doi.org/https://doi.org/10.1016/j.cities.2023.104665.

Phê Duyệt Điều Chỉnh Quy Hoạch Chung Thủ Đô Hà Nội Đến Năm 2045, Tầm Nhìn Đến Năm 2065. Văn Bản Chính Phủ, 2024, https://vanban.chinhphu.vn/?pageid=27160&docid=212179.

Potter, C., and D. Labbé. “Gentrification or ...? Injustice in Large-Scale Residential Projects in Hanoi.” Urban Studies, vol. 58, no. 12, 2021, pp. 2456–72, https://doi.org/10.2307/27086436.

Roy, A. “Why India Cannot Plan Its Cities: Informality, Insurgency and the Idiom of Urbanization.” Planning Theory, vol. 8, no. 1, 2009, pp. 76–87, https://doi.org/10.2307/26165886.

Tarigan, S. “Private Cities and Consumption: Urban Development Patterns in Southeast Asia.” Malaysian Journal of Sustainable Environment, vol. 9, no. 3, 2022, pp. 163–79, https://doi.org/10.24191/myse.v9i3.18296.

Thanh, N. “Hanoi Workers Living in Subpar Conditions.” VnExpress International – Latest News, Business, Travel and Analysis from Vietnam, 20 Feb. 2022,

https://e.vnexpress.net/photo/news/hanoi-workers-living-in-subpar-conditions-4428711.html.
Thuy Linh. “Eco-IP to Transform Bac Ninh’s Fortunes.” Vietnam Investment Review - VIR, 10 July 2023, https://vir.com.vn/eco-ip-to-transform-bac-ninhs-fortunes-103372.html.
Vietnam News. “Hà Nội Adjusts General Planning With Two Satellite Urban Areas.” Vietnamnews.Vn, 6 Nov. 2025, https://vietnamnews.vn/society/1636159/ha-noi-adjusts-general-planning-with-two-satellite-urban-areas.html.
———. “Vinhomes Ocean Park: ‘A Miniature City for the Intellectual Community..’” Vietnamnews.Vn, 8 Mar. 2021, https://vietnamnews.vn/brand-info/897019/vinhomes-ocean-park-a-miniature-city-for-the-intellectual-community.html.
VietNamNet. “Hanoi Satellite City Still a Pipe Dream Five Years After Approval.” VietNamNet News, 2021, https://vietnamnet.vn/en/hanoisatellite-citystill-a-pipe-dream-five-years-after-approval-704955.html.
Vinhomes. “Dự Án Vinhomes Smart City, Cập Nhật Thông Tin Mới Nhất.” Vinhomes.Vn, 2023, https://vinhomes.vn/vi/Vinhomes-Smart-City.
Yip, N. M., and H. A. Tran. “Is ‘Gentrification’ an Analytically Useful Concept for Vietnam? A Case Study of Hanoi.” Urban Studies, vol. 53, no. 3, 2016, pp. 490–505, https://doi.org/10.2307/26151041.

Opinions Matter: The Importance of Perceptions Towards Vitiligo
By Kayla Sapienza

Introduction

Unfortunately, individuals who appear "different" or "odd" to others are typically avoided. It could include those who may be handicapped, disabled, or solely have distinct characteristics. This specifically relates to vitiligo; a long-term, auto-immune disease characterized by patches of the skin losing its pigment. This occurs when the cells responsible for producing skin pigment, or melanin, die or stop functioning. It is mostly recognized by the white patches that appear on an individual's skin, which can vary depending on genetics, health, stress, and other unexpected factors. Most spots of vitiligo appear on the face and hands, but it could unpredictably show up on other areas, even having the possibility to turn the body completely white (Porter & Beuf, 1991). It is not specific to certain people, however, depending on family history, vitiligo can begin to appear at any age. Although the skin condition does not affect the individual's health directly, there are outside factors that could play into how they may feel about themselves due to other people's perceptions, attitudes, and actions towards them. People have various opinions of those who have vitiligo, both positive and negative, but what matters is that whatever is said or assumed about those with the condition can affect the individual. Although there are many people who do recognize and understand the condition, misconceptions are just as common, proving that the lack of awareness can lead to further confusion and assumptions.

However, there are ways that society can assure that they can educate themselves about vitiligo, preventing the incorrect claims that are typically made about it, leading to the question: What factors have influenced prior beliefs about vitiligo and how do people's perceptions change after watching a video focused on the condition? There are various actions that can be made to ensure that the world is able to learn more about vitiligo, as even the smallest forms of teaching can have an impact on those who wish to be understood, as the constant presumptions cause them to struggle. Simple steps emphasizing the importance of minimizing the negative perceptions of vitiligo will prove the necessity of educational strategies that drive people towards an educated understanding, where exposure to a video focused on vitiligo will significantly increase viewers' knowledge about the condition and lead to a more positive attitude towards people who have it.

