

The Role of Positive Affect in Aggression

David S. Chester

Department of Psychology, Virginia Commonwealth University

Abstract

Aggressive behavior hurts us all and is studied across psychology's subdisciplines. Classical theories discuss the causes of aggression in the context of negative affect (e.g., frustration, pain). However, more recent research implicates *positive* affect as an important correlate and cause of aggression. Such aggressive pleasure likely evolved from ancient predatory tendencies that later yielded reproductive benefits, holds across reactive and proactive forms of aggression, and is used strategically as an item in many people's emotion-regulation toolkit. Findings from psychological and neural sciences have converged to detail aggression's hedonically pleasant qualities and the motivational and biological mechanisms through which they occur. This new approach generates novel hypotheses and might lead to effective interventions that mollify mankind's aggressive tendencies.

Keywords

aggression, positive affect, reward, pleasure, motivation

To see others suffer does one good, to make others suffer even more: this is a hard saying but an ancient, mighty human, all-too-human principle. . . . Without cruelty there is no festival.

—Friedrich Nietzsche, (1887/1913)

From politicians to preschoolers, humans tend to act aggressively. Yet it seems that people do not simply aggress haphazardly but that they might even *enjoy* it: Terrorists crow about their latest attacks, schoolyard bullies revel in their daily routines of torture, and pugilists boast of the pleasure they will experience in their upcoming bout. Quotidian observations like these are hard to reconcile with conventional approaches to aggression that focus on aversive, negative affective states such as frustration and pain (Berkowitz, 1989). New findings, alongside classic ones, have begun to establish support for the possibility that *positive* affect may also play an important role in causing aggressive behavior.

What Is Positive Affect?

Affect, put simply, is feeling. More formally, affect is a valenced subjective experience, meaning that it can be pleasant or aversive or both simultaneously (Watson & Tellegen, 1985). Positive affect is a subjectively pleasant

feeling, and negative affect is a subjectively unpleasant feeling. Another feature of an affective state, which is orthogonal to valence, is the extent to which it is associated with arousal (Posner, Russell, & Peterson, 2005). Positive affect can thus exist in various states of arousal (e.g., high arousal: joy; low arousal: relaxation). Yet why would aggression be pleasant?

Why Would Aggression Feel Good?

Aggression's basis in positive affect may have evolved into its current state from ancestral forms. Humans have a long evolutionary history as a predatory organism, and motivational brain circuitry that tied predation and, later, hunting with positive affect would be selected for in the larger population. This aggressive pleasure might then be exapted beyond hunting behaviors to aggression against conspecifics as such acts promoted not only survival but yielded reproductive benefits as well (Griskevicius et al., 2009). Yet first it must be established if aggression is actually linked to positive affect.

Corresponding Author:

David S. Chester, 302 Thurston House, Virginia Commonwealth University, Richmond, VA, 23284
E-mail: dschester@vcu.edu

Early Theories

The proposal that aggression is associated with positive affect is hardly new. Freudian notions of catharsis have long asserted that negative affect builds until aggressive acts release it, resulting in pleasant relief (see Bushman, 2002). Excitation Transfer Theory posited that states of excitement and arousal magnified aggression (Zillmann, Katcher, & Milavsky, 1972). Clinicians even formalized a (now-removed) diagnosis for individuals who derived pleasure from sexual aggression (Krueger, 2010). Evidence has arisen since these early advancements to further suggest that positive affect and aggression are yoked.

Aggression is not a monolithic construct and exists in reactive (i.e., in response to threat/provocation) and proactive (i.e., not in response to threat/provocation) forms (Anderson & Bushman, 2002). Reactive aggression is the more common of the two and has the largest corpus of evidence that it is linked to positive affect.

