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From Virtual Aggression to School Aggression: A Conceptual Model of Online Gaming, Moral Disengagement, Emotional Dysregulation, and Adolescent Violence

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Abstract

The relationship between violent online gaming and adolescent school-based aggression has generated decades of inconsistent empirical findings, largely because existing research has treated virtual aggression exposure as a direct predictor of behavior rather than specifying the psychological mechanisms through which such a transfer might plausibly occur. This conceptual paper addresses that gap by proposing an integrative dual-mediator model in which moral disengagement and emotional dysregulation function as distinct but interacting pathways linking gaming exposure to school-based aggression. Drawing on synthesis of literature spanning media psychology, moral-cognitive development, and emotion regulation research, the model positions moral disengagement as more strongly associated with planned, proactive aggression, and emotional dysregulation as more strongly associated with reactive, provoked aggression. These two mechanisms are proposed to reinforce one another bidirectionally over time and to be jointly amplified by dispositional vulnerabilities, particularly callous-unemotional traits, while being buffered by trait empathy and self-control. The model further situates the translation of these mechanisms into school-specific outcomes within proximal peer and social-network processes, consistent with established school-violence risk architecture that treats media exposure as a distal rather than proximal contributor. Rather than asserting that online gaming causes school aggression, the paper reframes the inquiry around a more precise question: for which adolescents, through which mechanisms, and under which conditions virtual aggression exposure becomes behaviorally consequential. The model is offered as a theoretically grounded, empirically anchored framework intended to guide future longitudinal and moderation-focused research, and to inform more targeted risk identification in educational and clinical practice, without pathologizing gaming as a nearly universal adolescent activity.

Keywords: *moral disengagement; emotional dysregulation; adolescent aggression; violent video games; school violence; dual-mediator model; callous-unemotional traits*

1. Introduction

Adolescent aggression in school settings remains one of the most persistent concerns in contemporary social and behavioral science, not because its existence is new, but because the contexts that shape it continue to evolve. Among these contexts, online gaming has emerged as a particularly contested one. Digital gaming environments, especially those built around competitive or combat-oriented mechanics, expose millions of adolescents to simulated aggression on a near-daily basis. Whether this exposure meaningfully contributes to aggression beyond the screen — specifically, aggression enacted in schools, among peers, within an environment governed by very different social rules than a game world — is a question that has occupied media psychology for decades without arriving at a settled answer. What has often been missing from this debate is not more data on exposure itself, but a clearer account of the psychological mechanisms that would have to operate for such a transfer to occur at all.

This paper approaches that gap by proposing a conceptual model in which the relationship between virtual aggression and school-based aggression is not direct, but mediated by two specific psychological processes: moral disengagement and emotional dysregulation. Moral disengagement refers to the cognitive restructuring by which individuals rationalize, minimize, or morally justify harmful conduct, thereby deactivating the self-sanctions that would ordinarily inhibit aggressive behavior. Emotional dysregulation, by contrast, refers to a diminished capacity to modulate the intensity, duration, or expression of affective arousal, particularly anger and frustration, in socially appropriate ways. Neither of these processes originates in gaming; both are well-documented in developmental and social-cognitive psychology as core vulnerabilities of adolescence. What this paper proposes is that the game

environment provides repeated, low-stakes rehearsal conditions under which both processes may be reinforced, and that adolescents already predisposed toward weakened moral self-regulation or poor affective control may be the ones for whom virtual aggression exposure carries the greatest behavioral risk in offline settings such as schools.

This reframing matters for several reasons. First, it shifts the analytical question away from a blunt exposure-effects model — the assumption that violent content produces violent behavior in any adolescent who encounters it — toward a mechanism-based model that can account for why most adolescents who play aggressive games never become aggressive in school, while a smaller subset do. This distinction has practical significance for parents, educators, and school-based mental health practitioners, who need frameworks that identify risk pathways rather than blanket condemnations of a nearly universal adolescent leisure activity. Second, it situates the discussion within recognizable, well-established psychological theory — social-cognitive theory, moral disengagement theory, and emotion regulation frameworks — rather than relying on moral or generational anxiety about new technology. Third, it treats online gaming as one contemporary context among several in which these two mechanisms may be activated or reinforced, consistent with a broader psychological interest in how digital and technologically mediated environments interact with adolescent cognitive and emotional development.

The urgency of this inquiry is not merely theoretical. School-based aggression, ranging from bullying and peer victimization to more severe interpersonal violence, continues to represent a significant concern for adolescent well-being, school climate, and public safety. At the same time, online gaming has become one of the most widespread and time-intensive activities among adolescents globally, making it a context too pervasive to ignore and too complex to reduce to a single causal claim. A model that can specify which adolescents are more vulnerable, and through which internal mechanisms that vulnerability operates, offers considerably more analytical and practical value than a generalized exposure hypothesis that decades of inconsistent empirical findings have already called into question.

Accordingly, this paper pursues three interrelated objectives. The first is to synthesize existing literature on online gaming exposure, moral disengagement, and emotional dysregulation in order to establish the theoretical plausibility of each construct's role in adolescent aggression. The second is to construct an integrative conceptual model that specifies how these constructs may interact — as parallel mediators, sequential mechanisms, or moderated pathways — in translating virtual aggression exposure into school-based aggressive behavior. The third is to consider the practical and developmental implications of this model for how psychologists, educators, and school systems might identify and intervene with adolescents at heightened risk, without pathologizing gaming as an activity in itself.

