

Innovative Findings and Proposals on the Evolutionary and Psychobiological Foundations of the Motivation to Bully

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Abstract: Bullying is not merely a product of social and cultural factors but also a complex phenomenon shaped by evolutionary and psychobiological processes. This study examines the motivation to bully by exploring its evolutionary roots and psychobiological foundations, aiming to reveal the multilayered dynamics underlying this behavior. From an evolutionary perspective, bullying may have served functions such as gaining status, controlling resources, and regulating social hierarchies. From a psychobiological perspective, neural structures such as the amygdala, prefrontal cortex, and reward circuits, along with neurohormonal interactions involving testosterone, dopamine, and cortisol, appear to sustain bullying behavior. Additionally, the role of the mirror neuron system in empathy deficits is emphasized. The study further discusses how modern contexts, such as cyberbullying, reshape evolutionary-biological tendencies and proposes an integrative model of bullying motivation. This approach highlights bullying as not only an individual issue but also an interactive process across biological, psychological, and social domains.

Keywords: Bullying; Evolutionary Psychology; Psychobiological Mechanisms; Motivation; Amygdala; Dopamine.

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Introduction

Conceptual Framework of Bullying (copy-paste ready)

Bullying is defined as a deliberate form of action that aims to establish power and control over another person through repeated aggressive behaviors (Olweus, 1993). Most research tends to explain bullying in terms of social environment, family dynamics, or cultural factors. However, a growing body of evidence suggests that bullying is linked not only to environmental influences but also to evolutionary and psychobiological mechanisms (Volk et al., 2012). From this perspective, bullying can be viewed not merely as an individual deviant behavior but also as one of humanity's adaptive strategies.

Importance of the Evolutionary Perspective (copy-paste ready)

Evolutionary psychology seeks to understand human behavior in terms of adaptive functions in ancestral environments (Buss, 2019). From this viewpoint, bullying may historically have served functions such as gaining status, securing access to resources, and obtaining advantages within social hierarchies (Archer & Coyne, 2005). Indeed, there is evidence that bullying during adolescence is associated with leadership and popularity within peer groups (Vaillancourt et al., 2003). Therefore, it is insufficient to treat bullying solely as a "pathological" behavior; it should be re-evaluated within an evolutionary framework.

Conceptual Framework of Bullying

Bullying is conceptualized as an intentional pattern of behavior aimed at asserting power and control over another

individual through repeated aggressive acts (Olweus, 1993). The dominant explanatory models in the literature have emphasized social, familial, and cultural determinants of bullying. Nevertheless, accumulating empirical findings indicate that bullying should also be understood in relation to evolutionary and psychobiological processes (Volk et al., 2012). Accordingly, rather than considering bullying exclusively as an individual-level pathology, it may be more productively framed as one expression of evolved behavioral strategies.

Importance of the Evolutionary Perspective

Evolutionary psychology interprets human behavior through the lens of functions that conferred adaptive advantages in ancestral environments (Buss, 2019). Within this framework, bullying may have historically functioned to secure social status, gain access to resources, and confer advantages within group hierarchies (Archer & Coyne, 2005). Empirical studies have documented associations between adolescent bullying and markers of social influence—such as leadership and popularity—within peer networks (Vaillancourt et al., 2003). Consequently, viewing bullying solely as a pathological phenomenon is limiting; an evolutionary perspective offers a complementary and necessary reappraisal.

The Contribution of the Psychobiological Perspective

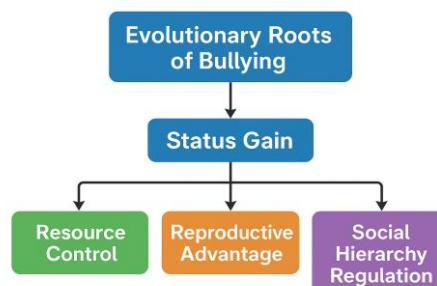
The role of biological mechanisms in the maintenance of bullying behavior has become an increasing focus of research. Neurological structures such as the limbic system (particularly the

amygdala), the prefrontal cortex, and reward circuits regulate the interplay between aggression and reward expectation (Blair, 2010). Furthermore, biochemical factors including testosterone, dopamine, and cortisol levels critically influence tendencies toward bullying (Verdonck et al., 2021). When integrated with environmental conditions and individual experiences, these biological substrates provide a robust framework for explaining both the emergence and persistence of bullying.

