

# Aggressive Motivation: An Introduction and Overview

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This article introduces a special issue on Aggressive Motivation. After briefly considering some important concepts and definitions in the psychological study of aggression and aggressive motivation, this article provides short summaries of the 8 contributions to this special issue. These articles focus on contemporary theory and research, and they come from a wide array of theoretical and methodological approaches in biological, developmental, social, personality, and clinical psychology.

*Keywords:* aggression, anger, approach motivation, psychopathy

Aggressive motivation underlies some of the most harmful behaviors to individuals and societies. Yet, aggression is universal and exists in many animal species, suggesting that it may have served some adaptive benefits (e.g., Archer, 2009; Buss & Shackelford, 1997). Aggressive motivation likely originated, evolutionarily speaking, as adaptive processes involved in coopting and protecting resources and coping with threats. Moreover, aggression occasionally benefits individuals and societies. Consider how the Allied forces ultimately stopped Hitler and his German forces from their evil plans. Curiously, many individuals enjoy watching violent movies and playing violent games. Aggression is thus embedded in our lives and is likely to continue as long as we as a species do.

## Concepts and Definitions Used in Aggression Research

Psychologists often define aggression as “a kind of behavior, whose goal is the injury of some person or object” (Berkowitz, 1965; p. 301). In addition to this intent to harm, psychologists posit that with aggression “the perpetrator must believe that the behavior will harm the target, and that the target is motivated to avoid the behavior” (Anderson & Bushman, 2002, p. 28).

In spite of aggression being metabolically costly and potentially risky, it serves a functional purpose in terms of securing resources and survival. Importantly, what can be considered functional and dysfunctional (toxic) forms of aggression is not a trivial question

and depends on many contextual and environmental factors as well as hardwired neurobiological predispositions. The multifactorial origin of aggression is further illustrated by research showing that aggressive motivation is influenced by various factors that include circadian state, stress levels, reproductive state, self-esteem, and social status (Lischinsky & Lin, 2020; Denson et al., 2022).

It is important to note that aggressive behavior is not equivalent to aggressive motivation. For example, an individual could be motivated to aggress, but never engage in aggressive behavior because of competing motivations (e.g., fear of harm, social disapproval, long-term negative consequences). However, aggressive motivation may still influence the individual’s perceptions, cognitions, and physiological responses. Several types of variables influence aggressive motivation, much like other motivational responses (Harmon-Jones et al., 2013; Izard, 1993). That is, aggressive motivation may be influenced by neurobiological processes (e.g., hormones, neurotransmitters, drugs, electrical or chemical stimulation of brain; Panksepp, 1998; Hortensius et al., 2012); sensorimotor processes (e.g., facial expressions, posture; Harmon-Jones & Peterson, 2009; Koole et al., 2022; Peterson et al., 2008); other motivational or emotional processes (e.g., pain, unpleasant moods, anger; Berkowitz, 1993; Niedbala et al., 2018); and cognitive processes (e.g., appraisals, judgments, beliefs, anticipations; many of these are about the situation/context; Berkowitz & Harmon-Jones, 2004; Huesmann, 2018).

Different “types” of aggressive behavior have been identified, and these types essentially speak to the motivation driving the aggressive behavior. These types are often presented as dichotomies (Allen & Anderson, 2017). Some common ones are: hostile versus instrumental aggression, impulsive versus premeditated aggression, and reactive versus proactive aggression. These dichotomies overlap with each other. Although some scientists use them interchangeably, each of these dichotomies emphasize somewhat different aspects of aggression (Anderson & Huesmann, 2003). Hostile aggression is aimed at harming someone, whereas instrumental aggression is aimed at gaining some other outcome (e.g., money). Impulsive aggression refers to thoughtless aggression, whereas

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premediated aggression refers to thoughtful, planned aggression. Reactive aggression is aggressive behavior that occurs in response to provocation, whereas proactive aggression is aggressive behavior that occurs without provocation.

