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Frustration–Aggression Theory

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Frustration–aggression theory, more commonly known as the frustration–aggression hypothesis, ranks among the most seminal and prolific theories in research on aggression. From its beginnings in the late 1930s until today, it has been applied and studied in a variety of areas, including clinical and social psychology, ethnology, sociology, criminology, and medical research. While frustration–aggression theory has also been used to explain the behavior of animals (see, e.g., Berkowitz, 1983; Scott, 1948), the present chapter will focus exclusively on applications in the study of human behavior. Given the scope and targeted readership of this handbook and the origin of the theory, the focus will be on the social sciences, specifically psychology. Within the discipline of psychology, frustration–aggression theory has been used in a variety of domains, ranging from self-regulation (Harrison, Genders, Davies, Treasure, & Tchanturia, 2011) and imitation learning (Hanratty, O’Neal, & Sulzer, 1972) to developmental (Jegard & Walters, 1960; Nelson, Gelfand, & Hartmann, 1969), organizational (Fox & Spector, 1999; Spector, 1978), and media psychology (Breuer, Scharkow, & Quandt, 2015; Wingrove & Bond, 1998). There is, overall, ample empirical evidence for the link between frustration and aggression. However, the original theoretical explanation for this relationship has developed and become more refined over the decades, and competing theoretical considerations have emerged.

History and Development

Original Hypothesis by Dollard and Colleagues

The original formulation of the frustration–aggression hypothesis by Dollard, Doob, Miller, Mowrer, and Sears (1939) stated that “the occurrence of aggressive behavior always presupposes the existence of frustration and, contrariwise, that the existence of frustration always leads to some form of aggression” (p. 1). What is especially noteworthy in this definition is that, unlike the use of the word in everyday language, frustration here is not understood as an emotional experience but as “an interference with the occurrence of an instigated goal-response”

(Dollard et al., 1939, p. 7). Put differently, frustration is defined as an event instead of an affective state. The arguable benefit of characterizing frustration through observable qualities of events or environmental characteristics is that it allows description and testing of its causal effects, such as those on aggression, objectively instead of relying on subjective self-reported introspection. This basic yet somewhat counterintuitive ascertainment is important as it is also implied in later modifications and reformulations of the frustration–aggression hypothesis. A basketball player who yells at the referee after his team loses by a buzzer beater that was preceded by an uncalled foul, a person who loudly insults an instruction manual after 2 hours of failure in constructing a newly purchased IKEA wall closet, or a toddler who throws a tantrum when she notices that her favorite toy has been placed out of reach on the kitchen table are all everyday examples of the link between frustrating events and aggressive responses.

Looking at the original definition by Dollard and colleagues, one might criticize their claim to universal validity. Taken verbatim, “the occurrence of aggressive behavior always presupposes the existence of frustration” suggests that aggression does not occur without any form of prior frustration, and the assertion that frustration “always leads to some form of aggression” implies that aggression is a certain outcome of any frustration. These deterministic assumptions were somewhat qualified in a 1941 publication by the same authors in which they stated that “frustration produces instigation to aggression but this is not the only type of instigation that it may produce” (Miller, Sears, Mowrer, Doob, & Dollard, 1941, p. 339).

Qualifications and Boundary Conditions

According to the above statement by Miller et al. (1941), aggression is one of several possible consequences of frustration. Among the characteristics aside from aggression that frustration can affect are the development or increase of prejudice (Grossarth-Maticek, Eysenck, & Vetter, 1989) and depression (Seligman, 1975). In some of the early publications on the frustration–aggression hypothesis, it was argued that the threat of being punished for aggressive behavior itself (e.g., through social norms) can also be a frustration that can, again, increase the inclination to act or react aggressively in further interactions. In his “Note on the Frustration–Aggression Theories of Dollard and His Associates,” Morlan (1949) wrote that the argument that “the frustration of an aggressive impulse increases the strength of the aggression” is based on the presupposition that “expression of aggression serves as a catharsis” (p. 1). The competing view, according to Morlan (1949), is that “the expression of an aggressive impulse does not result in catharsis, but, on the contrary, sets up a vicious cycle that leads to further aggression” (p. 1). Anticipating the outcome of much of the later research on catharsis theory (which yielded little evidence for its basic assumptions), Morlan argued that the second view is more appropriate, as aggressive acts rarely occur or exist in isolation but have consequences for further or future (inter)actions.

Arbitrariness

While Miller et al. (1941) note that the first part of their original definition is “defensible and useful as a first approximation, or working hypothesis” (p. 338), the exact nature of the relationship between frustration and aggression and the boundary conditions for this causal nexus have been addressed and debated in detail in the course of empirical studies and later reformulations. Some of those boundary conditions were discussed by Pastore (1950), who remarked that “the occurrence of the aggressive response [to the frustration] depends on the subject’s understanding of the situation” (p. 279).