Fundamentals of Vitiligo

The history behind vitiligo is complex, containing multiple factors that play into what causes the condition. From genetics to immune system attacks, its appearance may be unpredictable in some cases. However, the root of vitiligo is commonly seen in a person's genetic code, making it highly heritable. Due to the body's immune system mistakenly targeting and destroying the pigment-producing cells, the genes that regulate the immune system may

become more aggressive or prone to misidentification of certain cells. There may be, however, different factors, other than genes, that can lead to the loss of pigment in an individual's skin, since there are several forms of vitiligo with separate mechanisms (Henshel, 1971). Along with this, environmental or physical factors can also trigger the condition. This could be ultraviolet radiation, stress, alcohol and tobacco consumption, or even other autoimmune disorders, like type 1 diabetes, which is seen to either occur following the vitiligo, or arrive prior and cause the start of it. Although, due to the significance of such factors, as well as genetic inheritance, that play into the fundamental causes of vitiligo, it may seem like it would increase the prevalence of the condition. However, despite how "often" such situations occur to individuals prone to autoimmune diseases, the commonality is not as high as one would assume. A meta-analysis assessing the prevalence of vitiligo provides statistics stating that, "Pooled prevalence of age-groups in 0~19 years, 20~39 years, 40~59 years and ≥60 years were 0.2% (0.2%, 0.3%), 0.2% (0.1%, 0.3%), 0.4% (0.3%, 0.6%) and 0.7% (0.3%, 1.0%), respectively. The prevalence of vitiligo increased with age gradually" (Zhang et al., 2016, p. 4). This quote proves that as groups of individuals get older, obtaining vitiligo is much more common. Whereas, developing hypopigmentation, a symptom of vitiligo resulting in little or no pigment, typically emerges at a younger age. With this evidence, it can be pieced together that the amount of people with or without the condition may be playing a role on the ability for awareness to make its way around communities. At an older age, vitiligo is more commonly accepted because it appears more often. However, for young adults or teens, they may focus on what is considered perfect or welcomed, where if they notice an unfamiliar look to these individuals their age, it can lead to avoidance. Relating to the effects of a lack of awareness towards individuals with vitiligo, a study comparing the causes of vitiligo for patients with the condition shows, "When cases and controls were compared with regard to stressful life events, social support, attachment and alexithymia, the following findings emerged (table 2). Cases and controls did not differ with regard to the total number of stressful events experienced" (Picardi et al., 2003, p. 4). The chart provided in the study shows that there is close to no difference between individuals who obtained vitiligo through the absence of support and connections compared to those who acquired the condition for separate reasons. This connects to Zhang et al.'s source by showing that outside factors like certain interactions have an effect of vitiligo, showing that with lack awareness of the condition, it can sprout or cause further spread of the patches. Stressful life events are commonly shown in triggers to vitiligo, described in a study where patients with the condition have much higher stress scores (Picardi & Abeni, 2001).

Influences of Opinions Towards Vitiligo

Unlike highly prevalent skin conditions such as acne or eczema, many people do not have a personal connection to or direct interactions with someone who has vitiligo. This lack of commonality means the public is less likely to gain knowledge organically, leaving room for misconceptions and misinformation to take place. This also takes place on social media, where anyone can make assumptions about vitiligo and spread false ideas and details. It is not difficult

for faulty news to spread, so there is no difference between how easy individuals will believe the start of trends, political actions and views, or facts about life or education, compared to how easy they could believe random claims made towards vitiligo. Related to this fallacious media, almost everything on several platforms is now either highly edited or staged now that extensions like artificial intelligence and photoshop have evolved. People typically post exaggerated versions of their lives, painting an alleged perfect and curated life, which leads to social comparison, resulting in many of those with vitiligo to have strong feelings of low self-esteem, making it rarer to see people who proudly post and share their patches, most likely in fear of being judged or not receiving the approval and support they would hope for. The fewer posts there are surrounding vitiligo, the less awareness there will be. However, society today is still not used to individuals who appear different than them, where a study affirms, "Impaired appearance, especially when highly visible, is a categorical stigma of this type. People react negatively to those whose appearance is not consonant with cultural standards of beauty (Berscheid and Walster 1974; Dion, Berscheid, and Walster 1972; Landy and Sigall 1974; Mercer, Andrews, and Mercer 1983)" (Porter & Beuf, 1991, p. 2). People don't exactly have a frame of reference regarding vitiligo, making it prone to being misrepresented. Along with avoidance, it is possible that people may see the condition as a threat, or a common assumption, contagious. The belief that vitiligo is contagious is extremely popular, even to those who may be more aware of the condition. Yet, even when rebutted, many are not fully convinced otherwise, and still believe that vitiligo is an autoimmune disease that it infectious or transmissible from human to human, due to both jumping to conclusions and possibly, yet rarely, mistaking vitiligo for leprosy, a bacterial infection, where the starting visual symptoms include white patches on the skin. The comparison between the two can cause misinterpretation, avoidance, disgust, and further negative perceptions of vitiligo, which a book describes a first-person opinion, "I could not remove the concern from my mind. Benito, Elizabeth's son, had these stains all over his body. He never went to see a doctor. He is now dead and I am not ready to suffer his fate" (Duncan, 2019, p. 2). Although being new to vitiligo may be slightly frightening, it is nothing to be entirely scared of. Relating back to assuming vitiligo may be some sort of dangerous infection, if an individual does their research on the condition that they believe it is, they will form faulty opinions towards vitiligo, thinking it is something else. Another example of this is shown when linking avoidance to those with diseases, "Once a person has learnt the meaning of a particular label (e.g. HIV +), contact with a person bearing that label (e.g. person X is HIV+) may evoke activation of the model's first component—disgust" (Oaten et al., 2011, p. 6). Even though it is certainly not common to directly ask an individual what their visible condition is, even less what it means or if it is infectious or not, curiosity should be exercised positively, used to help those who are struggling to spread awareness towards their condition.