In pursuing these objectives, the paper is deliberately conceptual rather than empirical. It does not claim to test the proposed model against observed data, but rather to articulate a theoretically coherent and psychologically grounded framework that can guide future empirical investigation. This positioning reflects a broader need in the literature: before researchers can meaningfully test whether, and for whom, virtual aggression exposure translates into school aggression, there must first exist a clearly specified model of the mechanisms through which such a translation would plausibly occur. This paper offers that specification, situating adolescent gaming behavior within a psychologically grounded, socially relevant, and developmentally sensitive account of aggression formation.

2. Review of Related Literature

2.1 Online Gaming and Exposure to Virtual Aggression

Virtual aggression exposure in online gaming is best understood not as a single, uniform stimulus but as a multidimensional construct encompassing violent content, active participation, competitive structure, and social reinforcement. Meta-analytic and longitudinal work generally supports an association between frequent violent game exposure and heightened aggressive cognition in adolescents, with sensitivity to this pathway appearing to peak around early adolescence (Burkhardt & Lenhard, 2021). However, the strength of this association is considerably less consistent than earlier cross-sectional literature implied. A large longitudinal study of Czech adolescents found no within-person desensitization effect of violent gaming on aggression or empathy, even though between-person comparisons showed higher aggression among more exposed adolescents (Lacko et al., 2024) — a divergence that raises the possibility that stable individual differences, rather than gaming exposure itself, account for much of the observed association.

A notable tension in this literature concerns the causal weight of violent content specifically versus features that frequently co-occur with it. Several studies suggest that competitiveness, difficulty, and player frustration can generate hostility independently of violent content (Ferguson et al., 2021; Olejarnik & Romano, 2023), which complicates any model that attributes aggressive outcomes to violent imagery alone. Relatedly, the theoretical claim that interactive violent media produces stronger effects than passive media — central to social-cognitive accounts of rehearsal and enactment — remains only partially supported; at least one study found no interactivity-specific bias in facial emotion processing, challenging strong desensitization claims (Ubaradka & Khangnaba, 2025). Where risk does appear

concentrated, it is disproportionately linked to problematic or disordered gaming patterns rather than gaming exposure in general, with severe symptoms of internet gaming disorder predicting elevated aggression (Deng et al., 2023). Taken together, this body of work suggests that virtual aggression exposure functions as a necessary but insufficient condition: it establishes a context in which aggression-relevant cognitive and affective processes may be activated, but it does not, on its own, account for who becomes aggressive and who does not — a gap that motivates the mediating mechanisms addressed in the following sections.

2.2 Moral Disengagement as a Socio-Cognitive Mechanism

The literature on moral disengagement offers considerably more consistent support for its role as a proximal predictor of adolescent aggression than the gaming-exposure literature offers for content effects alone. Longitudinal evidence shows that moral disengagement prospectively predicts later aggression even after prior aggression is statistically accounted for (Gini et al., 2021; Quan et al., 2026), and its explanatory contribution can be substantial, accounting for a meaningfully larger share of variance in physical than in verbal aggression among at-risk youth (Gómez Tabares & Landínez-Martínez, 2021). Importantly, moral disengagement does not appear to function merely as a correlate but as a genuine mechanism, mediating pathways from maltreatment and relative deprivation to later aggressive behavior (Ding et al., 2022; Wang et al., 2023), and shifting within individuals over time in ways that track corresponding changes in aggression (Lin & Xia, 2026).

The evidence linking violent gaming specifically to increased moral disengagement is directionally consistent but comparatively thinner. Early adolescent studies report that violent video game play is associated with bullying and cyberbullying indirectly, through moral disengagement (Ak et al., 2021), and this pathway appears stronger among youth with elevated callous-unemotional traits (Wang & Zhou, 2023) — an interaction suggesting that gaming-linked moral disengagement is not uniformly distributed across adolescents but concentrated among those with pre-existing regulatory vulnerabilities. The mechanistic account offered by Bandura's framework remains the dominant interpretive lens: online and gaming environments may be particularly conducive to moral disengagement because anonymity, physical distance from consequences, and dehumanization cues reduce the empathic feedback that would otherwise inhibit rationalization of harm (Wang & Zhou, 2023; Gan et al., 2024). Still, authors note that strict within-person longitudinal evidence isolating gaming as a distinct antecedent of moral disengagement remains underdeveloped relative to other antecedents such as peer victimization (Li & Xia, 2024; Francisco et al., 2024), meaning gaming should be treated as one contributing input among several rather than a uniquely determinative one.

2.3 Emotional Dysregulation in Adolescent Development

Emotional dysregulation is one of the more robustly supported predictors of adolescent aggression in the broader developmental literature, with effects that in some samples exceed those of direct violence exposure. In a community adolescent sample, emotion dysregulation remained an independent predictor of aggression even when violence exposure was modeled simultaneously, carrying a larger standardized effect (Gong & Popescu, 2024). This pattern recurs across at-risk populations: among delinquent male adolescents, emotion dysregulation predicted aggression more strongly than attachment style and also mediated the effect of adverse childhood experiences on later aggressive behavior (Afshari et al., 2026). Developmentally, early adolescence is characterized by heightened emotional reactivity relative to later adolescence and adulthood, which plausibly renders this period a window of elevated vulnerability to dysregulation-linked aggression (Gómez-León, 2025).