Hostile aggression is also referred to as affective aggression, and this latter phrase may more accurately capture the opposite of instrumental aggression, because affective aggression can result from more affective responses than just hostility/anger. Fear, for example, can motivate aggression when an individual is facing an unescapable threat. Fear-based versus anger-based aggression have been referred to as defensive versus offensive aggression in the nonhuman animal aggression literature (Blanchard & Blanchard, 2003). This latter distinction relates to one based on motivational direction, as aggressive motivation could be due to approach or avoidance tendencies (Harmon-Jones et al., 2013).

Although these dichotomies are widely used by many aggression researchers, some researchers have noted that they do not accurately classify all aggression, because aggression can result from mixed motives (Anderson & Huesmann, 2003). For example, prisoner A may have crafted plans to aggress against prisoner B in order to earn entry into a gang. However, at lunch one day, prisoner B cuts in front prisoner A in the line for food. This enrages prisoner A and he aggressively punches prisoner B, which sends him to the infirmary. Because of this, prisoner A earns entry into the gang. This example illustrates how both instrumental and hostile motives likely causes prisoner A's aggressive behavior. Classifying aggressive motivation as continuous dimensions rather than dichotomies aids in addressing this problem of mixed motives (Anderson & Huesmann, 2003).

In addition to these distinctions, aggressive motivation and behavior can differ in other ways depending on the context or situation in which it occurs. Examples include maternal aggression, male–male aggression, female–female aggression, and seasonal aggression, as Rieger et al. (2022) review in this issue. These situations shape the way aggression unfolds.

### Overview of the Articles in the Special Issue

This special issue contains a series of articles that focus on contemporary theory and research related to aggressive motivation from a wide array of theoretical and methodological approaches in biological, developmental, social, personality, and clinical psychology. Below, we briefly review the contributions to this special issue.

Rieger et al. (2022) provide an excellent review of research examining the neuroendocrine bases of several types of aggression in rodents, including maternal aggression, male–male aggression, female–female aggression, and seasonal aggression. Their review emphasizes appetitive and consummatory aggression, and how this conceptual refinement contributes to understanding human aggression. Several neuroendocrine drivers of aggression are reviewed, including sex steroid hormones; “stress” hormones; oxytocin, vasopressin, melatonin; and the neurotransmitters GABA, glutamate, serotonin, and dopamine. In reviewing the contributions of these hormones and neurotransmitters to aggression, they also cover research on brain circuits that integrate aggression and neuroendocrinology.

In the article by Blair (2022), a cognitive neuroscience-based model of aggression motivation is discussed that consists of four

neurocognitive systems implicated in aggressive behavior. These systems are involved in (a) the acute threat response, (b) representation of the expected outcome of the behaviors associated with aggression, (c) response to distress cues of others, and (d) response control. A high response to imminent threat or erroneous representation of reward outcomes can both increase the likelihood of reactive aggression. Additionally, higher sensitivity for the other's distress signals and increased response control may mitigate aggressive motivation. Neuroscience research suggests that the neurotransmitter dopamine plays a role in reinforcement-based decision-making, responsiveness to distress cues, and response control/inhibition, while the neurotransmitter serotonin is involved in downregulating acute threat responses and at the same time boosting the system of expected outcome.

In addition to neurotransmitters, the steroid hormone testosterone has been implicated in aggression motivation, especially when it involves social status and dominance (Rijnders et al., 2022). The included research article by Rijnders and colleagues shows a positive association between testosterone and antisocial behavior (e.g., reactive aggressive behavior) as assessed with the four facet-model of the Psychopathy Checklist Revised (PCL-R) in adult male inpatients. Notably, the relation was found in psychopathic patients who had resided in maximum-security forensic psychiatric hospitals for almost ten years.