Gap in the Research

Previous research supports the claim that genetics, assumptions, and avoidance play a role in what individuals may think of vitiligo. With descriptions that relate to the negative effects

of these factors, as well as generic history behind the condition, past studies and articles thoroughly explain how conditions and disabilities have different perceptions and can obstruct their ways of living in society (Mattila & Papageorgiou, 2017). However, this former research lacks the expansion of a wider range of groups that can be tested, presenting a population gap. Although it effectively focuses on the impacts made from perceived discrimination, it centers around political participation, which closes off the discrimination that also occurs to those who are younger than 18, and cannot vote or participate in politics. Additionally, the research limits the effects of additional outside factors that play a role in how each individual participated politically, where their decisions are not solely based on whether they are discriminated against or not. Another source, represents a knowledge gap, being short of being specific to certain disabilities, like vitiligo, to include in the research. Even though it explains the engagement of the aesthetics of disabilities relating to discriminatory behavior (Harris, 2019) in extreme detail, there are no findings or answers present that lead to a well-understood conclusion.

Hypothesis and Assumptions

It is a well-known fact that the internet and social media leave a lasting effect on one's views, perspectives, and additional thoughts or feelings. When bringing attention to something over the internet, it is important to make sure the contents attract audiences and keep hold of their attention. Due to this, I assume that a video is the best way to keep participants engaged when watching something easy to comprehend and pay attention to. Also, because of the powerful effects the internet conveys on people, I assume that using the chosen video for this research study, participants' opinions towards vitiligo may change positively, gaining a new perspective of the struggles and life-changing aspects that the condition can bring into someone's life.

With this, I hypothesize that exposure to a video focused on vitiligo will significantly increase viewers' knowledge about the condition and lead to a more positive attitude toward people who have it because of the strong impact of what is displayed on the internet and the realization of factors of vitiligo that may not have been addressed to society prior to the video.

Study Design

This study focuses on the opinions and perceptions of vitiligo, as well as the changes made in these views after watching a video surrounding the condition. The goal of this study is to determine how much of a difference watching an educational video can clear common misconceptions towards vitiligo. This is important because effects like social issues, insecurities, anxiety, and other negative mental issues may sprout from discrimination or any sort of purposeful avoidance of those with vitiligo. It may seem like simple videos do not leave as much of an effect on audiences as expected, and although in certain cases it is true, specific types of videos like TED Talks, which is included in my research for participants taking the survey, provides a different perspective on the given subjects. "More than 90% of students (N = 51) reported that the TED Talks and the thinking tasks helped them understand the course material,

motivated them to participate in class, and encouraged them to think about their personal experiences...” (Yuksel, 2018). However, with the use of the survey and the provided video for participants, awareness towards how those with the condition are greatly affected due to assumptions and exclusion will increase and allow others to become more informed about vitiligo and its normality.

This study was conducted with a qualitative method, and the data was collected through a survey. Using a qualitative method allowed for detailed inputs of individuals’ opinions before and after a description of vitiligo was given, as well as an educational video of a specific individual, Lee Thomas, was provided. The survey includes various questions about participants’ knowledge of vitiligo, specifically their personal thoughts on the condition, before and after given information throughout the survey, precise information regarding each person’s connection to the condition, such as directly having vitiligo, or knowing a friend or family member with the condition, and particular details centered towards participants’ gender, age, and relation to anyone who they may know with the condition, including friends, family, and even themselves to use findings and discover trends or patterns depending on the given responses.

Subjects

The subjects in this study were centered towards both teenagers and adults. The specific age associated with the survey is from 13 to 95 years old, all common ages where people both do and do not know about vitiligo. These are also common ages where vitiligo may start to develop, most commonly around when an individual is in their 30s, or have a close genetic connection to the condition, where it may have been passed down. Participants include people who may have vitiligo themselves, have a friend or family member with the condition, or those who may have just been interested in the goal to spread awareness about fallacies that circle around the topic of vitiligo. The subjects also vary by how much they originally know about vitiligo prior to the provided description and video, allowing for vast results that range from little to no knowledge about the condition, to complete understanding. Additionally, this specific information given by the subjects provides similarities and correlations found relating to how those with vitiligo are affected based on how they are commonly viewed in society.

Research Instruments

The data collection method used in this study was a survey, distributed online through Google Docs. The survey’s main goal was to identify both general and specific ideas and opinions that participants have towards vitiligo. It was also designed to gather data on initial perceptions of vitiligo to be compared to the changes made after the video included in the survey is watched. The findings made by each person’s differences in perspective contributed to the comparisons that I made due to the variety of responses that each participant could include.

Table 1

Perspectives Towards Vitiligo Survey

Question	Response Options
1. I have read the overview provided above, and I consent to participate in this survey.	Agree
2. Please enter your age	Drop down from 13-95
3. Please choose your gender	Male Female Other Prefer not to say
4. How often do you use social media?	Never Sometimes Often Always
5. What type of social media platform(s) do you use? Please select all that apply.	TikTok Instagram Snapchat YouTube Facebook Twitter Reddit
6. Have you ever heard of vitiligo?	Yes No Maybe
7. What are your current thoughts and/or understanding of vitiligo? If answered no or maybe to the previous question, make a guess.	Fill in text box
8. Vitiligo is a long-term condition characterized by patches of the skin losing their pigment. This occurs when melanocytes, the cells responsible for producing skin pigment (melanin), die or stop functioning. It can affect any part of the body, including the hair and the inside of the mouth. The exact cause of vitiligo is unknown, but it is thought to be an autoimmune condition where the body's immune system attacks and destroys the melanocytes.	
9. Now that you have read the description, have you heard of vitiligo?	Yes No
10. If you have not already responded to question #4, after reading the description, what are your thoughts or understanding of vitiligo?	Fill in text box
11. Do you have any family members or friends who have vitiligo?	Yes No Maybe
12. If yes, please input their age, gender, relation to you, and when (if known) they were diagnosed with the condition or first noticing vitiligo spots. Please fill in each individual if there is more than one.	Fill in text box
13. If responded to family members specifically, does your family have a history of vitiligo?	Yes No