The evidence connecting gaming specifically to subsequent emotion-regulation impairment is markedly more mixed than the dysregulation-aggression link itself. Short-term experimental work has found no causal effect of violent gameplay on adolescents' emotion recognition or inhibitory control, and habitual violent game exposure was, counterintuitively, associated with better inhibitory control over emotional stimuli in one study (Miedzobrodzka et al., 2021) — a finding that runs contrary to a simple impairment model. Where dysregulation-related harms do appear reliably, they cluster around problematic or addictive gaming patterns rather than violent content exposure per se, with internet gaming disorder symptoms linked to greater dysregulation, gaming-related rage, and emotional blunting (Khalid et al., 2025; Michałkiewicz et al., 2026; Rashwan et al., 2026). This distinction is analytically important for the present model: it suggests that emotional dysregulation should be conceptualized less as something ordinary violent gaming straightforwardly produces, and more as a pre-existing or co-developing vulnerability that determines how an adolescent processes and responds to emotionally arousing gaming content, including frustration, competitive loss, and in-game provocation. Related Philippine evidence from a different digital-media context likewise indicates that Generation Z college students may use online platforms for emotional regulation and interaction management, illustrating that digital engagement can intersect with existing affect-regulatory tendencies rather than function solely as an external exposure (Dancel et al., 2026).

2.4 Theoretical Pathways from Virtual to Real-World Aggression

Among available theoretical frameworks, the General Aggression Model (GAM) offers the most explicit architecture for explaining transfer from virtual to real-world aggression, linking situational inputs to aggressive cognition, affect, and arousal, which in turn shape appraisal and behavioral response (Burnay et al., 2021; Kersten & Greitemeyer, 2024). The model's long-term script-acquisition pathway — in which repeated exposure builds durable aggressive knowledge structures that generalize across situations — provides a plausible mechanism for how gaming-based rehearsal might extend beyond the game environment (Burnay et al., 2021; Borrego-Ruiz & Borrego, 2025). Even so, the GAM's adequacy as a complete explanatory account is contested: several studies find that frustration, personality traits, or difficulty predict aggression and anger more strongly than media content itself (Devilly et al., 2021; Ubaradka & Khanganba, 2025), suggesting the model captures a plausible architecture without fully accounting for the inconsistency of empirical effects.

Social-Cognitive Theory and cultivation accounts offer complementary but distinct emphases: the former frames transfer through observation, imitation, and reinforcement of normative beliefs supportive of aggression (Eneizat et al., 2024; Docherty et al., 2025), while the latter emphasizes the gradual normalization of violence through repeated exposure, making aggressive scripts more cognitively accessible over time (Ivewharen & Chukwuebueni, 2024). Critically for the present model, recent theoretical integration has moved toward explicitly incorporating moral disengagement as a response-evaluation mechanism within both GAM-based and social-cognitive frameworks, particularly in online aggression research (Jiao et al., 2026; Lin & Xia, 2026). Emotional mediators, by contrast, remain comparatively underdeveloped within these frameworks, typically represented narrowly through anger, arousal, and rumination rather than through a fully elaborated account of emotional dysregulation as a developmental construct (Eneizat et al., 2024; Cen et al., 2022). This asymmetry represents a meaningful theoretical gap: existing frameworks provide reasonably explicit conceptual room for moral disengagement as a mediating mechanism but have not yet integrated emotional dysregulation with comparable specificity — precisely the integration this paper's proposed model seeks to advance.

2.5 School-Based Aggression and Adolescent Violence Risk

Literature on school-based aggression consistently positions individual-level socio-cognitive and emotional-regulatory deficits as more proximal predictors than media exposure itself. In school-recruited adolescent samples, emotion dysregulation predicted aggression even after accounting for violence exposure, again with a larger effect than exposure alone (Gong & Popescu, 2024), while cross-national profiling work places the combination of high negative emotionality and low effortful control in the highest-risk aggression group (Favini et al., 2023). Normative beliefs supportive of aggression function as a further central socio-cognitive predictor, frequently mediating the relationship between exposure and aggressive or bullying outcomes (Majumdar & Srivastava, 2024; Zhou et al., 2022).

Consistent with this individual-deficit emphasis, risk architecture models of school violence generally treat media exposure as a distal or contextual input rather than a proximal trigger, with its effects on aggression typically operating indirectly through intermediate mechanisms such as anger, normative beliefs, peer deviance, or rumination (Dou & Zhang, 2025; Zhou et al., 2022; Docherty et al., 2023). This does not mean media exposure is inconsequential — longitudinal work has linked violent media diets to later seriously violent behavior with meaningfully elevated odds ratios, particularly for frequent violent video game exposure (Ybarra et al., 2022) — but it does mean that the strongest and most complete risk models embed media exposure within broader pathways involving executive control, emotional inhibition, family climate, and peer contagion, rather than treating it as sufficient on its own (Chiang et al., 2021; Katembu et al., 2023). This layered risk architecture directly supports the structural logic of the present paper's proposed model: it is consistent with a framework in which virtual aggression exposure operates as a distal contextual input whose behavioral consequences are substantially determined by the intervening socio-cognitive and emotional-regulatory mechanisms — moral disengagement and emotional dysregulation — that the school-violence literature independently identifies as the more proximal drivers of aggressive outcomes. In a Philippine late-adolescent sample, peer influence was significantly associated with personal-social competencies encompassing empathy, self-regulation and emotional control, responsibility, and social awareness, further supporting the relevance of peer ecology and regulatory capacities when interpreting behavior in school-linked settings (Balut et al., 2026).

