

# The Impact of Aggressive Priming, Rumination, and Frustration on Prison Sentencing

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We tested the hypothesis that ruminating about a previous aggressive prime interacts with a subsequent minor frustration to augment aggression. Sixty participants watched a video showing a murder during a bank robbery (the aggressive prime). Those in the rumination condition were asked to write about the video for 20 min. In the no rumination condition, participants were given 20 min to complete an irrelevant task. Participants were then either frustrated or not frustrated. Our results supported the main hypothesis. Relative to the control condition, neither rumination nor frustration alone impacted aggression. Rumination, in combination with a minor frustration, however, increased the recommended prison sentence towards the targets. We discuss the implications of our findings. *Aggr. Behav.* 33:477–485, 2007. © 2007 Wiley-Liss, Inc.

**Keywords:** rumination; frustration; aggressive prime; prison sentencing; triggered aggression

## INTRODUCTION

Imagine a juror who, for several hours, has sat through a sentencing hearing. During this time the prosecution has introduced video evidence showing the defendant engaging in a murder. The hearing proceeds until the jury is asked to deliberate about the sentence. The jury then breaks for lunch, during which time the individual juror attempts to make a purchase at a nearby vending machine, only to have his/her dollar taken without producing a desired snack. Upon returning to the deliberation room, might this individual juror, already motivated to punish the accused and now frustrated by having lost money and a coveted snack, argue in favor of a more severe punishment (e.g., the death penalty) than would be the case had this rather trivial frustrating experience with the vending machine not occurred?

Although admittedly an extreme example, this scenario underscores the importance of examining such potential effects. Every day, jurors and judges make sentencing decisions to punish individuals found guilty of crimes. To adhere to standards of social and democratic ideals, they are expected to sentence law breakers to what is regarded as fair punishment, within the boundaries imposed by the law. However, theoretical models of aggression

[Anderson, 1997; Berkowitz, 1993] suggest that various situational factors, such as aggressive priming, rumination, and frustration, all of which can be associated with courtroom events, will interact with case-based evidence of guilt to augment the level of punishment imposed on an individual. As a result, the length of a prison sentence may be subject to the influence of factors unrelated to the criminal case. Thus, the purpose of this study was to examine the effects of such situational factors on the severity of sentence given to a person who committed a crime.

## MODELS OF AGGRESSION NETWORKS

Different research paradigms on aggression, such as the triggered displaced aggression paradigm

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Received 19 July 2005; Accepted 28 October 2006

Published online 26 June 2007 in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/ab.20203

[TDA; Miller et al., 2003; Pedersen et al., 2000] and Excitation Transfer [Zillmann, 1988], have previously shown that a prior provocation can interact with a subsequent annoying or arousing event to augment an aggressive response. Researchers' explanations of the processes that produce such increases in retaliatory behavior are consistent with the cognitive neo-associationistic model of aggression [CNA; Berkowitz, 1993] and the more recent general affective aggression model [GAAM; Anderson, 1997]. Basically, these models state that aversive events induce negative affect (CNA) or anger (GAAM), which motivates an aggressive response in individuals. Negative affect activates associations among other aggression-related factors, such as aggressive cognitions and arousal, which, in combination with the negative affect, form an aggression network within an individual [Berkowitz, 1990, 1999]. Thus, activation in one component of the aggression-related network (e.g., a negative affect induction) is likely to increase activity in other components (e.g., aggressive cognitions, arousal) within the network. With such increased network activation (i.e., aggressive priming), the likelihood of a negative reaction and an aggressive response to subsequent aversive and/or arousing events also increases.

### THIS STUDY: PRIMING, RUMINATION AND FRUSTRATIONS IN A COURTROOM

Many distinct types of stimuli may serve as aggressive primes, including weapons [Berkowitz and LePage, 1967; Berkowitz, 1994; Carlson et al., 1989], hostile comments [Loew, 1967], and violent media [Bushman and Anderson, 2001]. Berkowitz and LePage [1967] suggested that the presence of aggressive stimuli in the external environment increases the probability of aggressive responses. An example of this phenomenon is the weapons effect, whereby the mere presence of a weapon generates a stronger aggressive response compared to a neutral object [Carlson et al., 1989].