Aim of the Study

This article seeks to examine the motivation to engage in bullying from an evolutionary and psychobiological perspective, with the aim of integrating fragmented findings in the literature. In doing so, it demonstrates that bullying is grounded not only in social learning processes or cultural pressures but also in biological and evolutionary mechanisms. Moreover, the study discusses how these evolutionary-biological predispositions are being reshaped in modern contexts (e.g., cyberbullying), thereby offering insights for future clinical research and intervention strategies.

Evolutionary Perspective



Evolutionary Origins of Bullying

Evolutionary psychology explains individual and social behaviors in terms of their adaptive functions in ancestral environments (Buss, 2019). Within this framework, bullying, though superficially appearing as a merely “pathological” behavior, may have historically served specific functions throughout evolutionary history. Most notably, bullying can be understood as a mechanism for acquiring status and controlling resources. Among social species, intragroup competition has often been resolved through physical or symbolic dominance. In this context, bullying may have facilitated individuals in establishing dominance over rivals, thereby gaining higher social status (Archer, 2009).

Another potential function relates to reproductive advantage. Evolutionary literature suggests that males with higher social status tend to secure greater mating opportunities; thus, aggressive behaviors may have been adaptive by increasing reproductive success and facilitating genetic transmission (Wilson & Daly, 1985). Consequently, bullying may have conferred not only individual superiority but also a selective advantage linked to reproductive outcomes.

Finally, bullying behavior may also have functioned in regulating social hierarchies. The continual testing of power balances within a group can clarify boundaries of authority and contribute to the maintenance of order. In this sense, while bullying produces negative outcomes for victims in the short term, it may historically have functioned as a strategy that reinforced stability at the group level (Volk et al., 2012).

Peer Group Adaptation and Hierarchy

From an evolutionary perspective, bullying can be understood not only as an individual display of power but also as a social mechanism that shapes hierarchy within groups. The inherently social nature of humans has fostered constant struggles for status within peer groups. In this context, bullying may serve as a functional tool for determining who assumes leadership roles and who becomes followers (Ellis et al., 2016).

Adolescence represents the developmental stage where this function becomes most salient. Biological changes during this period—such as increases in testosterone—heighten social competition and predisposition toward aggressive behaviors (Campbell, 2006). Research has shown that adolescents who engage in bullying often gain social advantages such as popularity, leadership, or attractiveness among peers (Vaillancourt & Hymel, 2006). Thus, bullying emerges as a strategy reinforced by evolutionary pressures and rewarded with short-term social benefits.

Moreover, bullying within peer groups has also been proposed as a form of adaptive strategy. Individuals who fail to conform to group norms may be subjected to bullying, which in turn reinforces boundaries within the community and helps preserve group cohesion (Salmivalli, 2010). Viewed from this angle, bullying can be interpreted not only as a means of pursuing individual advantage but also as a functional behavior that contributes to the maintenance of collective order.

Psychobiological Mechanisms of the Motivation to Bully

The motivation to bully is closely tied not only to social learning processes but also to biological underpinnings. Throughout evolutionary history, aggression and displays of dominance provided advantages for survival and access to resources; in contemporary contexts, these tendencies manifest as “bullying” in various social settings. Modern psychobiology seeks to understand the motivation to bully from a multilayered perspective by examining the underlying neurobiological systems, hormonal processes, and the role of stress–threat perception. In particular, the functions of brain regions such as the prefrontal cortex, amygdala, and limbic system, as well as neurochemical factors including dopamine, serotonin, cortisol, and testosterone, are of critical importance in uncovering the biological basis of bullying.

Bullying cannot be fully explained solely within social or cultural frameworks; it is also closely connected to an individual’s biological endowment. At the neurobiological level, an imbalance between the prefrontal cortex and the amygdala contributes to aggression and deficits in empathy. Reduced functionality of the prefrontal cortex weakens impulse control, while hyperactivity of the amygdala exaggerates threat perception, predisposing individuals to aggressive behaviors. Moreover, dopamine systems make bullying behavior intrinsically rewarding; the sense of gaining power or status activates reward centers in the brain.