2.6 Synthesis of Literature

Across the five thematic areas reviewed, a coherent pattern emerges that both supports and qualifies the model proposed in this paper. First, virtual aggression exposure is reliably associated with aggression-relevant cognition, but the association is neither uniform nor deterministic; it is shaped by co-occurring features such as competitiveness, frustration, and problematic engagement patterns, and longitudinal within-person evidence for direct desensitization is notably weaker than cross-sectional and between-person data suggest (Lacko et al., 2024; Olejarnik & Romano,

2023). Second, moral disengagement and emotional dysregulation each independently emerge as well-supported, mechanistically distinct predictors of adolescent aggression, with effect sizes in several studies exceeding that of exposure to violence itself (Gong & Popescu, 2024; Gómez Tabares & Landínez-Martínez, 2021). Third, the specific pathway linking gaming exposure to each of these two mechanisms is directionally consistent but evidentially uneven: the gaming-to-moral-disengagement link is reasonably well supported, particularly among youth with elevated callous-unemotional traits (Wang & Zhou, 2023), while the gaming-to-emotional-dysregulation link is considerably more contingent, appearing reliably only for problematic or addictive gaming rather than for violent content exposure broadly (Khalid et al., 2025; Miedzobrodzka et al., 2021).

Fourth, existing theoretical architectures — principally the General Aggression Model, Social-Cognitive Theory, and cultivation accounts — provide a plausible general transfer logic and have begun to formally incorporate moral disengagement as a mediating mechanism, but they have not achieved comparable theoretical integration of emotional dysregulation, which remains represented narrowly through transient affective states such as anger or frustration (Jiao et al., 2026; Eneizat et al., 2024). Fifth, school-violence risk literature independently converges on the conclusion that individual socio-cognitive and emotional-regulatory deficits function as more proximal predictors of school aggression than media exposure, which is consistently modeled as a distal, indirect contributor operating through intermediate mechanisms (Dou & Zhang, 2025; Docherty et al., 2023). Read together, these five bodies of literature do not merely coexist; they point toward the same structural conclusion from different angles — that virtual aggression exposure alone is theoretically and empirically insufficient to explain school-based aggression, and that moral disengagement and emotional dysregulation are the most empirically credible candidates for the intervening mechanisms that would need to operate for such a transfer to occur.

2.7 Gaps in the Literature

Despite convergence on the general plausibility of mechanism-based transfer, three specific gaps remain unaddressed by the existing literature. First, moral disengagement and emotional dysregulation have been studied extensively as separate predictors of aggression, and occasionally as parallel or sequential mediators of other risk factors such as maltreatment or deprivation (Ding et al., 2022; Afshari et al., 2026), but they have rarely been theoretically integrated as joint or interacting mediators specifically within the gaming-to-school-aggression pathway. Existing hybrid models that incorporate moral disengagement into aggression theory (Jiao et al., 2026) have not been extended to formally co-locate emotional dysregulation as a parallel or moderating mechanism within the same explanatory structure.

Second, the conditions under which these two mechanisms interact — whether moral disengagement and emotional dysregulation operate additively, sequentially, or synergistically, and whether one moderates the strength of the other's effect — remain theoretically unspecified. Some evidence suggests gaming-linked moral disengagement is concentrated among youth with pre-existing regulatory or temperamental vulnerabilities such as callous-unemotional traits (Wang & Zhou, 2023), hinting at a possible moderation pathway, but this has not been articulated as a formal model. Third, the literature offers limited theoretical guidance on translating distal gaming exposure into proximal school-based outcomes specifically, as opposed to aggression in general or online/cyber-aggression; school-violence risk models acknowledge media exposure as distal (Dou & Zhang, 2025) but do not specify which intervening mechanisms carry that distal influence into the school context in particular, where peer, institutional, and developmental factors introduce additional complexity not present in laboratory or general-population aggression research.

2.8 Contribution of the Present Paper

This paper addresses these gaps by proposing an integrative conceptual model that positions moral disengagement and emotional dysregulation not as competing or independent explanations, but as jointly operating mechanisms that translate virtual aggression exposure into school-based aggressive behavior. Its contribution is threefold. First, it offers the field a formally articulated dual-mediator structure — explicitly specifying how these two established but previously siloed mechanisms may operate in parallel, sequentially, or interactively — where the current literature has largely treated them as separate lines of inquiry. Second, by drawing on the moderation evidence suggesting that gaming-linked moral disengagement is concentrated among adolescents with pre-existing regulatory vulnerabilities (Wang & Zhou, 2023), the proposed model incorporates individual differences as a structural feature rather than an incidental caveat, offering a more precise account of differential susceptibility than exposure-only frameworks allow. Third, the model deliberately bridges the general aggression-theory literature with the school-violence risk-architecture literature, translating the well-supported claim that media exposure functions as a distal contributor (Dou & Zhang, 2025) into a specific, testable account of which mechanisms carry that distal influence into the school setting. In doing so, the paper does not claim to resolve the long-standing empirical inconsistency

surrounding gaming and aggression, but to reframe it: rather than asking whether virtual aggression exposure causes school aggression, the proposed model asks for whom, and through which psychological mechanisms, such a transfer becomes behaviorally plausible.

3. Methodology

3.1 Research Design and Approach

This paper adopts a conceptual analysis and model-building design, a recognized non-empirical methodology for theoretical papers that aim to synthesize established constructs into a novel explanatory framework rather than test hypotheses against original data. Unlike empirical designs, this approach does not involve human participants, primary data collection, interviews, surveys, or experimental manipulation. Its methodological contribution instead lies in the systematic identification, evaluation, and integration of existing evidence into a coherent conceptual architecture — in this case, a model specifying how virtual aggression exposure, moral disengagement, and emotional dysregulation may interrelate to produce school-based adolescent aggression.