This indicated a shift in the theoretical focus. In addition to environmental contingencies, internal processes, such as the attribution of the frustration, were now considered relevant for the understanding of the frustration–aggression link. One of the factors that play a role in this is the degree to which frustrations are perceived as arbitrary, which is considered to be a predictor of the probability and intensity of potential aggressive reactions (Pastore, 1952). The assumption that attribution and the impression of arbitrariness matter in the context of frustration and aggression has found support in several studies (Cohen, 1955; Kulik & Brown, 1979; Rule, Dyck, & Nesdale, 1978; Worchel, 1974; Zillmann & Cantor, 1976). Similarly, Dill and Anderson (1995) looked at justification—which can be understood as the opposite of arbitrariness—and found that unjustified frustration produced more hostile aggression than justified frustration. Nevertheless, frustration can affect the inclination to act aggressively, even if it is not perceived as arbitrary (Berkowitz, 1988; Dill & Anderson, 1995).

Research by Burnstein and Worchel (1962), Kregarman and Worchel (1961), and Rothaus and Worchel (1960) suggests that the reasons for the differences between arbitrary and non-arbitrary frustrations are disparities in the strength of inhibitory responses rather than in individuals' inclinations to act aggressively themselves. Kregarman and Worchel (1961) further concluded from their study that the tendency to be aggressive is also reduced when the frustration is expected. These expectations are, of course, largely based on previous experiences (i.e. an individual's learning history) with similar situations (Davitz, 1952).

Targets of aggression

With regard to the intensity of the aggression, Dollard et al. (1939) put forth the suggestion that the strongest aggressive reactions are those directed toward the perceived sources of the frustration. Aggression toward the source of the frustration is one type of retaliatory behavior (Zillmann & Cantor, 1976). However, the aggressive response to a frustration can also be directed toward individuals not responsible for the interference with the attainment of a goal (Geen, 1968). This is one of the cases in which the type of aggression is commonly described as displaced.

Aggressive responses to frustration are not necessarily detrimental to the attainment of goals. Another variable that affects the intensity of an aggressive reaction following a frustration is its instrumental value—that is, the degree to which the aggression contributes to overcoming the frustration (Buss, 1963, 1966; Thompson & Kolstoe, 1974). The fact that aggression can be functional is something that also has implications for its association with frustration (da Gloria, 1984). In consideration of this, Ichheiser (1950) suggested in a response to the work by Dollard et al. that some acts of aggression in response to a frustration are better understood as defense.

An important person-level factor that appears to moderate the path from frustration to aggression is the gender of the aggressor. Several studies have found differences between women and men (see, e.g., Bettencourt & Miller, 1996; Buss, 1963; Caprara, 1982; Verona & Curtin, 2006) that are best explained by the empirically well-documented general finding that males are, on average, more likely to behave and act aggressively than females. Other work has found that the gender of the target of the aggression can also be an important factor. For example, Harris (1974) found that the strongest tendency to act aggressively was toward a same-sex interaction partner.

The studies by Cohen (1955) and Harris (1974) also identified the social status of the target as a potential moderator, and the work by Rule et al. (1978) showed that retaliation is more likely and more intense in anonymous interactions. The latter is also related to the finding by

Buss (1966) that aggression intensity is lower if its aversive consequences for the target are visible for the aggressor. Aggression-related personality traits, such as empathy and emotional susceptibility (Caprara, 1982), also play an important role, as the findings relating to gender differences show.

Differential responses to frustration

Naturally, the prerequisites for frustration to lead to aggression differ between types of aggression, such as overt or covert, physical or verbal aggression. At the same time, in some of the early works on frustration and aggression, it was noted that the consequences of frustration may also be “in the direction of growth rather than regression” (Davitz, 1952, p. 309). This idea of moderate frustrations as motivators also underlies the concept of flow (Csikszentmihalyi, 1990) and Vygotsky’s (1978) zone of proximal development. In accordance with all of these findings on the boundary conditions of the frustration–aggression hypothesis, Gustafson (1986) observed that the relevant question is “under what specific circumstances frustration and aggression may be related” (p. 103).

Attributes and Causes of Frustrations

Goal significance and expectations

In the behaviorist tradition that dominated an early period of research on the causes and effects of frustration, frustration was defined as a cause of extinction—that is, an event resulting in the termination of reinforcement that has previously maintained a behavior. Typically, this results in individuals exhibiting a sudden and temporary increase in the frequency of a behavior, a so-called extinction burst, particularly when the extinction procedure has just begun. However, it may also lead to occurrences of novel respondent behaviors (e.g., in a trial-and-error fashion). This process was later reformulated from a more cognitivist perspective by Amsel (1962, 1992), whose frustration theory predicts that frustration occurs when anticipated reward is reduced, delayed, or removed completely. In a similar fashion, Hanratty et al. (1972) described frustration as the “withdrawal of an anticipated reinforcer” (p. 31).