Neurotransmitters and hormones also shape this behavior in significant ways. Low levels of serotonin are linked to impulsivity and aggression, while elevated testosterone levels trigger dominance-seeking and displays of power. Cortisol exerts a dual effect: in some individuals, low cortisol facilitates fearlessness and aggression, whereas high cortisol associated with chronic stress amplifies reactivity to social threats.

From a psychobiological perspective, bullying can also be viewed as an expression of stress and threat perception. Early childhood trauma, for instance, can alter the functioning of the hypothalamic–pituitary–adrenal (HPA) axis, predisposing individuals to both aggressive and defensive forms of bullying. Thus, biological defense mechanisms may emerge as “bullying” in social contexts.

From an evolutionary standpoint, aggression and dominance once conferred survival and resource-gathering advantages for our ancestors. In modern societies, however, the same biological predispositions often clash with social norms, manifesting as maladaptive behaviors. Accordingly, bullying is best understood as a multidimensional phenomenon arising from the interplay between biological tendencies and social contexts.

Evolutionary Adaptation and Maladaptive Transformations of Bullying

The evolutionary origins of bullying are closely linked to individuals' need to strengthen their positions within social hierarchies and increase access to resources. In early human communities, aggressive and dominant behaviors provided advantages in securing hunting grounds, food, and mating opportunities. In this sense, bullying functioned as an adaptive strategy for the individual. Gaining status within the group not only offered immediate benefits but also enhanced the likelihood of genetic transmission.

However, in modern societies, these same tendencies conflict with social norms, legal regulations, and ethical frameworks. Bullying behaviors driven by the pursuit of status or displays of power now result in social exclusion, academic underachievement, psychological difficulties, and legal sanctions. This demonstrates how a once adaptive behavior has become maladaptive under contemporary conditions.

Moreover, bullying produces long-term harms not only for perpetrators but also for victims and group dynamics. While aggression may provide short-term rewards for the perpetrator, it can eventually lead to social isolation and emotional impoverishment. At the group level, bullying undermines trust and weakens collective cooperation. Thus, although bullying may yield evolutionary advantages at the individual level, it simultaneously disrupts social cohesion at the collective level.

Therefore, understanding the motivation behind bullying requires examining both the evolutionary mechanisms of adaptation and the ways in which these mechanisms have become maladaptive in modern sociocultural contexts. In this framework, bullying should be considered a complex behavior situated at the intersection of biological inheritance and contemporary social order.

The Shaping of Bullying Motivation through Social and Cultural Mediators

Although the tendency to engage in bullying has biological underpinnings, the most critical factor determining how this tendency is expressed lies within the social and cultural context. An individual's family environment, peer relationships, school climate, and societal norms largely shape whether aggressive impulses manifest as bullying or are redirected into prosocial orientations.

The family environment is one of the strongest determinants of this process. Parenting styles characterized by violence, authoritarianism, or neglect may foster the expression of children's need for power and control through bullying. In contrast, supportive and secure parenting approaches facilitate the redirection of aggressive tendencies into socially acceptable channels.

Peer groups also play a crucial role in reinforcing bullying behaviors. Bullying is not merely an expression of individual impulses but also a tool for gaining status within the group. In social contexts where popularity and leadership are rewarded through aggression, bullying tends to become more prevalent. However, in environments that emphasize cooperation and mutual support, the same biological inclinations can be channeled into prosocial behaviors.

Cultural norms further determine the visibility and acceptance of bullying. In competitive, individualistic cultures, bullying is more likely to emerge as a tool for asserting personal superiority, whereas in collectivist cultures, the prioritization of group harmony may limit aggressive behaviors. Nevertheless, in collectivist settings, bullying can often manifest in the form of exclusion or marginalization directed toward out-groups.

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Innovative Contribution: In this regard, the present article proposes that the motivation to engage in bullying should not be understood solely as the outcome of an individual's intrinsic biological drives but rather as a dynamic process reconstructed through social and cultural mediators. Importantly, the fact that

“the same biological inclinations” can transform into leadership, protection, or cooperation behaviors in different cultural contexts offers a novel perspective that future research in clinical and cultural psychology should further explore.