	Not sure
14. What factors such as experiences, prior knowledge, or media affected your perceptions of vitiligo? Please be specific.	Fill in text box
15. Do you believe that vitiligo is contagious?	Yes No
16. Please watch this video by Lee Thomas:	
17. After watching the provided video, how has your overall understanding of vitiligo changed?	Significantly more informed Slightly more informed No change Slightly less informed Significantly less informed
18. If your understanding of vitiligo changed, please list all the changes made.	Fill in text box
19. How has your level of empathy or understanding towards individuals with vitiligo changed after watching the video?	Greatly increased Moderately increased Slightly increased No change Slightly decreased Moderately decreased Greatly decreased
20. Which aspects of vitiligo, as described in the video, surprised you the most? Please be specific.	Fill in text box

On the left side of the survey are the questions provided for each participant regarding some of their information, views, and changes made after watching the video that is provided. It focuses on both pinpointing which individual is familiar and not familiar with vitiligo, as well as ideas surrounding certain personal details that contribute to the study who vitiligo may typically affect, all playing a role in how those with the condition may be affected differently in specific cases. On the right side, the questions in this survey contain varied forms of response, ranging from multiple choice options, drop down menus, to filling in text boxes. This allowed for both narrow and broad responses that are both crucial to the research.

A video surrounding the details and emotional effects of vitiligo was chosen for participants to watch to understand deeper truths about the condition, possibly altering prior opinions that each participant had about it. This video is specifically a TED Talk by Lee Thomas, an Emmy-winning entertainment reporter, who shares his experiences and life lessons with vitiligo. Participants were instructed to play the 16-minute video and gather insight on what information they gained or recollected.

Figure 1: *Image of Lee Thomas, TED Speaker in 2019*

Participants were asked questions that relate to what they knew before they watched the video, as well as after. The first 5 questions provided gathered information on any background knowledge each person may have, followed by the next 7 questions for additional opinions after a description of vitiligo is given, and the final 4 questions after participants have watched the video.

Procedures

All participants agreed to a consent question requesting detailed responses and data that is specific to the research. Each person volunteered to continue to participate after being made aware of what is being conducted, what is expected, and what is provided. Participants' personal data further than their age, gender, and certain family details were kept anonymous, ensuring the safety and privacy of each person who chose to participate in the survey. Individuals were allowed to leave the survey, as well as choose to not participate altogether if the requested information made them uncomfortable at any point. An important factor considered in this survey was assuring that the questions asked in my survey were appropriate and contributed to the purpose of my research. It is important to consider what questions are asked to ensure that people would comfortably take my survey. Making sure the respondents fully understand what they are being asked allows them to give an appropriate answer (Kalton & Schuman, 1982). With the given finalized results, each participants' responses were compared to each other to check for any common patterns.

Ethical Considerations

A major factor of this study was ensuring that participants were willing to watch the video provided to them, as well as assuring that their involvement was voluntary, and were allowed to end their participation at any time without penalty. No personal or private data that individuals were unwilling to share was collected, as well as no alterations to results were made. Furthermore, this all contributes to the consent question at the very start of the survey, allowing

for participants to immediately be made aware of what they should expect to be asked throughout the questionnaire.

Delimitations

Certain factors were not included for the research to ensure all the information received is necessary and not unreasonable in any way. This included details like what sources were included in the survey to effectively receive each participants' personal opinions with a clear source to base their responses on. For example, the choice of excluding a separate form of given information for the participants in the survey was due to the accommodability for all participants within the age range. This was to ensure that respondents could watch a video that could keep their attention rather than a long article that may lower the chances of full or truthful responses from participants. Another exclusion made was having any follow-up surveys or interviews for individuals to participate in. This is because the desired focus of the study is to gather information about general perceptions of vitiligo, rather than further specific questions that may be harder to get people to participate in or feel comfortable doing. It also ensures that each respondents' changes in perception were made solely off the provided video in the original survey for precise data about its effects.

Limitations

Various limitations that came up during the research varied from participants of the study to the questionnaire in the survey. Firstly, the amount of people who either have vitiligo or personally know someone with vitiligo is rarer than expected. This could cause a setback in my results with limited participants than anticipated. Secondly, there is a high possibility that certain participants may have not been honest when responding to each question in the survey. This could have included age, gender, their perceptions of vitiligo, or most likely if each person truthfully watched the provided video in its entirety. There is a limitation to how likely participants watched the full video that the survey centers on, due to its time stamp most likely being undesirably lengthy. With a 16-minute video about vitiligo, more individuals may have backed out of the video or even the survey itself, not allowing for either truthful or ideal amounts of participants as originally hoped for. Additionally, faulty information could have been given as responses relating to the participants' opinions towards vitiligo. This could most likely be because of uncertainty of what sort of research is being collected, leaving participants hesitant to leave honest perspectives, especially if their ideas are primarily negative. This sets an extreme boundary to what the report aims to focus on, limiting expected results and sufficient data. Also, the number of participants for the survey does not portray the perceptions of the broader public due to limited respondents. Furthermore, limitations to what questions are best to be asked is present due to the broad idea of perceptions of vitiligo. Although certain questions were specific, the general questions may have been repetitive, to accommodate the research that was conducted.