With regard to the properties of frustration, Brown and Farber (1951) identified two requirements for an event to qualify as frustrating in the sense of the definition by Dollard et al. (1939): (1) Achieving the goal must be important or relevant to the subject and (2) achieving the goal must be perceived as a likely outcome by the subject. The first of these requirements was also stressed by Lazarus (1991), who stated that a goal has to be personally significant if the blockage of its attainment is to evoke negative affect. Similarly, frustrations can be characterized as events that reduce the experience of self-efficacy (Bandura, 1977) or effectance (White, 1959). Notably, Haner and Brown (1955) found that “proximity to the goal at which frustration occurs will affect resultant aggression” (p. 206). Specifically, this means that, the closer a person is to achieving a goal, the more intense the effect of a frustration will be on the aggressive inclinations of that person (Harris, 1974). This premise is also known as the “goal gradient principle” (Thompson & Kolstoe, 1974).

Naturally, it also matters how much the frustration actually interferes with the attainment of the desired outcome (Berkowitz, 1989). The relationship between the desirability of a goal and frustration, however, is not necessarily unidirectional. Experiencing frustrations while attempting to reach a goal can further increase its attractiveness, which can, in turn, again intensify the reaction to a following frustration (Filer, 1952). While the criteria for events to qualify as frustrating are quite well defined (see previous section), the types or—more

specifically—the sources of frustrations are extremely diverse. In addition, the causal chain of events that eventually results in frustration occurring is inscrutable at times, further complicating the identification of the actual source.

Self-determination theory (Ryan & Deci, 2000a, 2000b) offers a more specific hypothesis for the link between frustration and aggression. Here, frustration can be thought of as the thwarting of basic psychological need satisfactions of relatedness, autonomy, or—as in the case of self-efficacy and effectance—competence. Contrary to Berkowitz’s (1989) reformulation of Dollard et al.’s frustration–aggression hypothesis (see below), the presence of aggression-facilitating cues is neither necessary nor sufficient for aggression to occur as a consequence of frustration in the self-determination theory framework (e.g., Przybylski, Deci, Rigby, & Ryan, 2014).

Interpersonal causes of frustration

One prominent root of frustration that gave rise to its extensive scrutiny in the field of social psychology is competition between multiple parties (Deutsch, 1949, 1993). Berkowitz (1989) emphasized that “competitive encounters are at least partly frustrating as the contestants block each other’s attempts to reach the disputed goal and threaten each other with a total loss” (p. 66). While this mainly applies to zero-sum games, in which the victory or gain of one party implies the loss of the other, it can also result from multiple parties with different goals competing over shared or limited resources.

However, it is not only the contestants who can cause frustrations. Similar to superior opponents, incompetent or selfish cooperators can also generate frustrations as their detrimental behavior may prevent individuals from attaining personal achievement, or groups from reaching a common goal in cases where successful cooperation is essential. As games or game-like scenarios provide an optimal testing ground for the causes and consequences of these social contingencies for frustration, many seminal studies on the frustration–aggression link have made use of them. Historically, many of these were field studies of naturally occurring intergroup conflicts, such as Sherif, Harvey, White, Hood, and Sherif’s (1961) classic Robbers Cave experiment, in which two parties of adolescents participated in a series of competitive activities for a group trophy and individual prizes. In these studies, the researchers were mostly interested in frustration as a cause of competitive group behavior, and they therefore implemented various types of punishments of opponents or teammates to serve as measures of aggression (see also Nelson et al., 1969; Worchel, Andreoli, & Folger, 1977). More recently, researchers have adopted virtual environments, such as video games, to study individual and intergroup frustrations, not only because they are increasingly common in everyday life, especially for adolescents and young adults, but also because they allow meticulous manipulation and control of the contingencies thought to elicit (or prevent) frustration.

Reformulation of the Hypothesis by Berkowitz

In a review of the work on and with the frustration–aggression hypothesis, Berkowitz (1978) concluded that it had seen a great number of criticisms, qualifications, and suggestions for modification. According to Berkowitz (1978), especially research on the boundary conditions of the hypothesis warrants that “as a consequence, we must now restrict the scope of the frustration–aggression hypothesis” (p. 691). This notion eventually led Berkowitz (1989) to the reformulation of the hypothesis that is most commonly cited and used in recent and current research on the causes and effects of frustration, particularly regarding its role in the etiology of

aggression. In an attempt to integrate Dollard et al.'s emphasis on environmental contingencies of frustration with a more recent understanding of frustration as an internal process, Berkowitz (1989) reformulated the theory, arguing that frustrations are still defined as aversive events but that they "generate aggressive inclinations only to the extent that they produce negative affect" (p. 71). It is important to understand that, within this reformulated theory, not the frustration but negative affect is the proximal cause of aggressive responses, and frustrations are just one of many potential sources of negative affect (Berkowitz, 1988). In methodological terms, Berkowitz's definition is a mediation hypothesis implying that frustrations cause negative affect, which, in turn, elicits aggressive inclinations. Some authors have argued that the process might also be that of a serial or multiple mediation that operates not only on the emotional level but also through the routes of cognition and physiological arousal (e.g., Anderson & Bushman, 2002).