Evidence for the Link Between Reactive Aggression and Positive Affect

Self-report evidence

Individuals' self-reflections provide additional evidence for the association between aggression and positive affect. Reading aggressive narratives (e.g., the retaliatory killing of Osama Bin-Laden) leads to writing styles indicative of both negative and positive affect (Eadeh, Peak, & Lambert, 2017). Previous work arguing that aggressive retaliation is purely aversive (Carlsmith, Wilson, & Gilbert, 2008) failed to treat negative and positive affect reports as orthogonal, thus obscuring the mixed experience of aggression. Aggressive acts such as sticking pins in a voodoo doll are associated with higher scores on positive affect measures (Chester & DeWall, 2017a; Chester, DeWall, & Enjaian, 2017). Principal components analyses of various affect measures collected while participants aggressed in the laboratory revealed that a pleasure factor (e.g., "I felt delighted/pleasant/rewarded") explained most of the variance in affect (Chester, 2017). Scores on this pleasure factor were associated with greater aggression, whereas scores on low-arousal, positive affect items (e.g., "I felt calm/relaxed/at-peace") were unassociated with aggression. Thus, aggression is linked to the subjective experience of positively valenced affect and moderate to high levels of arousal, also referred to as positive arousal (Knutson, Taylor, Kaufman, Peterson, & Glover, 2005). Across all of these findings, the aggression was retaliatory in nature (i.e., in response to a perceived provocation). In line with the folk concept of "sweet revenge,"

it appears that the hedonic experience of aggressive pleasure is magnified by prior provocations.

Trait evidence

Personality traits that have the experience of positive arousal at their core are linked to aggression. Indeed, sensation-seeking, positive urgency, and behavioral approach are all positively associated with aggressiveness (Chester, DeWall, Derefinko et al., 2016; Miller, Zeichner, & Wilson, 2012). The tendency to find aggression pleasant may itself be a personality trait. Sadism, which exists at clinical and subclinical levels, is characterized by the tendency to enjoy harming other people and animals (Buckels, Jones, & Paulhus, 2013). Such sadistic tendencies are reliably linked to both greater aggression and greater reports of positive affect during the aggressive act (Chester et al., 2017).

Genetic evidence

Approximately half of the variance in aggression is due to genetic factors (Moffitt, 2005). Genotypes that regulate levels of reward-modulating neurotransmitters such as dopamine and serotonin are associated with aggressive behavior (Chester, DeWall, Derefinko et al., 2016; Chester et al., 2015).

Nonhuman animal evidence

Mice exhibit a so-called conditioned preference for experimental settings in which they aggressed against a conspecific (Martínez, Guillén-Salazar, Salvador, & Simón, 1995). This suggests that aggression is intrinsically reinforcing. Further, mice exert effort in order to aggress against a submissive conspecific, as they would with conventional reinforcers (e.g., food; Legrand, 2013). Chemically blunting activity in the mouse brain's reward circuit subsequently reduced aggressive behavior (Coppis & Kennedy, 2008). These murine models of aggression are limited for many reasons, one of the most critical being that mice are not predators and thus their aggressive behaviors do not share the same evolutionary basis as humans. Despite these limitations, the innate reinforcement that aggression provides suggests a strong underlying neural basis.

Neuroimaging evidence

Electrical brain recording studies showed that anger and aggressive responses to insult were associated with a neural signature of approach motivations, which are often indicative of positive affect (Carver & Harmon-Jones, 2009). Functional MRI techniques have demonstrated that retaliatory aggression is associated with greater activation