The Clinical Psychology Perspective on Bullying

The motivation to engage in bullying should not be considered merely a behavioral problem within clinical psychology but also as a phenomenon intertwined with psychopathological processes. Research indicates that individuals who bully are more likely to exhibit psychological profiles characterized by antisocial

personality traits, narcissistic tendencies, and deficits in empathy. These tendencies often intersect with impulse control disorders, emotional regulation difficulties, and histories of trauma.

Intersection with Psychopathology: Bullying behaviors frequently overlap with externalizing problems. In particular, Impulse Control Disorders, Conduct Disorder, and Antisocial Personality Disorder can be regarded as clinical manifestations of bullying tendencies. Moreover, narcissistic traits and high levels of hostility may reinforce bullying as a tool for achieving social status.

Intersection with Psychopathology	Explanation
Externalizing Problems	Bullying behaviors often overlap with externalizing problems, manifesting as impulsivity, aggression, or rule-breaking.
Impulse Control Disorders	Impaired impulse regulation can increase the likelihood of aggressive or bullying behaviors.
Conduct Disorder	Repetitive violation of social norms and rules can manifest as bullying tendencies.
Antisocial Personality Disorder	Persistent disregard for others' rights can clinically present as bullying.
Narcissistic Traits	Inflated self-importance and lack of empathy can reinforce bullying as a status-seeking strategy.
High Hostility	Aggressive tendencies and hostility can escalate bullying behaviors.

Traumatic Background and Emotion Regulation: Clinical observations demonstrate that bullying behaviors may emerge as a defensive mechanism among individuals exposed to trauma at an early age. Such individuals attempt to reconstruct a sense of

control through aggressive behavior, while in reality developing an anxiety- and helplessness-based regulatory strategy. Thus, bullying can also be understood as a pathological form of “self-protection.”

Therapy and Intervention	Explanation
Behavioral and Emotional Targets	Clinical psychology should address not only behavior modification but also underlying emotion regulation difficulties and cognitive distortions in individuals who bully.
Cognitive Behavioral Therapy (CBT)	Effective for restructuring automatic thoughts related to aggression.
Empathy and Social Problem-Solving Training	Training in empathy and social problem-solving skills plays a role in reducing bullying tendencies.
Emotion Regulation and Trauma-Focused Therapies	Recent approaches, including Emotion Regulation Therapy and trauma-focused interventions, provide innovative contributions in addressing bullying behavior.

Therapeutic and Intervention Dimensions: Clinical psychology should address not only behavioral correction in individuals who engage in bullying but also the underlying difficulties in emotion regulation and cognitive distortions. Cognitive-Behavioral Therapy (CBT) has proven effective in restructuring automatic thoughts associated with aggression. Additionally, interventions targeting empathy training and the development of social problem-solving skills play a significant role in reducing bullying tendencies. More recently, therapies focused on emotion regulation (Emotion Regulation Therapy) and trauma-

oriented approaches have offered innovative contributions to this field.

Innovative Discussion Point: A novel perspective that could be proposed in the clinical context is to conceptualize bullying not merely as a symptom of an individual disorder, but also as a “learned coping mechanism.” This approach allows clinicians to evaluate bullying behavior not from a punitive standpoint, but as a potentially modifiable coping strategy. Consequently, the treatment process can become more comprehensive and effective.

Innovative Discussion Points

Innovative Discussion Point	Explanation
Bullying as a Learned Coping Mechanism	In the clinical context, bullying can be conceptualized not only as a symptom of an individual disorder but also as a learned coping strategy.
Shift from Punitive to Transformative Perspective	This approach allows clinicians to evaluate bullying behavior not from a punitive standpoint, but as a potentially modifiable coping strategy.
Inclusive and Effective Treatment	Viewing bullying as a modifiable coping mechanism can make therapeutic processes more comprehensive and effective.

Discussion and Innovative Contributions

The primary contribution of this study lies in conceptualizing the drive to engage in bullying not merely as a behavioral or sociological phenomenon, but as a multidimensional psychobiopsychosocial construct. While the literature often emphasizes the victimization experience, the motives of perpetrators have received comparatively less attention. The approach proposed here seeks to understand bullying behavior at the intersection of biological predispositions, evolutionary strategies, socio-cultural mediators, and clinical psychopathology.