Notably, Berkowitz's reformulation implies that there are additional sources of aggressive inclinations, such as insults, anxiety (Hokanson, 1961), unpleasant environmental conditions, and other aversive events and circumstances. This, again, emphasizes that frustration is a sufficient rather than a necessary criterion for aggression. Another noteworthy change in Berkowitz's reformulation is that it names "aggressive inclinations" instead of aggression or aggressive behavior as an outcome of frustration. These inclinations are not behaviors but comprise both an affective and a cognitive component. This subtle terminological change to Dollard et al.'s original hypothesis has arguably the most profound implications, as it predicts that negative affect generated by frustration does not automatically and necessarily lead to observable aggression. According to Berkowitz, there is a host of factors that might prevent this from happening. For example, individuals might reappraise the situation, there might be strong incentives not to behave aggressively or highly aversive consequences of doing so, or there might simply not be the opportunity to act aggressively because there is no direct interaction or contact with the source of the frustration. In sum, Berkowitz's (1989) reformulation of the theory of Dollard et al. (1939) presents an arguably more sophisticated view of the frustration–aggression link but incorporates nontrivial antecedents and consequences that are difficult to observe, making it increasingly challenging to falsify predictions derived from it. For example, if someone is frustrated by aversive events but does not behave aggressively, it might not be easy to determine whether this was due to the absence of negative affect or because they did not act upon their aggressive inclinations.

In addition to his reformulation of the frustration–aggression hypothesis, Berkowitz (1984, 1990) incorporated it into the cognitive neoassociation theory of aggression, which became immensely popular, especially in research on the effects of media. Consequently, the frustration–aggression hypothesis has also been included in other theoretical models that attempt to synthesize several theories. One of those is the general aggression model (Anderson & Bushman, 2002), which, by drawing from the assumptions of Berkowitz's cognitive neoassociation theory, also indirectly includes the frustration–aggression hypothesis. Another is the catalyst model of violent crime (Ferguson et al., 2008), a diathesis–stress model in which frustrations appear as situational stressors. As the reformulation of the hypothesis by Berkowitz (1989) shows, the causal path from frustration to aggression is a multistage process that depends on and is qualified by a large number of factors that can operate on various levels and in various temporal orders. Accordingly, the frustration–aggression link can be conceptualized as a multistep moderated mediation model, as depicted in Figure 40.1.

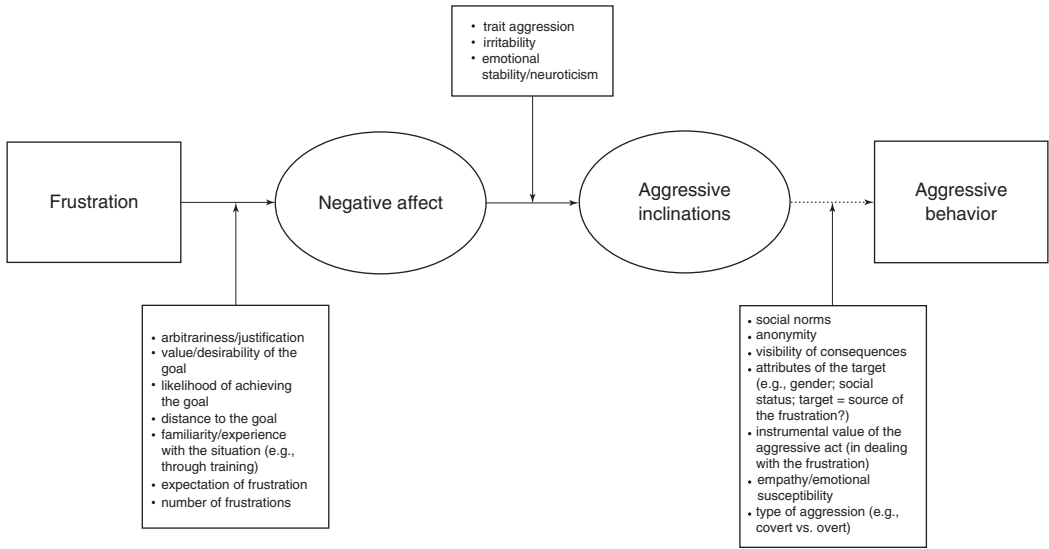


Figure 40.1 The frustration–aggression hypothesis according to Berkowitz (1989) as a multistage moderated mediation model with moderators for the various paths as suggested by the literature. Source: Reproduced with permission from Breuer & Elson (2016).

Meso- and Macrolevel Applications

Despite its roots in psychology, frustration–aggression theory has been used not only to study the behavior of individuals and small groups but also as a basis for macrolevel theories (Coleman, 1987) that explain aggression within societies (e.g., Berkowitz, 1968; Feierabend & Feierabend, 1966) or between them (e.g., de Gaay Fortman, 2005). In the book *Why Men Rebel*, Gurr (1970) argues that, both on an individual and a societal level, the repeated and prolonged experience of frustrations can lead to an outburst of aggression and violence. On the societal level, such frustrations can, for example, be characterized by severe economic recessions, a lack of or restricted access to resources, or systematic and/or institutional discrimination against certain groups. Feierabend and Feierabend (1966) have called this “systemic frustration” (p. 250). Such macrolevel applications of frustration–aggression theory to societies can also be understood through an evolutionary lens. Here, events or circumstances that interfere with hardwired biological goals such as survival or reproduction would be the most aversive and, hence, the ones with the most intense and far-reaching consequences.