For the purpose of this study, we employed violent media as the aggressive prime. Observed violence has already been shown to function reliably as an aggressive prime [Bandura, 1962; Berkowitz and Geen, 1966; Bushman and Anderson, 2001; Leyens and Ross, 1975; Leyens et al., 1975]. It can be induced via a film [Bandura, 1962; Cantor et al., 1978]. Real, versus fictional violence, seems to have a stronger impact on immediate retaliation by provoked subjects [Hendrick and Shaffer, 1975]. Thus, the need for an initial aggressive priming event

to be as real as possible has been noted as a factor that further increases the likelihood of a subsequent aggressive response. Although this assertion is undercut by the fact that even violent video games produce aggressive affects and behavior [Anderson and Dill, 2000], we employed a realistic aggressive prime by means of a video clip about a bank robbery (from the movie, *Set It Off*) to form a basis for subsequent rumination and augmented aggressive responding to a trigger.

### RUMINATION

The second relevant factor in our scenario, deliberation, conceptually involves rumination, which has been defined in some research as self-focused attention toward one's thoughts and feelings [Lyubomirsky and Nolen-Hoeksema, 1995]. It can also be defined as provocation-focused thought [see Bushman et al., 2005]. Herein, we conceptualize rumination in terms of the second definition. Research shows that ruminative thought that follows a provocation can maintain angry feelings [Martin and Tesser, 1989; Rusting and Nolen-Hoeksema, 1998]. In terms of an aggression-related network, rumination about aggression-related stimuli (e.g., a provocation, a violent film) is likely to sustain activation of the network and the accompanying associations among its components. Consequently, ruminative thought can augment aggressive behavior long after the occurrence of a provocation [Bushman et al., 2005]. The likely overall result is that individuals who ruminate or elaborate about aversive events *remain primed* for aggression.

Thus, rumination, which may occur either as a consequence of a relatively stable personality trait and/or in response to a situational factor, such as the absence of any distracting activity after a humiliating or angering provocation, can enable aggressive priming to influence a wide range of situations in the real world, ranging from road rage, to family arguments, to courtrooms. It does so by allowing aggressive priming to interact with subsequent annoyances even when the time interval between the former and the latter is relatively long. Such annoyances are likely to include many of the frustrations commonly found in the context of the functioning of the judicial system.

In our opening scenario, rumination is induced by requiring deliberation about the bank robbery shown in the video evidence. Theoretically, such continuous reflection on the aggressive contents of the murder in the video should maintain not only

the negative affect induced by the video, but also, the associations with other components of the aggression network. Thus, induced rumination should maintain the priming function of the film for a longer period of time than would be the case in the absence of rumination. It should be noted that past studies on aggressive priming have examined its immediate effect on retaliatory actions or displaced aggression [Bandura, 1962; Baron, 1971; Leyens and Hermann, 1979]. No prior work has examined the effect of whatever may cognitively transpire between the initial aggressive prime and the subsequent response to that prime. This time period could prove very relevant in that it could become either a cooling-down period for some individuals or a period wherein aggression is subsequently facilitated by enabling individuals to dwell on the aversive/aggressive events and thereby maintain the effects of the aggressive prime. In our study, as we describe in more detail in a section below, we induce rumination about the aggressive prime by asking the participants to write about the bank robbery.

In our anecdotal example, the introduction of a frustration after the juror's deliberation about the case constitutes the third factor in our experimental paradigm—a triggering event. Although researchers initially suggested that any frustrating event will invariably result in a higher likelihood of an aggressive behavior [Dollard et al., 1939], contemporary theories of aggression are less sanguine about the inevitability of such a relationship. Nevertheless, Berkowitz's CNA model [Berkowitz, 1969, 1990, 1999] also suggests that a person who is expecting the attainment of a goal and is subsequently blocked from obtaining it will thereby become frustrated and experience negative affect. According to this model, many aversive events, such as provocations and frustrations, are interchangeable in that any of them will activate elements of the postulated aggression network and predispose or ready a person to behave aggressively.