Innovative Contributions:

- Evolutionary-Psychobiological Origins:** Although the tendency to bully may have historically served as an adaptive strategy, in modern societies it often results in maladaptive outcomes. Considering these dual aspects together provides a novel framework for understanding both the historical function and contemporary harms of the behavior.
- Integration of Psychobiological Mechanisms:** The roles of biological factors such as dopamine, serotonin, testosterone, and cortisol in motivating bullying are integrated with social context to develop a more holistic perspective.

3. Socio-Cultural Flexibility: The same biological tendencies may manifest as bullying, leadership, or prosocial behavior depending on cultural norms, a topic warranting further discussion in clinical and cultural psychology literature.

4. Clinical Reframing: Viewing bullying not only as a symptom of pathology but also as a learned and potentially modifiable coping strategy offers an innovative paradigm for therapeutic approaches.

Novel Discussion Points:

- Redefining bullying not merely as “harmful behavior” but also as a “learned attempt at control.”
- Conceptualizing the evolutionary functions of bullying in the context of contemporary social costs, framed as an “adaptation–maladaptation paradox.”
- Emphasizing the necessity of considering bullying in clinical psychology not only through the lens of the perpetrator’s pathology but also within the broader social ecosystem.

In conclusion, this approach highlights the multilayered structure of the drive to bully, offering innovative contributions to both academic discourse and clinical practice.

Discussion and Innovative Contributions	Explanation
Multidimensional Psychobiopsychosocial Perspective	The study conceptualizes the drive to bully not merely as a behavioral or sociological phenomenon, but as a multidimensional psychobiopsychosocial construct.
Evolutionary-Psychobiological Origins	Bullying tendencies, historically adaptive, may lead to maladaptive outcomes in modern society. This dual perspective provides a unique framework for understanding both historical functions and contemporary harms.
Integration of Psychobiological Mechanisms	Biological factors such as dopamine, serotonin, testosterone, and cortisol are linked with social context to create a holistic understanding of bullying motivation.
Socio-Cultural Flexibility	The same biological tendencies may manifest as bullying, leadership, or prosocial behavior depending on cultural norms.
Clinical Reframing	Bullying can be viewed as a learned and modifiable coping strategy rather than solely a pathological symptom, offering a novel paradigm for therapeutic approaches.
Novel Discussion Points	<ul style="list-style-type: none"> - Redefining bullying as a “learned attempt at control.” - Conceptualizing the evolutionary function vs. societal cost as an “adaptation–maladaptation paradox.” - Addressing bullying in clinical psychology not only via perpetrator pathology but also within the social ecosystem.

Conclusion

The evolutionary and psychobiological foundations of the drive to engage in bullying provide critical insights for understanding human nature at both individual and societal levels. From an evolutionary perspective, bullying behavior can be conceptualized not merely as a form of aggression, but as a strategic mechanism shaped to secure advantages in resource competition, reinforce intra-group hierarchies, and attain social status. At the psychobiological level, this behavior is supported by the interaction of dopaminergic reward circuits, amygdala activation, stress hormones, and neural pathways associated with empathy.

The innovative contribution of this study lies in framing bullying not solely as an individual pathology or a societal

problem, but as a multidimensional adaptive strategy and a biopsychosocial pivot point. In particular, the intersection of reward mechanisms and intra-group status acquisition offers a critical perspective for understanding bullying behavior. Moreover, the relationship between neurological processes that suppress or diminish empathy and bullying underscores that this behavior is rooted not only in social but also in biological mechanisms.

Moreover, in modern societies, the evolutionary functions of bullying appear to have lost their relevance; rather than serving as a means to reinforce an individual’s position within a group, bullying has increasingly become a source of social exclusion, psychological trauma, and societal maladjustment. This highlights a conflict between evolutionary heritage and contemporary social structures.

Future research should examine how the neurobiological processes underlying bullying are shaped by individual differences, as well as how environmental, cultural, and genetic factors interact with this drive. Additionally, interventions aimed at enhancing empathy should be evaluated for their potential to disrupt this cycle. In particular, AI-assisted neuroimaging analyses, studies of genetic predispositions, and cross-cultural comparisons hold considerable promise for elucidating both the biological and social dimensions of bullying more comprehensively.

In conclusion, understanding the evolutionary and psychobiological foundations of the drive to bully not only illuminates the darker aspects of human behavior but also informs efforts to promote social harmony, psychological well-being, and the development of more equitable social structures.

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