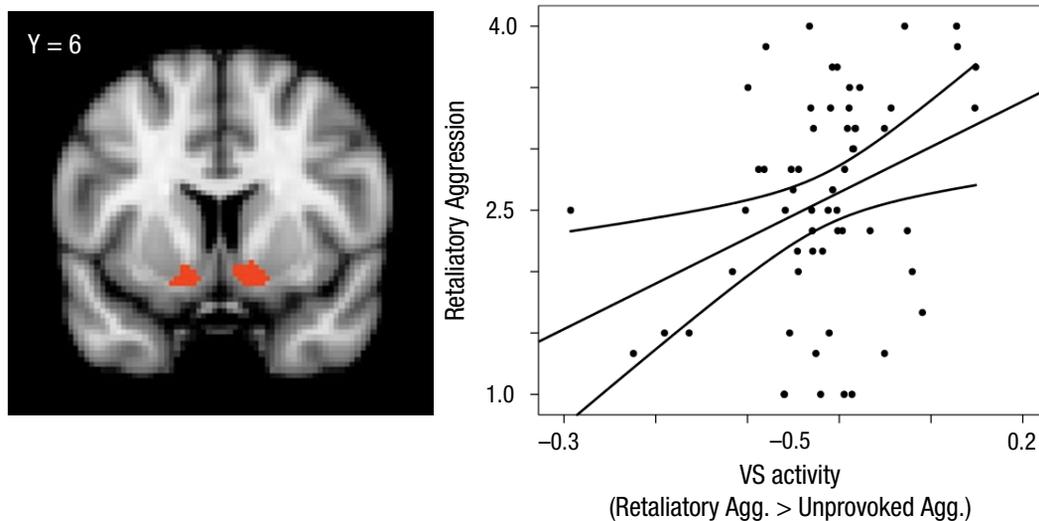


Fig. 1. Data from Chester and DeWall (2017b) depicting a positive association between greater aggression and ventral striatum (VS) activity, $r(58) = .34$, $p = .007$.

in the brain's reward circuitry (e.g., ventral striatum: Chester & DeWall, 2016, 2017b; Fig. 1). Aggressiveness is further associated with a regulatory disequilibrium between the striatum and the lateral prefrontal cortex, which is tipped in favor of this reward substrate (Chester & DeWall, 2016, 2017b). Such a neural reward bias can even be used to differentiate antisocial criminals from their noncriminal counterparts (Geurts et al., 2016). Thus, the brain's reward circuit appears to strongly promote aggressive behavior.

Taken together, there is a considerable and growing body of empirical evidence that positive affect plays a magnifying role in reactive aggressive behavior.

Proactive and Appetitive Aggression

Proactive forms of aggression are less common and thus less well-researched. However, there is plentiful evidence that individuals seek out aggressive activities (e.g., hunting, violent video games) for the sake of enjoyment and not due to some prior provocation (Bushman & Whitaker, 2010). Such acts have been labeled "appetitive aggression" and implicated in violence perpetrated by combatants in African and South American military conflicts (Hecker, Hermenau, Maedl, Elbert, & Schauer, 2012; Weierstall & Elbert, 2011). Revenge may not be the only form of aggression that is sweet, and this sweetness may be a useful tool for individuals who seek to maintain positive affect.

Harnessing Aggression's Positive Affect to Regulate Emotions

People have complex motives behind their behavior, but the desire to feel good and not feel bad are among

the most prominent (Tamir, 2016). Having established that aggression can be a font of positive affect, it may be that aggressive behavior is motivated by such attempts to combat pain with pleasure. Supporting this prediction, individuals who act aggressively tend to be those who expect that aggression will improve their affective state (Bushman, Baumeister, & Phillips, 2001; Bushman, Baumeister, & Stack, 1999; Chester & DeWall, 2017a; Chester, Merwin, & DeWall, 2015). Aggressive acts do appear to repair individuals' damaged mood, and this effect is largely driven by increases in positive affect (Chester & DeWall, 2017a). As such, aggression appears to be an effective means of emotion-regulation, albeit temporarily. Indeed, aggressive acts tend to backfire, resulting in greater negative affect in the longer term (Chester et al., 2017).

This ability of the expectation that aggression will improve one's emotions to drive aggressive acts fits with the conceptualization of anticipatory affect as a potent force in human behavior (DeWall, Baumeister, Chester, & Bushman, 2016). Aggression is likely driven by a dynamic interaction between the negative affect that an individual currently feels and the positive affect that he or she expects to feel during the aggressive act.

Conclusions

Aggression can be an adaptive response to an environment rife with threats. Yet all too frequently it is an impulsive shove in response to an insult, a later-regretted haymaker after one too many cocktails, or a sought-after brawl due to a long-simmering conflict. With the advent of modern society's laws and prohibitions against violence, not to mention assault rifles, the persistence of aggression in the face of these extreme consequences

is a contemporary paradox. A possible reason for the persistence of aggression is its associated positive affect. Much future research is needed to support and extend the role of positive affect in aggression. Doing so is an important next step in understanding how feeling good can lead to acting bad.