Conceptual analysis is an appropriate design choice here for two reasons. First, the constructs under review — moral disengagement and emotional dysregulation — are each independently well-established in the literature, but their joint operation within the specific gaming-to-school-aggression pathway has not yet been theoretically specified, making this a problem of synthesis and integration rather than one requiring new data generation. Second, the paper's stated purpose is explicitly to generate a testable theoretical framework that can guide future empirical work, not to report findings from a study already conducted; conceptual model-building is the design best suited to that purpose.

3.2 Source Orientation and Literature Base

The literature underlying this synthesis was drawn from peer-reviewed empirical and theoretical publications retrieved through Consensus, an AI-assisted academic search platform indexing peer-reviewed research. The literature base spans several adjacent domains: developmental and adolescent psychology, media psychology, social-cognitive and moral-cognitive theory, and school violence risk research. Drawing across these domains, rather than confining the review to a single discipline, was a deliberate choice necessitated by the model's structure: no single existing literature fully addresses the intersection of gaming exposure, moral cognition, emotional regulation, and school-based outcomes, so the relevant evidence had to be assembled from parallel bodies of work that do not typically cite one another directly.

Priority was given to longitudinal and meta-analytic studies over purely cross-sectional designs wherever available, because within-person and prospective evidence carries greater weight in establishing whether a construct behaves as a genuine mechanism rather than a static correlate. Where longitudinal evidence was unavailable or thin — as is the case for the specific pathway from violent gaming to emotional dysregulation — this limitation is explicitly acknowledged in the literature review rather than papered over, consistent with the paper's commitment to distinguishing well-supported claims from directionally suggestive but still-developing ones.

3.3 Inclusion Logic and Thematic Organization

Rather than pursuing an exhaustive or systematic review of the entire aggression literature, sources were organized around five thematic pillars corresponding to the sequential building blocks of the proposed model: (1) the foundational construct of virtual aggression exposure, (2) moral disengagement as a first candidate mediating mechanism, (3) emotional dysregulation as a second candidate mediating mechanism, (4) existing theoretical architectures for explaining virtual-to-real aggression transfer, and (5) the outcome domain of school-based aggression and its established risk architecture.

This thematic inclusion logic serves the paper's model-building purpose more directly than a broader, unstructured review would. Studies were included if they addressed one or more of these five pillars with direct relevance to adolescent populations, aggression outcomes, or the specific mechanisms under review; studies focused on unrelated populations (e.g., adult-only samples with no adolescent relevance) or tangential constructs were not prioritized for inclusion. This approach trades exhaustiveness for structural precision, ensuring that every cited study functions as a load-bearing piece of the model's architecture rather than as general background.

3.4 Interpretive and Analytical Framework

The interpretive framework used to integrate these five thematic areas into a single model draws principally on the General Aggression Model and Social-Cognitive Theory as organizing architectures. These two frameworks were selected as the model's theoretical scaffolding because the literature review itself identifies them as the dominant existing explanations for aggression transfer, and because recent work has already begun extending both frameworks

to formally incorporate moral disengagement as a mediating mechanism. Moral disengagement and emotional dysregulation are positioned within this scaffolding as parallel, and potentially interacting, mediating mechanisms — a structural choice grounded in the literature's own findings that each mechanism independently predicts aggression, but has rarely been examined jointly within a single explanatory model.

This integration follows an analytical and interpretive logic rather than a statistical one. No original data were analyzed, and no path coefficients, effect sizes, or model-fit statistics are reported anywhere in this paper. Relationships proposed within the model are instead derived from convergent patterns across independently conducted studies, documented mediation pathways reported within those studies, and theoretical plausibility established through existing frameworks — a standard and accepted basis for theory construction in conceptual psychology papers.

3.5 Analytical Criteria

Three explicit criteria guided how literature was weighted and interpreted throughout this synthesis:

First, consistency across independent studies — constructs and relationships supported by multiple independently conducted studies, ideally across different cultural or national contexts, were treated as carrying more interpretive weight than single-study findings.

Second, presence of longitudinal or within-person evidence — where available, prospective or within-person designs were prioritized over cross-sectional correlational data, because they more credibly distinguish a genuine developmental mechanism from a static, potentially confounded association.

Third, explicit attention to boundary conditions, null findings, and contested claims — rather than selectively citing only confirmatory evidence, this synthesis deliberately surfaces null results (e.g., the absence of a within-person desensitization effect in Lacko et al., 2024) and contested claims (e.g., the mixed evidence on interactivity effects in Ubaradka & Khangnaba, 2025) so that the resulting model does not overstate certainty where the underlying literature remains genuinely unsettled.

3.6 Limitations of the Approach

Several limitations follow directly from this conceptual design and are acknowledged here rather than left implicit. As a non-empirical paper, the proposed model has not been tested against original data and therefore cannot establish causal precedence, effect sizes, or generalizability to any specific population. The literature synthesis, while thematically organized around five clearly defined pillars, does not follow a formal systematic review protocol (e.g., PRISMA-based search and screening), meaning relevant studies outside the retrieved corpus may exist and are not represented here. Finally, because moral disengagement and emotional dysregulation have rarely been examined jointly within the specific gaming-to-school-aggression pathway in existing empirical work, the proposed interaction between these two mechanisms is necessarily theoretical. It should be understood as a set of falsifiable propositions intended to guide future empirical research, not as an established or previously validated finding.