Between individual behavior and societal processes, frustration–aggression theory has also been employed in explanatory models on a meso level. Most of this research has been carried out in the branch of organizational psychology that studies frustration and aggression at work (Fox & Spector, 1999) and it often refers to “organizational frustration” (Spector, 1978), which can be seen as the mesolevel equivalent of the systemic frustration that Feierabend and Feierabend (1966) have described.

Recent Applications

In a meta-analysis of experimental studies on displaced aggression of which many referred to or directly tested the frustration–aggression hypothesis, Marcus-Newhall, Pedersen, Carlson,

and Miller (2000) found the effects to be very robust. However, they also noted that, despite its popularity in social psychology textbooks, interest in the empirical study of displaced aggression and frustration–aggression theory seems to have substantially declined over the course of the second half of the 20th century, arguably in favor of research on specific aggression-eliciting cues.

While, according to the meta-analysis by Marcus-Newhall et al. (2000), there has been relatively little research on the frustration–aggression hypothesis since the 1990s in most areas, it has seen a recent surge in popularity in research on the effects of video games. As the impact of violent content in media in general, and video games in particular, is still debated, researchers have suggested that factors other than just the fictional content might explain any potential link between the use of these media and aggression. Video games typically confront their players with challenges that they expect to overcome, particularly with growing expertise. Accordingly, video games are not only an ideal environment for researchers to test various hypotheses about the causes and effects of frustration; they are also a potential source of frustration themselves. And, as the number of video game players is steadily growing in most countries, this is something that can potentially affect the experiences and behavior of many people.

Since the 1990s, several studies have either investigated frustration to explain the possible relationship between the use of video games and aggression (Przybylski et al., 2014; Schmierbach, 2010; Whitaker, Melzer, Steffgen, & Bushman, 2013; K. D. Williams, 2009; R. B. Williams & Clippinger, 2002) or set out to directly test the frustration–aggression hypothesis for video games (Breuer et al., 2015; Wingrove & Bond, 1998), with the latter finding support for its applicability. In line with previous research in other domains, both competitive (Breuer et al., 2015) and cooperative encounters (Wingrove & Bond, 1998) in video games can elicit frustration. Frustrations can, however, also occur without the presence of human copleayers or opponents. In the case of solo play, frustrations can arise from a mismatch between the skills of the player and the demands of the game. These findings do not imply that violent media content is irrelevant or has no effect on the user. As Berkowitz pointed out in 1989, aggressive cues, such as violent media content, might be a potential moderator for the relationship between frustration and aggression (although this is controversial; see Przybylski et al., 2014). Whitaker et al. (2013) proposed that frustrations might be motivators for people to engage in violent video games as such games allow them to act aggressively, even if this is only in a virtual environment.

Conclusion

The recent applications in research on the effects of video games on their users demonstrate that—despite a decline in the overall number of studies that refer to or directly test it—frustration–aggression theory is, indeed, still “alive and well” (Marcus-Newhall et al., 2000). Since it was first formulated in the late 1930s, frustration–aggression theory has continued to inform psychological and other social science research in many diverse areas. It has persisted through a period in psychology that was characterized by a fundamental clash of philosophies between Freudian psychoanalysis and Skinner’s radical behaviorism and between behaviorism and cognitivism in later decades. Today, regardless of whether psychologists view frustration through a strict behaviorist lens of environmental contingencies blocking reinforcement, use cognitivist models to explain the link between negative affect and aggressive inclinations, or adopt

perspectives from motivational psychology and consider the link between frustration and aggression to concern the thwarting of basic needs, frustration–aggression theory continues to be a valuable asset in the work of psychologists and other social scientists interested in the study of human aggression.

Over the decades, frustration–aggression theory has consistently been used in both basic and applied research despite several major shifts in aggression theories from a focus on biological drive to learned responses and environment–behavior contingencies. When the strict behaviorist view was challenged in what has come to be known as the cognitive revolution—which led to a (re)discovery of cognitive antecedents of aggression and accompanying mental processes, such as aggressive intent, susceptibility to aggressive thinking, inclinations toward violence, hostile perception and attribution, and expectations regarding the outcome of aggressive behavior—the frustration–aggression hypotheses, again, was not discarded as out of date, but adapted and assimilated into the new psychological framework. Its reformulation by Berkowitz introduced another era of research on frustration and aggression by combining the cognitivist perspective with psychological theories of affect and emotion, further refining the theory’s value and practical implications. And, most recently, motivational psychologists have proposed alternative explanations to describe the mechanisms behind the causal link between frustrating events and aggressive outcomes.