Survey

Qualitative data was gathered from the survey to determine participants' prior knowledge and opinions towards vitiligo. Questions consisted of general, multiple-choice questions, as well as more specific questions that requested thorough fill-in-the blank responses to correctly evaluate prior familiarity and whether changes were made in participants' judgement regarding the condition.

Social Media Use

The analysis revealed that social media use is a primary driver of how individuals perceive vitiligo. However, the type of platform used also influenced the degree of awareness. Participants in the younger cohorts (16–25) mainly used TikTok, Instagram, and YouTube. These platforms mostly consist of visual storytelling and a wide range of people who may look different to certain users. These participants reported higher exposure to vitiligo through influencers or models that they have seen on their social media. These apps were also used by participants who are in the mid-adulthood cohorts (26-45), where they also use additional apps like Snapchat, Reddit, and Facebook. This relates to ages 46 and up, who mainly use Facebook, Twitter, and occasionally TikTok, due to its growing popularity among all ages, who both reported seeing less vitiligo representation, primarily referring to the well-known pop star, Micheal Jackson.

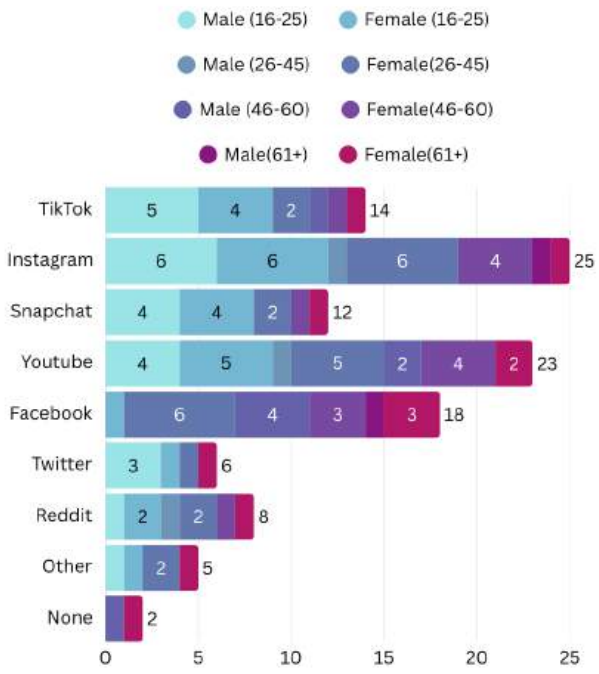


Figure 2: Reported Social Media Platform Usage and Frequency Among Participants

Age and Gender

As seen in Figure 2, age and gender were also shown to be as significant as the use of social media in how prevalent vitiligo was in the participants' daily lives. Both younger female and male participants demonstrated a higher range of awareness, commonly sharing that they were personally familiar with individuals who have vitiligo, typically described as a friend around the same age as them. Older male participants, however, generally viewed vitiligo through outside sources that were not directly related to them or their lives, and older female participants either knew people with vitiligo, or had the condition themselves. This data suggests that prevalence of vitiligo in one's life does depend on the individuals' lives, yet more younger participants more commonly recognized vitiligo and could describe the condition through their personal relationships, while older participants were mostly through what they have seen outside of their personal lives like television or social media.

Prior Knowledge

Assessments of prior knowledge showed how the understanding of vitiligo differs from participants who have friends or family with the condition, and participants who have no previous experiences or understanding. Participants who had family members who had or have the condition demonstrated significantly higher levels of empathy and a detailed explanation of what they know of the condition, as well as their specific opinions towards it. This was mainly revealed in individuals who specifically have family with vitiligo, where they have personal experiences and can comprehend certain complexities of vitiligo and its effects. These participants were more particular with their responses, and went into much more depth, where one participant, (19, Female, sibling with vitiligo, diagnosed at 9 years old shared, "A big factor that affected my perception of vitiligo was when we found out my sister had it. At the time of her diagnosis, I believe that I did not know about vitiligo yet, so my entire perception was based on how the doctors treated it. At the time, they prescribed her cream to help with it, but over time she no longer wanted to have to be applying it constantly. I thought that she shouldn't worry about it. After I began to use social media, I saw others with vitiligo and watched them make a conscious effort to educate the public and embrace the condition. This made it easier to defend my argument to my sister because I want to help her not be affected by what others say." In contrast, those with no personal connection often defaulted to generic understandings like how it causes discoloration of the skin and that it is an autoimmune disease.

Effects of Video

After participants watched the video, most responses consisted of a realization of factors about vitiligo that they did not already know, leading to explanations of how their opinions shifted positively. Most participants shared that their level of awareness increased after watching the video, mainly describing their surprise after learning that vitiligo can both come and go, where the video shares that the talk host lost the pigment of his entire face, causing a complete change in appearance.

Specifically, one participant shared, “The aspect that surprised me the most in the video was how much the presence of pigment can change. Even though I knew it can change around the body, I still found it surprising that there was a point where he lost all pigmentation in his face but then had most of it come back later.”