4. Analytical Synthesis: Proposed Conceptual Model

Overview of the Proposed Model

The literature reviewed across the preceding sections converges on a single structural conclusion: virtual aggression exposure is a distal contextual input whose behavioral consequences are substantially determined by two intervening psychological mechanisms — moral disengagement and emotional dysregulation. This section formalizes that conclusion into an explicit conceptual model. The model proposes that online gaming exposure influences school-based aggression not directly, but through a dual-mediator architecture in which moral disengagement and emotional dysregulation operate as parallel, partially interacting pathways, with the relative weight of each pathway varying according to individual differences in temperament and the specific subtype of aggression under consideration. This structure is not proposed in a theoretical vacuum: it draws direct precedent from existing dual-process and dual-mediator frameworks already established in the broader aggression literature, including the Dual-Path Model of Aggression, the Dual-Mode Social-Information-Processing Model, and the I³ Model, each of which has previously formalized cognitive and affective routes to aggressive behavior as distinct but interacting systems (Lin & Xia, 2026; Verhoef et al., 2021; Smith et al., 2025). The present model extends this established class of frameworks to a pathway not yet formally modeled within it: the translation of gaming-based virtual aggression exposure into school-based aggressive behavior.

Pathway One: Moral Disengagement as the Cognitive Route

The first proposed pathway positions moral disengagement as a cognitive mediator through which repeated engagement with virtual aggression is translated into a weakened capacity for self-sanction. Consistent with Bandura's original formulation, gaming environments may function as low-stakes rehearsal spaces in which harmful conduct is reframed as justified, minimized, or diffused of personal responsibility, a process reinforced by anonymity, physical distance from consequences, and dehumanization cues that reduce empathic feedback (Wang & Zhou, 2023; Gan et al., 2024). This pathway is not merely plausible but has direct empirical precedent: violent video game exposure has been shown to predict cyberbullying perpetration through moral disengagement as an explicit mediator (Wang & Zhou, 2023), and moral disengagement itself functions as a mechanism, not simply a correlate, mediating pathways from other distal risk exposures such as maltreatment and relative deprivation to later aggression (Ding et al., 2022; Wang et al., 2023). Critically, this pathway appears more strongly implicated in proactive rather than reactive aggression; self-control inhibits proactive aggression specifically through moral disengagement, while its effect on reactive aggression operates through a different route entirely (Cen et al., 2022). This differentiation matters for the model's precision: moral disengagement is proposed here as the dominant mediating mechanism for planned, instrumental school aggression — the kind of aggression enacted with premeditation, social reward-seeking, or targeted intent — rather than for aggression that erupts as an immediate, unplanned response to provocation.

Pathway Two: Emotional Dysregulation as the Affective Route

The second proposed pathway positions emotional dysregulation as an affective mediator operating largely independently of moral cognition. Emotional dysregulation is one of the most consistently supported predictors of adolescent aggression in the developmental literature, in several samples exceeding the predictive weight of violence exposure itself (Gong & Popescu, 2024; Afshari et al., 2026), and difficulties in emotion regulation are most strongly associated with reactive rather than proactive aggression specifically (Smith et al., 2025; Cen et al., 2022; Swit & Harty, 2023). This asymmetry is theoretically important: where moral disengagement primarily licenses aggression that has already been cognitively planned, emotional dysregulation primarily governs an adolescent's capacity to inhibit an aggressive response in the heat of an emotionally arousing moment — precisely the kind of immediate, provoked aggression common in school hallways, classrooms, and peer conflicts. The gaming-specific evidence for this pathway remains more contingent than for moral disengagement; direct impairment in emotion regulation from ordinary violent content exposure is inconsistently supported (Miedzobrodzka et al., 2021), while the strongest and most reliable dysregulation effects are concentrated in problematic or addictive gaming patterns, marked by gaming-related rage and difficulty disengaging from play (Khalid et al., 2025; Michałkiewicz et al., 2026). The model therefore proposes that emotional dysregulation functions less as something ordinary gaming content directly produces, and more as a pre-existing or co-developing vulnerability that determines how intensely an adolescent's affective system reacts to frustrating or provocative gaming experiences — a vulnerability that gaming may then exacerbate under conditions of problematic engagement.

The Interaction of the Two Pathways

Although moral disengagement and emotional dysregulation are proposed as distinct routes tied to different aggression subtypes, the literature does not support treating them as fully independent. Several studies have directly modeled both mechanisms within a single pathway; parental psychological control, for instance, has been shown to predict child aggression through moral disengagement and emotion regulation operating as parallel partial mediators within the same model (Im & Kim, 2024). Other work demonstrates that cognitive and affective mechanisms can also operate sequentially rather than only in parallel: hostile rumination and moral disengagement show a longitudinal, mutually reinforcing relationship (Cen et al., 2022), and executive dysfunction has been shown to precede alexithymia, which in turn predicts aggression, in a clear serial cognitive-affective chain (Zhang et al., 2025). This suggests the proposed model should not be understood as strictly parallel; rather, moral disengagement and emotional dysregulation are likely to reinforce one another bidirectionally over time; an adolescent whose emotional dysregulation repeatedly produces aggressive outbursts may subsequently develop moral disengagement narratives that retroactively justify that behavior, while an adolescent whose moral disengagement lowers the threshold for acceptable aggression may experience less inhibitory pressure to regulate emotional arousal in the first place.