Thus far, studies involving situationally induced rumination in the context of aggression have uniformly motivated aggression against a target by presenting a direct insult or annoyance from that target of aggression [Bushman, 2002; Bushman et al., 2005]. Similarly, studies examining the interaction of prior aggressive priming and rumination in the TDA paradigm have all used interpersonal minor provocations as triggers [e.g., Bushman et al., 2005]. Here, however, by inducing a non-interpersonal frustration, we expanded on Berkowitz's stipulation that *any* type of aversive event will trigger this aggression network. Additionally, by

contrast with the TDA paradigm, wherein an initial provocation combines with a subsequent minor triggering event to disjunctively augment aggression toward the person who provides that triggering provocation, we examine instead the aggression-augmenting effect of a minor frustration on the magnitude of retaliation toward the person whose actions constituted the initial aggression-priming experience. Conceptually, a frustration such as the one depicted in the opening scenario serves a function similar to that of a minor triggering provocation because this blocking of the achievement of a desired goal is a negative event which occurs after the individual has been aggressively primed. Such occurrences are of research interest because, in terms of everyday life, minor frustrations occur consistently, in and out of the courtroom: e.g., an inaudible attorney; external noises that interrupt the arguments and testimony; the lack of cellular phone reception; a dead car battery. If these minor frustrations function to antagonize further those who: (a) have previously been aggressively primed and (b) have been ruminating about the priming incident, a defendant who is the target of the aggression would likely suffer much more than if this combination of events had not taken place.

In summary, no previous research has examined the effects of a non-personal frustration that follows an aggressive prime to examine their interaction with the presence or absence of rumination. The effects of events that occur during the time period between aggressive priming and aggressive reaction should prove to be important. The activity during this period has the potential to promote a decrease or an increase in aggressive mood, depending on whether an individual ruminates about the prime or engages in distracting thought [Bushman et al., 2005].

One further important issue is the construct validity of measures of aggression in laboratory experiments. We thus far have discussed the severity of a recommended prison sentence and aggression as if they are interchangeable. Indeed, we take the position that these terms reflect the same underlying construct in the context of this study. In part, this is because we define aggression as engagement in behavior that reflects an intent to harm another individual. It is reasonable to assume that participants intend to harm the accused when they recommend a longer prison sentence. In addition, previous research supports the view that written measures of aggression assess the same underlying construct as physical measures [Carlson et al., 1989; Giancola and Chermack, 1998]. We, therefore,

employ the severity of a recommended prison sentence as our primary measure of aggression in response to aggressive priming, rumination, and a minor task frustration.

## HYPOTHESES

First, we hypothesized that participants who ruminated about the initial aggressive prime and were subsequently frustrated would recommend a harsher sentence for the suspect in the bank robbery than those who were distracted and then frustrated (following the aggressive prime induction). We predicted this effect because a distraction following the aggressive prime will interfere with sustaining activation of the aggressive network, and thus, reduce the effect of the aggressive prime. In other words, the time 1 event (the initial aggressive priming event) should interact with the time 2 event (the frustration induction) more strongly when rumination is induced between the two events. In addition, we expected frustrated participants to recommend a harsher sentence than those who were not frustrated, regardless of whether or not they ruminated. We also expected the no-rumination, no-frustration condition to produce the lowest sentencing recommendation.

## METHOD

### Participants and Design

Sixty undergraduate students at the California State University, Long Beach (44 females, 16 males) volunteered for participation in the study in exchange for course credit. Each participant was randomly assigned to one of four conditions. The study was a 2 (rumination: Yes/No)  $\times$  2 (triggering frustration: Yes/No) design, with a Time 1 aggressive priming event, the movie of a bank robbery murder, serving as a constant across conditions.

### Procedure

Each participant entered the room and received consent forms and an Initial Information Form asking for demographic information. A pre-briefing was given about the video that they were going to be viewing and the procedures that they would be asked to perform. The participants were told that the purpose of the experiment was to examine whether or not violent crime footage in the form of a video affects the severity of individual juror decisions and creates a bias against the criminal.

These instructions were likely to focus the participants' attention on the video, but, as a constant in the study, they cannot explain the resulting interaction between the independent variables. In addition, we told participants that we wanted to assess whether or not writing about the crime and its emotional impact would increase the accuracy of the memory of the crime and, in effect, help the juror decide on the most suitable punishment. This statement justified the rumination manipulation. Furthermore, they were told that they would watch a video of a real violent crime using a television and a VCR that we provided.