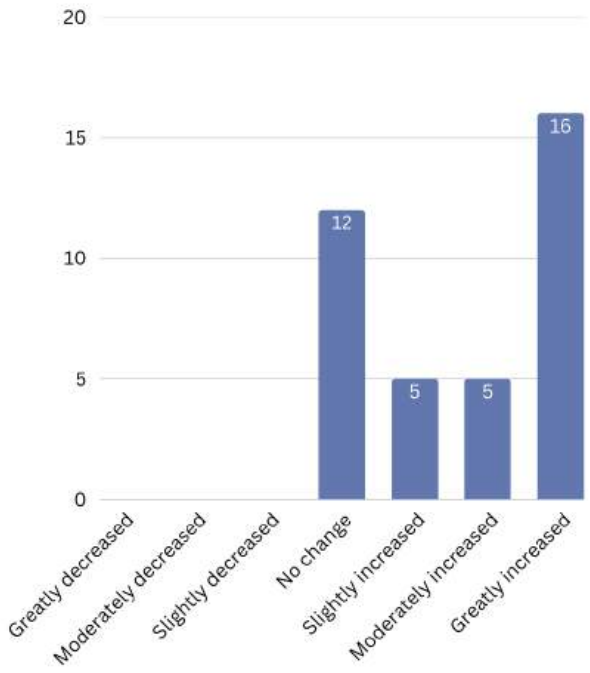


Figure 3: Self-Reported Knowledge Levels Post-Video Exposure

As shown in Figure 3, the effects of the video for many participants were similar, where the Likert scales data indicates that a vast majority of participants chose the option "Greatly increased” when it came to how their level of empathy changed after watching the video. The qualitative text boxes supported this, with many noting that they were unaware that those with vitiligo tend to be avoided and they receive negative responses in public.

New Understanding

The goal of this project was to determine whether watching a video about vitiligo alters perspectives towards the condition. Through a survey questionnaire, I collected sufficient data to answer my research question, gathering responses towards participants’ opinions both prior to the video and after. My new understanding is that multiple factors like social media influence, personal lives, and well-known celebrities all contribute to previous judgements about the condition, and people’s perceptions commonly changed gradually after watching a video focused on vitiligo.

Fulfillment of Gap

Previous research within the topic of vitiligo has largely focused on the appearance of skin disabilities in individuals, noting the frequency of discrimination that is often unfairly presented towards these people. This study has indicated that judgmental perceptions of those with certain conditions, including vitiligo, causes a decrease in political participation (Mattila & Papageorgiou, 2017). However, a significant population gap existed, with the study limiting those who may not have an interest in voting, as well as those who are under 18, failing to account for the younger range of individuals who experience discrimination, especially at a time where others around the same age tend to express judgment and harsh opinions more clearly and openly. Furthermore, a knowledge gap persisted as vitiligo was grouped with other skin conditions, focusing on the interaction between diverse groups, yet including no specificity towards certain conditions and how they are individually different regarding received attitudes, judgement, and other behaviors, as well as isolating the unique social challenges of depigmentation.

This study successfully bridged these gaps by utilizing a methodology that centered exclusively on vitiligo. By focusing on a diverse participant pool ranging from ages 13 to 95, this research moved beyond the constraints that previous studies obtained. This inclusive approach allowed for a personal analysis of how video-based education can shift perceptions across generations, ensuring that the findings reflect a societal shift rather than a niche demographic trend.

Implications

The long-term benefits of these findings mainly lie in the measurable shift toward vitiligo awareness. By demonstrating that targeted media exposure can foster empathy, this research provides a strong example for pushing for greater representation in media and fashion, highlighting the importance of a condition that is frequently ignored or overlooked. For individuals with vitiligo, the research suggests hope for a future with reduced social avoidance and increased safety and acceptance in public spaces. They can take the approach to further spread awareness towards their condition, especially with a first-hand view of the challenges they tend to face in their everyday lives. For those with friends or family with vitiligo, they should utilize these findings to advocate for their loved ones. Understanding that simple educational tools can shift opinions pushes them to share positive vitiligo-related resources within their own social circles. Groups who largely use social media, as well as popular platforms can take an initiative to spread their enthusiasm towards the increasing of use of models with vitiligo, as well as encouraging the normalization of the condition, clearing common myths, assumptions, sharing real stories of those who have vitiligo, and showing support for those who cannot always stand up for themselves, letting them find a new sense of braveness and acceptance.

Limitations

While the findings provide strong evidence for the effectiveness of educational videos, certain limitations must be acknowledged. Primarily, there was a lack of access to certain participants than what was hoped for. Despite the age range being broad, the total sample size was smaller than originally planned, which may affect the universality of the data. Additionally, the study relied on self-reported digital surveys, which can sometimes lead to bias from certain participants, where they may have answered in a way they perceive to be "correct" or "kind" rather than reflecting their true opinions towards vitiligo and the video provided.

Areas for Future Research

Replication of the Current Study

To replicate this study and verify these findings, future researchers must utilize a survey, specifically using the questionnaire presented in the table under research instruments. They must also seek participants who range from ages 13-95, being anyone who has zero to full knowledge of vitiligo and its impact to the individuals with the condition, also including participants who personally have vitiligo, or know family or friends with it.

Different Directions

To expand upon these findings, future researchers could further explore this topic by doing a methodological shift, and instead of standard surveys to measure subconscious bias, they could focus on individual interviews, which would address the limitation of self-reported bias, allowing for direct answers from participants and avoids unknowingly false responses. Future researchers could also compare the effects of different types of media, such as a short documentary versus a high-fashion photography montage in order to see which format is more effective at changing opinions. Limitations like the amount of participants can be avoided by using a more convenient method to share information regarding vitiligo, rather than a long video that most of the potential participants did not agree to fully watch.

Works Cited

Duncan, Quince. “Vitiligo.” Transition, no. 127, 2019, pp. 228–40. JSTOR, https://doi.org/10.2979/transition.127.1.21. Accessed 8 Aug. 2026.

Harris, Jasmine E. “THE AESTHETICS OF DISABILITY.” Columbia Law Review, vol. 119, no. 4, 2019, pp. 895–972. JSTOR, https://www.jstor.org/stable/26632274. Accessed 8 Aug. 2026.