In spite of the constant changes to and refinements of its theoretical boundaries that characterize its development, the frustration–aggression hypothesis has been successfully applied to explain a wide range of behaviors in individuals, groups, and systems. And while, eventually, a future fundamental change in psychological science might well cause yet another shift in its applications, and maybe even the falsification of some of its earlier predictions, it is safe to say that the empirical discoveries within the frustration–aggression framework have greatly advanced the understanding of human aggression and will continue to do so.

References

- Amsel, A. (1962). Frustrative nonreward in partial reinforcement and discrimination learning: Some recent history and a theoretical extension. *Psychological Review*, *69*(4), 306–328. doi:10.1037/h0046200
- Amsel, A. (1992). *Frustration theory: An analysis of dispositional learning and memory*. Cambridge, UK: Cambridge University Press.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology*, *53*(1), 27–51. doi:10.1146/annurev.psych.53.100901.135231
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*(2), 191–215. doi:10.1037/0033-295X.84.2.191
- Berkowitz, L. (1968). The study of urban violence: Some implications of laboratory studies of frustration and aggression. *American Behavioral Scientist*, *11*(4), 14–17. doi:10.1177/000276426801100405
- Berkowitz, L. (1978). Whatever happened to the frustration-aggression hypothesis? *American Behavioral Scientist*, *21*(5), 691–708. doi:10.1177/000276427802100505
- Berkowitz, L. (1983). Aversively stimulated aggression: Some parallels and differences in research with animals and humans. *American Psychologist*, *38*, 1135–1144. doi:10.1037/0003-066X.38.11.1135
- Berkowitz, L. (1984). Some effects of thoughts on anti- and prosocial influences of media events: A cognitive-neoassociation analysis. *Psychological Bulletin*, *95*(3), 410–427. doi:10.1037/0033-2909.95.3.410
- Berkowitz, L. (1988). Frustrations, appraisals, and aversively stimulated aggression. *Aggressive Behavior*, *14*(1), 3–11. doi:10.1002/1098-2337(1988)14:1 < 3::AID-AB2480140103>3.0.CO;2-F

- Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin*, *106*(1), 59–73. doi:10.1037/0033-2909.106.1.59
- Berkowitz, L. (1990). On the formation and regulation of anger and aggression: A cognitive-neoassociationistic analysis. *American Psychologist*, *45*(4), 494–503. doi:10.1037/0003-066x.45.4.494
- Bettencourt, B. A., & Miller, N. (1996). Gender differences in aggression as a function of provocation: A meta-analysis. *Psychological Bulletin*, *119*(3), 422–447. doi:10.1037/0033-2909.119.3.422
- Breuer, J., & Elson, M. (2016). The frustration–aggression hypothesis according to Berkowitz (1989). *Figshare*. doi:10.6084/m9.figshare.4224270.v2
- Breuer, J., Scharnow, M., & Quandt, T. (2015). Sore losers? A reexamination of the frustration-aggression hypothesis for colocated video game play. *Psychology of Popular Media Culture*, *4*(2), 126–137. doi:10.1037/ppm0000020
- Brown, J. S., & Farber, I. E. (1951). Emotions conceptualized as intervening variables: With suggestions toward a theory of frustration. *Psychological Bulletin*, *48*(6), 465–495. doi:10.1037/h0058839
- Burnstein, E., & Worchel, P. (1962). Arbitrariness of frustration and its consequences for aggression in a social situation. *Journal of Personality*, *30*(4), 528–540. doi:10.1111/j.1467-6494.1962.tb01687.x
- Buss, A. H. (1963). Physical aggression in relation to different frustrations. *Journal of Abnormal and Social Psychology*, *67*(1), 1–7. doi:10.1037/h0040505
- Buss, A. H. (1966). Instrumentality of aggression, feedback, and frustration as determinants of physical aggression. *Journal of Personality and Social Psychology*, *3*(2), 153–162. doi:10.1037/h0022826
- Caprara, G. V. (1982). A comparison of the frustration-aggression and emotional susceptibility hypotheses. *Aggressive Behavior*, *8*(2), 234–236. doi:10.1002/1098-2337(1982)8:2<234::AID-AB2480080239>3.0.CO;2-5
- Cohen, A. R. (1955). Social norms, arbitrariness of frustration, and status of the agent of frustration in the frustration-aggression hypothesis. *Journal of Abnormal and Social Psychology*, *51*(2), 222–226. doi:10.1037/h0039947
- Coleman, J. S. (1987). Microfoundations and macrosocial behavior. In J. C. Alexander, B. Giesen, R. Münch, & N. J. Smelser (Eds.), *The micro–macro link* (pp. 153–173). Los Angeles, CA: University of California Press.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper Perennial.
- da Gloria, J. (1984). Frustration, aggression, and the sense of justice. In A. Mummendey (Ed.), *Social psychology of aggression: From individual behavior to social interaction* (pp. 127–141). Berlin, Germany: Springer.
- Davitz, J. R. (1952). The effects of previous training on postfrustration behavior. *Journal of Abnormal and Social Psychology*, *47*(2, Suppl.), 309–315. doi:10.1037/h0061972
- de Gaay Fortman, B. (2005). Violence among peoples in the light of human frustration and aggression. *European Journal of Pharmacology*, *526*(1–3), 2–8. doi:10.1016/j.ejphar.2005.09.035
- Deutsch, M. (1949). An experimental study of the effects of co-operation and competition upon group process. *Human Relations*, *2*(3), 199–231. doi:10.1177/001872674900200301
- Deutsch, M. (1993). Educating for a peaceful world. *American Psychologist*, *48*(5), 510–517. doi:10.1037/0003-066X.48.5.510
- Dill, J. C., & Anderson, C. A. (1995). Effects of frustration justification on hostile aggression. *Aggressive Behavior*, *21*(5), 359–369. doi:10.1002/1098-2337(1995)21:5<359::AID-AB2480210505>3.0.CO;2-6
- Dollard, J., Miller, N. E., Doob, L. W., Mowrer, O. H., & Sears, R. R. (1939). *Frustration and aggression*. New Haven, CT: Yale University Press.
- Feierabend, I. K., & Feierabend, R. L. (1966). Aggressive behaviors within politics, 1948–1962: A cross-national study. *Journal of Conflict Resolution*, *10*(3), 249–271. doi:10.1177/002200276601000301
- Ferguson, C. J., Rueda, S. M., Cruz, A. M., Ferguson, D. E., Fritz, S., & Smith, S. M. (2008). Violent video games and aggression: Causal relationship or byproduct of family violence and intrinsic violence motivation? *Criminal Justice and Behavior*, *35*(3), 311–332. doi:10.1177/0093854807311719