After the participant was seated, the experimenter told the participant to place the video (which was on top of the VCR) into the VCR and push play, immediately after which the experimenter left the room. The participant watched a 60-sec video clip from the movie *Set It Off*, which presented a bank robbery murder. This clip constituted the aggressive priming induction.

Next, we manipulated rumination. Participants in the rumination condition were instructed to write as many details about the robbery as they could recall in a 20-min period. In addition, they were asked to write about their likely feelings had they been a victim in a similar situation. Participants in the distraction condition were given a 20-min distraction task consisting of a Personality Questionnaire and a Political Stance Questionnaire to occupy them and preclude or limit rumination about the prime. The Personality Questionnaire consisted of 50 statements regarding personal preferences, personality traits, and habits (e.g., I prefer, spicy, sour and crunchy foods; I like the color blue; I sometimes read books for fun), which participants rated as being true of themselves using a linear scale that ranged from 1 (clearly not true of me) to 7 (very true of me). The Political Stance Questionnaire consisted of 100 statements (e.g., Those running for the Supreme Court are capable; Taxes are too high; The natural environment should be left alone; The economy is getting worse as the years go by) on various political issues. Participants rated the degree to which they agreed with these statements using a linear scale that ranged from 1 (strongly disagree) to 10 (strongly agree).

The experimenter left the room with the wheeled cart that held the television and the VCR used for the video clip with the excuse that she needed to rewind and prepare the video again without disturbing the participant. Thus, all participants were left alone in the experimental room during the rumination manipulation.

Following the rumination manipulation, we manipulated frustration. The experimenter reentered the room after the 20 min allotted for the rumination/distraction manipulation had passed and told the participant that it was necessary to watch the video once more to be sure that no key elements of the bank robbery were missed during the first viewing. In the frustration condition, the experimenter returned with the television and a broken VCR that was identical to the first working VCR. The experimenter left the video on top of the VCR and told the participant to put the video in the VCR and hit play to watch the video. The experimenter left the room before the participant had time to tell her about the malfunctioning VCR. The participant was given about 1 min to attempt to fix the broken VCR, during which time they were expected to be frustrated. After about 60 sec, the experimenter reentered the room. When the participant informed her that the VCR was not working, the experimenter said that the experiment was running late and they would just move on to the final part of the experiment. Participants in the no frustration condition were not asked to watch the video a second time; the experimenter merely continued to the final part of the experiment.

In the final stage of the experiment, the participant was asked to complete a Decision Form on which participants recommended the length of the prison sentence (the main dependent variable) for the suspect in the robbery video. It asked participants to indicate the length of sentence they would recommend, ranging from 0 to 80 years, for the leader of the bank robbers as well as for the other two bank robbers depicted in the movie clip. Although it is not jury practice to freely choose the length of sentence (at most, they may recommend to a judge the Death Penalty or Life Without Possibility of Parole in a capital punishment case, but usually have no say in sentencing for any other type of case), this option provided greater sensitivity than would the standard guilty/not guilty verdict. In addition, the participant then completed manipulation checks that assessed the negative affect they experienced from the aggressive priming. These manipulation checks were based on a modification of the positive affect negative affect scale (PANAS) developed by Watson et al. [1998] and used a five-point scale that ranged from 1 (very slightly or not at all) to 5 (extremely). We created a composite of 11 negative items (e.g., irritable, hostile, upset, scared, nervous, tense) used to assess negative reactions to the aggressive prime ( $\alpha = .92$ ). The original scale has been validated by several subsequent studies [Crook et al., 1998; Sandin et al., 1999].