Henshel, Richard L. “Ability to Alter Skin Color: Some Implications for American Society.” American Journal of Sociology, vol. 76, no. 4, 1971, pp. 734–42. JSTOR, http://www.jstor.org/stable/2776437. Accessed 8 Aug. 2026.

Kalton, Graham, and Howard Schuman. “The Effect of the Question on Survey Responses: A Review.” Journal of the Royal Statistical Society. Series A (General), vol. 145, no. 1, 1982, pp. 42–73. JSTOR, https://doi.org/10.2307/2981421. Accessed 8 Aug. 2026.

Mattila, Mikko, and Achillefs Papageorgiou. “Disability, Perceived Discrimination and Political Participation.” International Political Science Review / Revue Internationale de Science Politique, vol. 38, no. 5, 2017, pp. 505–19. JSTOR, https://www.jstor.org/stable/26940309. Accessed 8 Aug. 2026.

Oaten, Megan, et al. “Disease Avoidance as a Functional Basis for Stigmatization.” Philosophical Transactions: Biological Sciences, vol. 366, no. 1583, 2011, pp. 3433–52. JSTOR, http://www.jstor.org/stable/23035747. Accessed 8 Aug. 2026.

Picardi, Angelo, and Damiano Abeni. “Stressful Life Events and Skin Diseases: Disentangling Evidence from Myth.” Psychotherapy and Psychosomatics, vol. 70, no. 3, 2001, pp. 118–36. JSTOR, https://www.jstor.org/stable/48510634. Accessed 8 Aug. 2026.

Picardi, A., et al. “Stressful Life Events, Social Support, Attachment Security and Alexithymia in Vitiligo: A Case-Control Study.” Psychotherapy and Psychosomatics, vol. 72, no. 3, 2003, pp. 150–58. JSTOR, https://www.jstor.org/stable/48510756. Accessed 8 Aug. 2026.

Porter, Judith R., and Ann Hill Beuf. “Racial Variation in Reaction to Physical Stigma: A Study of Degree of Disturbance by Vitiligo Among Black and White Patients.” Journal of Health and Social Behavior, vol. 32, no. 2, 1991, pp. 192–204. JSTOR, https://doi.org/10.2307/2137152. Accessed 8 Aug. 2026.

Thomas, Lee. “Transcript of ‘How I Help People Understand Vitiligo.’” Www.Ted.Com, https://www.ted.com/talks/lee_thomas_how_i_help_people_understand_vitiligo/transcript. Accessed 8 Aug. 2026.

Yuksel, Peri. “TED Talks Complement Self-Directed Learning (and Entertain Students).” Transformations: The Journal of Inclusive Scholarship and Pedagogy, vol. 28, no. 1, 2018, pp. 96–103. JSTOR, https://doi.org/10.5325/trajincschped.28.1.0096. Accessed 8 Aug. 2026.

Zhang, Yuhui, et al. “The Prevalence of Vitiligo: A Meta-Analysis.” PLOS ONE, edited by Naoki Oiso, vol. 11, no. 9, Sept. 2016, p. e0163806, https://doi.org/10.1371/journal.pone.0163806. Accessed 8 Aug. 2026.

When Fear Replaced the Truth: Self-Deceit in Nazi Germany By Grace Cai

Introduction

Self-deceit can be understood as "a person who, as a consequence of some motivation or emotion, seems to acquire and maintain some false belief despite evidence to the contrary and who may display behavior suggesting some awareness of the truth" (Deweese-Boyd, 2017). Hitler and the Nazis exploited this psychological tendency to gain the support and silence necessary to carry out the Holocaust. Rather than relying solely on direct threats, Hitler systematically manipulated public perception, gradually convincing many Germans to adopt his beliefs—even though those beliefs were based on falsehoods. Fear was the dominant emotion, and the false belief that Jews were evil became widespread. Even though personal experience of living and working alongside Jews contradicted the Nazi agenda, Germans were coerced into forgetting those experiences in return for safety and a sense of belonging. In this way, self-deception became a tool of mass complicity.

Conformity and the Fear of Isolation

Humans are inherently social beings. The fear of isolation is powerful enough to make people doubt their own perceptions. Solomon Asch's conformity experiments in 1951, demonstrated this vividly. In these experiments, participants were asked to identify which line matched a reference line in length. The study was designed to have a group of actors alongside real participants, who were directed to provide incorrect answers to demonstrate the power of conformity in groups. When the group of actors intentionally gave wrong answers, about 75% of the real participants conformed at least once, giving incorrect answers (Mcleod, 2023). The experiment reveals that people will conform to social pressure from a group to avoid disapproval or looking foolish. The behavior illustrates how the desire to belong can override personal beliefs and observable truth. The pattern can also be observed on a larger and more dangerous scale in Nazi Germany.

How Propaganda Conditions Fear

A similar psychological mechanism was demonstrated in the famous Little Albert experiment conducted by John B. Watson and Rosalie Rayner in 1920 at Johns Hopkins University. The experiment aimed to investigate how fear can be conditioned in humans through classical conditioning. Young Albert was given furry objects paired with loud, frightening noises. Over time, Albert learned to fear previously neutral stimuli, illustrating how fear can be artificially instilled through repetition and manipulation (Cherry, 2024). Nazi propaganda exploited this method on a mass scale where Jewish people were equivalent to a neutral stimuli that overtime Germans were conditioned to fear. The propaganda against the Jews was not random but a systemic machine created and led by Hitler's right hand man, Joseph Goebbels. It was his job to inundate the public through all forms of media with the message that Jews were "dirty, deceitful, and dangerous" and there was no counter-narrative to contradict these

stereotypes. Every source claimed the same- Jews were distrustful, hateful, and didn't belong in Germany. It was impossible to find or tell another story about the Jews. Due to the conditioning of Germans, repulsion and fear were automatic emotions. Through relentless antisemitic propaganda, the Nazis conditioned millions to fear and hate Jews (United States Holocaust Memorial Museum, 2019). As a result, the public would allow and even support horrific policies.