- Filer, R. J. (1952). Frustration, satisfaction, and other factors affecting the attractiveness of goal objects. *Journal of Abnormal and Social Psychology, 47*(2), 203–212. doi:10.1037/h0055925
- Fox, S., & Spector, P. E. (1999). A model of work frustration–aggression. *Journal of Organizational Behavior, 20*(6), 915–931. doi:10.1002/(SICI)1099-1379(199911)20:6 <915::AID-JOB918>3.3.CO;2-Y
- Geen, R. G. (1968). Effects of frustration, attack, and prior training in aggressiveness upon aggressive behavior. *Journal of Personality and Social Psychology, 9*(4), 316–321. doi:10.1037/h0026054
- Grossarth-Maticzek, R., Eysenck, H. J., & Vetter, H. (1989). The causes and cures of prejudice: An empirical study of the frustration-aggression hypothesis. *Personality and Individual Differences, 10*(5), 547–558. doi:10.1016/0191-8869(89)90037-8
- Gurr, T. (1970). *Why men rebel*. Princeton, NJ: Princeton University Press.
- Gustafson, R. (1986). Human physical aggression as a function of frustration: Role of aggressive cues. *Psychological Reports, 59*(1), 103–110. doi:10.2466/pr0.1986.59.1.103
- Haner, C. F., & Brown, P. A. (1955). Clarification of the instigation to action concept in the frustration-aggression hypothesis. *Journal of Abnormal and Social Psychology, 51*(2), 204–206. doi:10.1037/h0044818
- Hanratty, M. A., O’Neal, E., & Sulzer, J. L. (1972). Effect of frustration upon imitation of aggression. *Journal of Personality and Social Psychology, 21*(1), 30–34. doi:10.1037/h0031903
- Harris, M. B. (1974). Mediators between frustration experiment and aggression in a field. *Journal of Experimental Social Psychology, 10*, 561–571. doi:10.1016/0022-1031(74)90079-1
- Harrison, A., Genders, R., Davies, H., Treasure, J., & Tchanturia, K. (2011). Experimental measurement of the regulation of anger and aggression in women with anorexia nervosa. *Clinical Psychology & Psychotherapy, 18*(6), 445–452. doi:10.1002/cpp.726
- Hokanson, J. E. (1961). The effects of frustration and anxiety on overt aggression. *The Journal of Abnormal and Social Psychology, 62*(2), 346–351. doi:10.1037/h0047937
- Ichheiser, G. (1950). Frustration and aggression or frustration and defence: A counter-hypothesis. *Journal of General Psychology, 43*(1), 125–129. doi:10.1080/00221309.1950.9710609
- Jegard, S., & Walters, R. H. (1960). A study of some determinants of aggression in young children. *Child Development, 31*(4), 739–747. doi:10.2307/1126021
- Kregarman, J. J., & Worchel, P. (1961). Arbitrariness of frustration and aggression. *Journal of Abnormal and Social Psychology, 63*(1), 183–187. doi:10.1037/h0044667
- Kulik, J. A., & Brown, R. (1979). Frustration, attribution of blame, and aggression. *Journal of Experimental Social Psychology, 15*(2), 183–194. doi:10.1016/0022-1031(79)90029-5
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York, NY: Oxford University Press.
- Marcus-Newhall, A., Pedersen, W. C., Carlson, M., & Miller, N. (2000). Displaced aggression is alive and well: A meta-analytic review. *Journal of Personality and Social Psychology, 78*(4), 670–689. doi:10.1037/0022-3514.78.4.670
- Miller, N. E., Sears, R. R., Mowrer, O. H., Doob, L. W., & Dollard, J. (1941). I. The frustration-aggression hypothesis. *Psychological Review, 48*(4), 337–342. doi:10.1037/h0055861
- Morlan, G. K. (1949). A note on the frustration–aggression theories of Dollard and his associates. *Psychological Review, 56*(1), 1–8. doi:10.1037/h0056948
- Nelson, J. D., Gelfand, D. M., & Hartmann, D. P. (1969). Children’s aggression following competition and exposure to an aggressive model. *Child Development, 40*(4), 1085–1097. doi:10.2307/1127014
- Pastore, N. (1950). A neglected factor in the frustration-aggression hypothesis: A comment. *Journal of Psychology, 29*(2), 271–279. doi:10.1080/00223980.1950.9916032
- Pastore, N. (1952). The role of arbitrariness in the frustration-aggression hypothesis. *Journal of Abnormal and Social Psychology, 47*(3), 728–731. doi:10.1037/h0060884
- Przybylski, A. K., Deci, E. L., Rigby, C. S., & Ryan, R. M. (2014). Competence-impeding electronic games and players’ aggressive feelings, thoughts, and behaviors. *Journal of Personality and Social Psychology, 106*(3), 441–457. doi:10.1037/a0034820
- Rothaus, P., & Worchel, P. (1960). The inhibition of aggression under nonarbitrary frustration. *Journal of Personality, 28*(1), 108–117. doi:10.1111/j.1467-6494.1960.tb01605.x