Recommended Readings

- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, *53*, 27–51. A classic in the aggression literature, which articulates the various forces that increase and decrease aggressive behavior.
- Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin*, *135*, 183–204. This paper discusses how anger and aggression can arise from “activated” states such as approach.
- Chester, D. S., & DeWall, C. N. (2016). The pleasure of revenge: Retaliatory aggression arises from a neural imbalance towards reward. *Social Cognitive and Affective Neuroscience*, *11*, 1173–1182. This paper provides neuroimaging evidence and discussion regarding why aggression may arise from positive, as well as negative, affect.
- Finkel, E. J. (2014). The I³ Model: Metatheory, theory, and evidence. In J. M. Olson & M. P. Zanna (Eds.), *Advances in experimental social psychology* (Vol. 49). San Diego, CA: Academic Press. A classic in the aggression literature, which articulates the various forces that increase and decrease aggressive behavior and includes a host of useful citations.

Acknowledgments

The author is grateful to Nathan DeWall for his guidance and support throughout the research that formed the basis for this paper.

Declaration of Conflicting Interests

The author declared no conflicts of interest with respect to the authorship or the publication of this article.

References

- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, *53*, 27–51.
- Berkowitz, L. (1989). Affective aggression: The role of stress, pain, and negative affect. In R. G. Geen & E. Donnerstein (Eds.), *Human aggression: Theories, research, and implications for social policy* (pp. 49–72). San Diego, CA: Academic Press.
- Buckels, E. E., Jones, D. N., & Paulhus, D. L. (2013). Behavioral confirmation of everyday sadism. *Psychological Science*, *24*, 2201–2209.
- Bushman, B. J. (2002). Does venting anger feed or extinguish the flame? Catharsis, rumination, distraction, anger, and aggressive responding. *Personality and Social Psychology Bulletin*, *28*, 724–731.
- Bushman, B. J., Baumeister, R. F., & Phillips, C. M. (2001). Do people aggress to improve their mood? Catharsis beliefs, affect regulation opportunity, and aggressive responding. *Journal of Personality and Social Psychology*, *81*, 17–32.
- Bushman, B. J., Baumeister, R. F., & Stack, A. D. (1999). Catharsis, aggression, and persuasive influence: Self-fulfilling or self-defeating prophecies? *Journal of Personality and Social Psychology*, *76*, 367–376.
- Bushman, B. J., & Whitaker, J. L. (2010). Like a magnet catharsis beliefs attract angry people to violent video games. *Psychological Science*, *21*, 790–792.
- Carlsmith, K. M., Wilson, T. D., & Gilbert, D. T. (2008). The paradoxical consequences of revenge. *Journal of Personality and Social Psychology*, *95*, 1316–1324.
- Carver, C. S., & Harmon-Jones, E. (2009). Anger is an approach-related affect: Evidence and implications. *Psychological Bulletin*, *135*, 183–204.
- Chester, D. S. (2017). *Development and validation of the aggressive pleasure scale*. Manuscript in preparation.
- Chester, D. S., & DeWall, C. N. (2016). The pleasure of revenge: Retaliatory aggression arises from a neural imbalance towards reward. *Social Cognitive and Affective Neuroscience*, *11*, 1173–1182.
- Chester, D. S., & DeWall, C. N. (2017a). Combating the sting of rejection with the pleasure of revenge: A new look at how emotion shapes aggression. *Journal of Personality and Social Psychology*, *112*, 413–430.
- Chester, D. S., & DeWall, C. N. (2017b). *Frontostriatal contributions to trait physical aggression*. Manuscript submitted for publication.
- Chester, D. S., DeWall, C. N., Derefinko, K. J., Estus, S., Lynam, D. R., Peters, J. R., & Jiang, Y. (2016). Looking for reward in all the wrong places: Dopamine receptor gene polymorphisms indirectly affect aggression through sensation-seeking. *Social Neuroscience*, *11*, 487–494.
- Chester, D. S., DeWall, C. N., Derefinko, K. J., Estus, S., Peters, J. R., Lynam, D. R., & Jiang, Y. (2015). Monoamine oxidase A (MAOA) genotype predicts greater aggression through impulsive reactivity to negative affect. *Behavioural Brain Research*, *283*, 97–101.
- Chester, D. S., DeWall, C. N., & Enjaian, B. (2017). *Sadism and aggression: Inflicting pain to feel pleasure*. Manuscript submitted for publication.
- Chester, D. S., Merwin, L. M., & DeWall, C. N. (2015). Maladaptive perfectionism's link to aggression and self-harm: Emotion regulation as a mechanism. *Aggressive Behavior*, *41*, 443–454.
- Couppis, M. H., & Kennedy, C. H. (2008). The rewarding effect of aggression is reduced by nucleus accumbens dopamine receptor antagonism in mice. *Psychopharmacology*, *197*, 449–456.
- DeWall, C. N., Baumeister, R. F., Chester, D. S., & Bushman, B. J. (2016). How often does currently felt emotion predict social behavior and judgment? A meta-analytic test of two competing theories. *Emotion Review*, *8*, 136–143.
- Eadeh, F. R., Peak, S. A., & Lambert, A. J. (2017). The bittersweet taste of revenge: On the negative and positive