A further layer of the model concerns individual differences that moderate the strength of each pathway. Callous-unemotional traits emerge repeatedly as a significant amplifier of the moral disengagement pathway specifically: the mediating effect of moral disengagement between violent gaming exposure and cyberbullying is markedly stronger among adolescents with elevated callous-unemotional traits (Wang & Zhou, 2023), and moral disengagement itself moderates the relationship between callous-unemotional traits and online aggressive behavior, such that the combination of high trait callousness and high moral disengagement produces the greatest aggression risk (Song, 2024; Macías-Vasileff et al., 2024). This moderation pattern is theoretically important because it directly addresses a

gap identified earlier in this paper: it specifies, at least partially, for whom the gaming-to-school-aggression pathway is most likely to be behaviorally consequential, rather than treating all gaming-exposed adolescents as equally at risk. The model therefore proposes callous-unemotional traits as a key moderator strengthening the moral disengagement pathway, while trait empathy and self-control function as protective moderators across both pathways, consistent with differential susceptibility evidence showing that low trait empathy amplifies media violence effects on aggression while high empathy buffers them (Dou et al., 2025; Mitchell et al., 2021), and that adolescents with combined gaming problems and low self-regulation show the steepest aggression trajectories over time (Coyne et al., 2023). Adjacent Philippine evidence among senior high school students also links Dark Triad tendencies, including psychopathy characterized by reduced empathy and callousness, to greater vulnerability to academic misconduct-related tendencies, reinforcing the broader importance of dispositional and self-regulatory characteristics in school-based behavior without equating such misconduct with aggression (Lolong et al., 2026).

Translating Distal Exposure into Proximal School Outcomes

The final structural component of the model addresses how this dual-mediator architecture specifically produces school-based, rather than generalized, aggressive outcomes. Existing school-violence risk literature consistently frames media exposure as a distal input, with proximal risk residing closer to individual self-regulation, peer processes, and immediate school ecology (Dou & Zhang, 2025; Mehanović et al., 2025). The present model extends this distal-proximal framing by specifying that moral disengagement and emotional dysregulation are themselves not fully sufficient to produce school-specific aggression on their own; their behavioral expression is further channeled through proximal social mechanisms already identified in the gaming literature, most notably deviant peer affiliation, which has been shown to mediate the relationship between violent gaming exposure and externalizing problem behavior (Wei et al., 2022; Chen et al., 2022), and peer norms that jointly shape both gaming behavior and aggression (Sun & Sun, 2021). An adolescent whose moral disengagement or emotional dysregulation has been reinforced through gaming is therefore proposed to be most likely to enact aggression specifically within the school setting when that adolescent is also embedded in a peer ecology that normalizes, rewards, or fails to sanction aggressive conduct — consistent with broader antisocial-behavior models that distinguish distal factors such as poor climate from proximal mediators such as peer affiliation and self-regulation (Mehanović et al., 2025).

Summary of the Proposed Model

Taken together, the model proposed in this paper specifies four interlocking claims: first, that virtual aggression exposure functions as a distal input rather than a direct cause of school aggression; second, that its behavioral translation occurs primarily through two mediating mechanisms — moral disengagement, more strongly associated with planned and proactive aggression, and emotional dysregulation, more strongly associated with reactive, provoked aggression; third, that these two mechanisms are not fully independent but interact bidirectionally over time and are jointly amplified by dispositional vulnerabilities, particularly callous-unemotional traits, while being buffered by trait empathy and self-control; and fourth, that the ultimate expression of these mechanisms as school-specific aggression is further shaped by proximal peer and social-network processes operating within the school ecology itself. This model does not claim that online gaming is a sufficient or even necessary condition for school aggression; rather, it specifies a plausible, empirically grounded architecture through which gaming exposure may become behaviorally consequential for a specific, identifiable subset of adolescents, under specific interacting conditions, while remaining behaviorally inert for the majority who do not carry these compounding vulnerabilities.

5. Discussion of Findings and Implications

The conceptual model developed in this paper carries several implications for psychological theory, social analysis, and the broader understanding of adolescent behavior in technologically mediated environments. At the theoretical level, the model's central contribution is to reposition a long-contested empirical debate. Decades of inconsistent findings on violent gaming and aggression have often been interpreted as evidence either for or against a direct causal relationship, when the more defensible reading of the accumulated literature is that the relevant question was never adequately specified. By formalizing moral disengagement and emotional dysregulation as distinct but interacting mediators, each tied differentially to proactive and reactive aggression subtypes respectively, this paper offers a more theoretically precise account of why the empirical record has appeared so mixed: studies measuring aggression as an undifferentiated construct, or samples with varying proportions of callous-unemotional traits, would be expected to produce inconsistent effect sizes even if the proposed underlying mechanisms are genuinely operative. This reframing does not resolve the empirical inconsistency so much as explain its theoretical origin, which is itself a meaningful contribution to a field that has too often treated null or weak findings as simply disconfirming evidence rather than as a signal that the wrong variables were being modeled.

For contemporary human life, the model speaks to a broader psychological reality: adolescents today are developing moral and emotional self-regulation capacities within digital environments that did not exist for previous generations, and this paper's central claim is that the psychological consequences of that environment are not uniform but conditional on pre-existing individual vulnerability. This has direct relevance for identity and coping. Adolescence is a developmental period in which moral identity and emotional self-concept are actively under construction, and repeated engagement with virtual environments that reward or normalize aggression may plausibly interact with that developmental process in ways that a single, isolated gaming session would not. The model's emphasis on callous-unemotional traits as an amplifying moderator also carries implications for how psychologists and educators think about behavioral risk more broadly: it suggests that virtual aggression exposure is less a universal developmental hazard than a context that may reveal or intensify vulnerabilities that already exist within a given adolescent's temperament and moral development, rather than one that manufactures those vulnerabilities from nothing.

The theoretical significance of the model's bidirectional and interactive structure also deserves emphasis. By proposing that moral disengagement and emotional dysregulation may reinforce one another over time rather than operating as cleanly separable pathways, the model resists a simplistic, single-mechanism account of aggression formation in favor of a more developmentally realistic picture, one in which an adolescent's cognitive and affective self-regulation systems co-evolve in response to repeated environmental input. This has implications for how psychological intervention might be conceptualized, not as a matter of addressing either moral reasoning or emotional regulation in isolation, but as recognizing that these two capacities may be mutually reinforcing targets, such that improvement in one domain may plausibly support functioning in the other.