- Rule, B. G., Dyck, R., & Nesdale, A. R. (1978). Arbitrariness of frustration: Inhibition or instigation effects on aggression. *European Journal of Social Psychology*, 8(2), 237–244. doi:10.1002/ejsp.2420080208
- Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, 25(1), 54–67. doi:10.1006/ceps.1999.1020
- Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68–78. doi:10.1037/0003-066X.55.1.68
- Schmierbach, M. (2010). “Killing Spree”: Exploring the connection between competitive game play and aggressive cognition. *Communication Research*, 37(2), 256–274. doi:10.1177/0093650209356394
- Scott, J. P. (1948). Dominance and the frustration-aggression hypothesis. *Physiological Zoology*, 21(1), 31–39.
- Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. San Francisco, CA: Freeman.
- Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. (1961). *Intergroup cooperation and competition: The Robbers Cave experiment*. Norman, OK: University Book Exchange.
- Spector, P. E. (1978). Organizational frustration: A model and review of the literature. *Personnel Psychology*, 31(4), 815–829. doi:10.1111/j.1744-6570.1978.tb02125.x
- Thompson, R. J., & Kolstoe, R. H. (1974). Physical aggression as a function of strength of frustration and instrumentality of aggression. *Journal of Research in Personality*, 7(4), 314–323. doi:10.1016/0092-6566(74)90053-1
- Verona, E., & Curtin, J. J. (2006). Gender differences in the negative affective priming of aggressive behavior. *Emotion*, 6(1), 115–124. doi:10.1037/1528-3542.6.1.115
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Whitaker, J. L., Melzer, A., Steffgen, G., & Bushman, B. J. (2013). The allure of the forbidden: Breaking taboos, frustration, and attraction to violent video games. *Psychological science*, 24(4), 507–513. doi:10.1177/0956797612457397
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66(5), 297–333. doi:10.1037/h0040934
- Williams, K. D. (2009). The effects of frustration, violence, and trait hostility after playing a video game. *Mass Communication & Society*, 12(3), 291–310. doi:10.1080/15205430802461087
- Williams, R. B., & Clippinger, C. A. (2002). Aggression, competition and computer games: Computer and human opponents. *Computers in Human Behavior*, 18(5), 495–506. doi:10.1016/S0747-5632(02)00009-2
- Wingrove, J., & Bond, A. J. (1998). Angry reactions to failure on a cooperative computer game: The effect of trait hostility, behavioural inhibition, and behavioural activation. *Aggressive Behavior*, 24(1), 27–36. doi:10.1002/(SICI)1098-2337(1998)24:1<27::AID-AB3>3.0.CO;2-P
- Worchel, S. (1974). The effect of three types of arbitrary thwarting on the instigation to aggression. *Journal of Personality*, 42(2), 300–318. doi:10.1111/j.1467-6494.1974.tb00676.x
- Worchel, S., Andreoli, V. A., & Folger, R. (1977). Intergroup cooperation and intergroup attraction: The effect of previous interaction and outcome of combined effort. *Journal of Experimental Social Psychology*, 13(2), 131–140. doi:10.1016/S0022-1031(77)80006-1
- Zillmann, D., & Cantor, J. R. (1976). Effect of timing of information about mitigating circumstances on emotional responses to provocation and retaliatory behavior. *Journal of Experimental Social Psychology*, 12(1), 38–55. doi:10.1016/0022-1031(76)90085-8