Ordinary People Become Perpetrators

Hitler needed an army to accomplish his goals of gaining power throughout Germany and enact his plan, called the Final Solution. Historian Christopher Browning's book Ordinary Men, written in 1992, documents how average men were transformed into perpetrators of running concentration camps and gas chambers. These men were not fanatical killers at the outset but were conditioned through social pressure, fear of punishment, and self-deception to accept their roles (Browning, 1992). As the book stated, in Nazi Germany, the process of turning ordinary German men into perpetrators began with recruitment and indoctrination. From the early 1930s, the Nazi regime targeted youth through organizations like the Hitler Youth, immersing boys in nationalist propaganda and teaching absolute loyalty to Adolf Hitler to spread Hitler's morals even further. Membership was highly encouraged—and later mandatory—offering a sense of belonging, purpose, and identity. The youth's early exposure normalized Nazi ideology and framed obedience as a moral duty. As these youths matured, many joined or were drafted into the Wehrmacht or police battalions. Military discipline and peer pressure reinforced conformity. Hitler's policies created an army who were willing to do anything Hitler said without question (United States Holocaust Memorial Museum, 2020).

Obedience to Authority

Stanley Milgram's 1961 obedience experiment resulted in a similar conclusion. The experiment sought to test the extent to which individuals would obey instructions from authority figures even if these instructions contradicted personal conscience. In the Stanley Milgram experiment, participants were led to believe they were administering electric shocks to a learner for incorrect answers, with the shocks increasing in intensity. Even though the participants stated they would never harm anyone, when the "teachers" directed them to shock the "learner," about 60% of the participants followed the order despite their previous statements and the fact they knew it would cause pain to the learners. Much like the initially innocent men who turned violent, the participants justified their actions by claiming they were "just following orders." This mindset illustrates the devastating power of self-deceit to enable ordinary people to commit extraordinary harm (Milgram Experiment, 2019). The self-deceit of Nazi soldiers did not mean they were wholly unaware of the harm they caused; rather, it involved convincing themselves that obedience to authority absolves them of personal responsibility and internally rationalized their actions as necessary or unavoidable.

Choosing Silence Over Resistance

It is important to recognize that individuals did have the choice to take risks and oppose Hitler and his regime. Some did, with the support of anti-Nazi groups, act against his ideology and directives. However, the majority of Germans turned a blind eye to the unfolding atrocities. At the time, Germany was in a state of economic and political turmoil, and many citizens prioritized stability, jobs, and prosperity. Once Hitler seized government power and the economy began to improve, it became easier for people to overlook the increasingly oppressive laws he enacted to consolidate total control. Many chose to ignore the existence of concentration camps, midnight raids carried out by the Gestapo, the censorship and burning of unapproved books, and the violent persecution of Jews. Harsh laws were introduced to suppress dissent, including the imprisonment of resistors in concentration camps (Nillson, 2021).

Conclusion

In conclusion, the Holocaust was not only the result of authoritarian control but also of widespread self-deception fueled by fear, false beliefs, and the human need for belonging and safety. Hitler's regime masterfully exploited these vulnerabilities, encouraging Germans to embrace harmful ideologies while ignoring the evidence of atrocities around them. The psychological concept of self-deceit helps explain how an entire society could maintain false beliefs and remain complicit in horrific acts. Understanding this dynamic is essential—not only to make sense of the past but also to recognize how fear and falsehoods can still manipulate people and societies today.

Works Cited

Browning, C. R. (1992). Ordinary men: Reserve Police Battalion 101 and the Final Solution in Poland. Harper Perennial.

Cherry, K. (2024, July 11). The Little Albert Experiment. Verywell well. https://www.verywellmind.com/the-little-albert-experiment-2794994

Deweese-Boyd, I. (2017). Self-Deception (E. N. Zalta, Ed.). Stanford Encyclopedia of Philosophy; Metaphysics Research Lab, Stanford University. https://plato.stanford.edu/entries/self-deception/

Mcleod, S. (2023, October 24). *Solomon Asch Conformity Line Experiment Study*. Simply Psychology. https://www.simplypsychology.org/asch-conformity.html

Milgram experiment. (2019, April 6). Wikipedia; Wikimedia Foundation. https://en.wikipedia.org/wiki/Milgram_experiment

Nillson, J. (2021, July 29). How Did Hitler Succeed? And Why Wasn't He Stopped? The Saturday Evening Post. https://www.saturdayeveningpost.com/2021/07/how-did-hitler-succeed-and-why-wasnt-he-stoped/

United States Holocaust Memorial Museum. (2019). *Deceiving the Public*. Ushmm.org; United States Holocaust Memorial Museum. https://encyclopedia.ushmm.org/content/en/article/deceiving-the-public

United States Holocaust Memorial Museum. (2020, December 10). *Hitler Youth*. United States Holocaust Memorial Museum; Holocaust Encyclopedia. https://encyclopedia.ushmm.org/content/en/article/hitler-youth-2