Aggressive behavior during adolescence is an important antecedent of antisocial and criminal activity later in life. The systematic review by Blankenstein and colleagues (2022) offers support for the idea that low basal levels of the stress hormone cortisol and reduced autonomic nervous system activity are associated with higher levels of aggression. However, considerable heterogeneity was observed that could in part be explained by methodological differences in the way the studies were conducted. In addition, results of the systematic review point toward the importance of taking psychosocial factors into account for understanding aggression motivation and antisocial behavior in adolescents as well as adults.

Kruihof et al. (2022) provide a comprehensive review of research that implicates the cerebellum in aggression. More precisely, the available evidence suggests that the medial cerebellum (the vermis) is part of the neural circuit involved in fast, preattentive processing during situations that may prompt aggression, and as such, the vermis may be an important contributor to impulsive forms of aggression. In contrast, because the lateral cerebellar hemispheres connect to the motor and prefrontal cortices, they may provide neural mechanisms that contribute to top-down regulatory control that is responsible for more premeditated and instrumental forms of aggression. This review of the available evidence suggests that the cerebellum be added as a critical part of the neural circuitry of aggression.

Dominance and status are examples of psychosocial factors that are positively correlated with aggressive motivation. These associations also occur in playing violent computer games in daily life settings, as Denson and colleagues (2022) review. They also propose that playing violent video games may offer players psychological protection against the fear of death and allow for the expression and regulation of anger. While violent video games can be played by virtually everyone, individuals from low status groups are more likely to play these types of games. As Denson et al. discuss, these individuals may be more likely to play violent

video games because the games fulfill their psychological needs of enhancing agency and self-esteem.

Koole et al. (2022) provide a series of studies that suggest that the state anger and aggression of individuals who are high in trait anger may depend on their current basic motivational states. More precisely, individuals who scored high (vs. low) in trait anger had increased anger and aggression when their current state was manipulated to be more rather than less approach-oriented. Interestingly, the approach motivational state of individuals was manipulated via body postures and movement. Results across three studies were consistent in demonstrating that trait anger predicted increased state anger and aggression when individuals were in high approach-oriented postures, but not when they were in low approach-oriented postures. Consistent with the idea that sensorimotor processes can influence aggressive motivation and behavior, these results suggest that general approach motivational body postures and movements influence whether trait anger triggers state anger and aggressive behavior.

In the final contribution of this special issue, Esser and Eisenbarth (2022) provide novel empirical evidence regarding the contribution of psychopathy to aggression. Compared to individuals without psychopathy, individuals with psychopathy are often more aggressive, lower in empathy, and have shallower affect. These characteristics may be the result of one of two processes: a specific impairment of emotion processing or a general attentional neglect of goal-irrelevant information. Because past research had confounded attentional focus with explicit learning instructions, this research was unable to answer which impairment contributed to the characteristics of psychopathy. Esser and Eisenbarth conducted a large study to separate selective attention toward emotional or nonemotional information from the effect of implicit and explicit learning processes. Results for the measure of psychopathy as a unitary construct provided no evidence for reduced learning from emotional information under implicit or explicit learning conditions. However, individuals who scored high on the callous-unemotional (cold-heartedness) personality trait of psychopathy had impaired implicit but not explicit learning from emotional information, even when this information the focus of attention. This finding reveals that cold-heartedness is correlated with impaired implicit emotional processing, but that this impairment is eliminated under explicit, intentional task processing.

## Conclusion

Aggressive behavior is powered by numerous underlying motives, including anger, fear, dominance, self-esteem, getting access to limited resources including food and mating partners, or tension relief due to frustration. While aggression is generally considered a destructive form of behavior, aggression is nonetheless part of our behavioral survival repertoire and hardwired in the brains of animals and humans. Depending on the specific situation, aggression can be both adaptive and maladaptive, and the complexity of aggression cannot be underestimated. This special issue collection represents an effort to further expand our knowledge and understanding of aggression from a multidisciplinary perspective.

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