At the same time, the boundaries of what this model can and cannot support must be stated clearly. This paper does not establish that online gaming causes school aggression, nor does it specify effect sizes, prevalence rates, or the proportion of school aggression cases attributable to gaming-related mechanisms relative to other distal risk factors such as family violence exposure or community context, which the reviewed literature consistently identifies as comparably or more strongly predictive. The model also does not claim that moral disengagement and emotional dysregulation are the only mediating mechanisms worth considering; peer deviance, normative beliefs, and problematic gaming specifically, rather than gaming exposure in general, all carry independent explanatory weight in the literature reviewed and may operate alongside, rather than solely through, the two mechanisms this model foregrounds. Nor does this paper claim that the proposed differentiation between proactive-moral and reactive-affective pathways is absolute; several studies reviewed here demonstrate meaningful overlap and interaction between the two aggression subtypes, and the model's clean separation should be understood as an analytical simplification intended to generate testable distinctions rather than an assertion of strict mechanistic independence.

Finally, the model's practical relevance lies not in justifying restriction or condemnation of gaming as an adolescent activity, but in offering a more precise account of risk identification. A model that specifies which adolescents are most vulnerable, and through which internal mechanisms that vulnerability is most likely to operate, offers considerably more diagnostic value to school-based mental health practitioners and educators than a generalized exposure hypothesis. Rather than treating all adolescent gamers as an undifferentiated risk population, this model points toward specific, observable indicators, such as elevated callous-unemotional traits, patterns of problematic or compulsive gaming engagement, and pre-existing difficulties with emotional regulation, as more meaningful markers of elevated risk than gaming exposure or genre preference alone.

6. Conclusions and Recommendations

This paper set out to address a long-standing but poorly specified question in media and developmental psychology: whether, and through what means, exposure to virtual aggression in online gaming contributes to school-based adolescent aggression. Rather than treating this as a question of direct causal exposure, the paper has argued that the more theoretically and empirically defensible framing treats gaming exposure as a distal contextual input whose behavioral consequences are substantially shaped by two intervening psychological mechanisms: moral disengagement, which licenses aggression that has already been cognitively planned, and emotional dysregulation, which governs an adolescent's capacity to inhibit aggression in moments of emotional provocation. The proposed model further specifies that these two mechanisms are not fully independent, but interact bidirectionally over time and are jointly amplified by dispositional vulnerabilities such as callous-unemotional traits, while being meaningfully buffered by trait empathy and self-control. Finally, the model situates the translation of these mechanisms into school-specific outcomes within the proximal social ecology of peer affiliation and peer norms, consistent with established school-violence risk architecture that treats media exposure as distal rather than proximal.

The strongest supported insight from this synthesis is that the persistent inconsistency in the empirical literature on gaming and aggression is unlikely to be resolved by further studies testing a direct exposure-effects relationship; it is more plausibly explained by the field's historical tendency to under-specify the mediating mechanisms and

moderating individual differences that determine for whom, and under what conditions, such a transfer becomes behaviorally consequential. A second well-supported insight is that moral disengagement and emotional dysregulation, while both independently linked to adolescent aggression, appear differentially weighted toward proactive and reactive aggression respectively, a distinction with genuine explanatory value that has rarely been applied specifically to the gaming-exposure literature. A third insight, more tentative given the thinner evidence base, is that gaming's contribution to these two mechanisms is itself asymmetric: the pathway to moral disengagement is reasonably well evidenced, while the pathway to emotional dysregulation appears contingent primarily on problematic or addictive gaming patterns rather than on ordinary violent content exposure.

Several recommendations follow from this model, offered with appropriate caution given the conceptual nature of this paper. For future empirical research, the most immediate priority is to test the proposed dual-mediator structure directly, using longitudinal designs capable of distinguishing within-person change in moral disengagement and emotional dysregulation, and examining whether these two mechanisms predict differential aggression subtypes as proposed. Research should also prioritize testing callous-unemotional traits as a formal moderator of the gaming-to-school-aggression pathway specifically, rather than of aggression outcomes in general, since this moderation has been documented mainly in relation to cyberbullying and broader online aggression rather than school-based behavior. For practice, school-based mental health practitioners and educators may benefit from shifting screening and intervention efforts away from gaming exposure or content type as a primary risk indicator, and toward the more specific and diagnostically meaningful markers this model identifies, including patterns of problematic or compulsive gaming engagement, observable difficulties in emotional regulation, and early indicators of callous-unemotional traits or reduced empathic responsiveness. For reflection and future theoretical inquiry, this paper suggests that aggression researchers would benefit from more deliberately integrating cognitive-moral and affective-regulatory frameworks, following the precedent already established by dual-process models such as the Dual-Path Model of Aggression and the I³ Model, rather than continuing to study moral disengagement and emotional dysregulation as parallel but disconnected literatures.

Ultimately, this paper does not claim to have resolved the debate over whether online gaming contributes to adolescent violence. It claims instead to have reframed that debate in a way that is more consistent with the accumulated evidence: not as a question of whether virtual aggression exposure causes school aggression, but as a question of which adolescents, carrying which pre-existing vulnerabilities, embedded within which peer and school contexts, are most likely to experience that exposure as behaviorally consequential. It is this more precise, mechanism-based question that future research on adolescent gaming and school violence should be designed to answer.

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