- consequences of retaliation. *Journal of Experimental Social Psychology*, *68*, 27–39.
- Geurts, D. E. M., von Borries, K., Volman, I., Bulten, B. H., Cools, R., & Verkes, R.-J. (2016). Neural connectivity during reward expectation dissociates psychopathic criminals from non-criminal individuals with high impulsive/antisocial psychopathic traits. *Social Cognitive and Affective Neuroscience*, *11*, 1326–1334.
- Griskevicius, V., Tybur, J. M., Gangestad, S. W., Perea, E. F., Shapiro, J. R., & Kenrick, D. T. (2009). Aggress to impress: Hostility as an evolved context-dependent strategy. *Journal of Personality and Social Psychology*, *96*, 980–994.
- Hecker, T., Hermenau, K., Maedl, A., Elbert, T., & Schauer, M. (2012). Appetitive aggression in former combatants—Derived from the ongoing conflict in DR Congo. *International Journal of Law and Psychiatry*, *35*, 244–249.
- Knutson, B., Taylor, J., Kaufman, M., Peterson, R., & Glover, G. (2005). Distributed neural representation of expected value. *Journal of Neuroscience*, *25*, 4806–4812.
- Krueger, R. B. (2010). The DSM diagnostic criteria for sexual sadism. *Archives of Sexual Behavior*, *39*, 325–345.
- Legrand, R. (2013). Successful aggression as the reinforcer for runway behavior of mice. *Psychonomic Science*, *20*, 303–305.
- Martínez, M., Guillén-Salazar, F., Salvador, A., & Simón, V. M. (1995). Successful intermale aggression and conditioned place preference in mice. *Physiology & Behavior*, *58*, 323–328.
- Miller, J. D., Zeichner, A., & Wilson, L. F. (2012). Personality correlates of aggression evidence from measures of the five-factor model, UPPS model of impulsivity, and BIS/BAS. *Journal of Interpersonal Violence*, *27*, 2903–2919.
- Moffitt, T. E. (2005). The new look of behavioral genetics in developmental psychopathology: Gene–environment interplay in antisocial behaviors. *Psychological Bulletin*, *131*, 533–554.
- Nietzsche, F. (1913). *The genealogy of morals* (H. B. Samuel, Trans.). New York, NY: Boni and Liveright. (Original work published 1887)
- Posner, J., Russell, J. A., & Peterson, B. S. (2005). The circumplex model of affect: An integrative approach to affective neuroscience, cognitive development, and psychopathology. *Development and Psychopathology*, *17*, 715–734.
- Tamir, M. (2016). Why do people regulate their emotions? A taxonomy of motives in emotion regulation. *Personality and Social Psychology Review*, *20*, 199–222.
- Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin*, *98*, 219–235.
- Weierstall, R., & Elbert, T. (2011). The Appetitive Aggression Scale—Development of an instrument for the assessment of human's attraction to violence. *European Journal of Psychotraumatology*, *2*(0).
- Zillmann, D., Katcher, A. H., & Milavsky, B. (1972). Excitation transfer from physical exercise to subsequent aggressive behavior. *Journal of Experimental Social Psychology*, *8*, 247–259.