### Frustration Manipulation Check

The effectiveness of using a malfunctioning VCR to manipulate frustration was assessed in a separate study in which 18 undergraduate students at the University of Southern California (11 females, seven males; mean age = 20.0 yr) volunteered in exchange for course credit. Each was randomly assigned to either a no-frustration or a frustration condition and told that the purpose of the study was to examine people's ability to keep certain types of visual images in memory, depending on the way they are presented. Although the visual images ostensibly were to be presented via either a VCR and TV or a set of pictures, all participants were in the VCR/TV condition. Each was subsequently told that he/she needed to prepare the VCR/TV system for subsequent viewing by putting a videotape into the VCR, hitting play after the experimenter left the room, and pausing the VCR as soon as an image appeared (the video simply showed a person sitting on a chair). In the frustration condition, the VCR was broken and would not work to produce an image. The participant was given about 1 min to attempt to fix the broken VCR. When informed on re-entry that the VCR was not working, the experimenter said that the experiment was running late and they would just move on to the final part. In the no-frustration condition, the working VCR allowed participants to pause the video and leave it ready for viewing prior to the experimenter's re-entry. In both conditions, participants then completed the frustration manipulation check, which used scale ranging from 1 (not at all) to 7 (extremely so) to assess the degree to which they were frustrated and annoyed ( $\alpha = .79$ ) by trying to activate the audio/visual system, and were debriefed. An independent samples *t*-test on the two-item composite showed that, as expected, participants in the frustration condition ( $M = 3.38$ ,  $SD = 1.48$ ) were more frustrated and annoyed by dealing with the audio/visual system than those in the no-frustration condition ( $M = 1.50$ ,  $SD = .75$ ),  $t(15) = 3.35$ ,  $P < .01$ ,  $d = 1.63$ . These results are consistent with the view that our manipulation of frustration in the main study was a successful.

## RESULTS

### Rumination

As expected, participants who ruminated about the bank robbery (i.e., the aggressive prime) recalled reacting more negatively to it ( $M = 1.83$ ,  $SD = .89$ ) than those who did not ruminate ( $M = 1.45$ ,  $SD = .51$ ),  $t(54) = 2.04$ ,  $P = .05$ ,  $d = .55$ .

## Frustration

As indicated in the methods section, the effectiveness of the frustration manipulation was assessed in a separate study.

**Aggression.** We conducted a  $2 \times 2$  ANOVA on the recommended prison term for leader of the bank robbers.<sup>1</sup> The analysis revealed a main effect for frustration,  $F(1, 56) = 12.35$ ,  $P < .01$ , but a non-significant effect for rumination,  $F(1, 56) = 1.26$ ,  $P > .10$ . Most important, however, was that the main effect of frustration was qualified by a frustration by rumination interaction,  $F(1, 56) = 4.42$ ,  $P < .05$ . Analyses of simple effects indicated that participants in the no rumination/frustration condition ( $M = 13.37$ ,  $SD = 6.34$ ) did not reliably recommend higher prison terms than participants in the no rumination/no frustration condition ( $M = 10.72$ ,  $SD = 6.93$ ),  $t(33) = 1.18$ ,  $P > .10$ ,  $d = .40$ . Rumination in conjunction with a frustration ( $M = 19.42$ ,  $SD = 10.18$ ), however, did serve to augment suggested prison terms relative to the no rumination/no frustration conditions ( $M = 8.88$ ,  $SD = 4.80$ ),  $t(26) = 2.69$ ,  $P < .05$ ,  $d = 1.03$  and  $t(23) = 3.35$ ,  $P < .01$ ,  $d = 1.34$ , respectively (see Fig. 1). In addition, as expected, the combination of rumination and frustration produced longer recommended prison terms than frustration in the absence of rumination,  $t(29) = 2.05$ ,  $P = .05$ ,  $d = .76$ . Furthermore, participants in the no rumination/frustration condition recommended longer prison terms than those in the rumination/no frustration condition,  $t(30) = 2.16$ ,  $P < .05$ ,  $d = .78$ .

We proceeded to apply the contrast weights 3, -1, -1, -1 to compare the rumination/frustration condition to the other three conditions to further test the specific interaction we predicted. As expected, prison sentence for the leader was higher in the former than in the other three conditions,  $t(56) = 3.64$ ,  $P < .01$ .

Figure 2 presents the mean recommended prison sentences for the other two bank robbers. Although a  $2 \times 2$  ANOVA only revealed a main effect of frustration  $F(1, 56) = 11.36$ ,  $P < .01$ , we applied an a priori test, using the contrasts weights, 3, -1, -1, -1 to compare the rumination/frustration condition

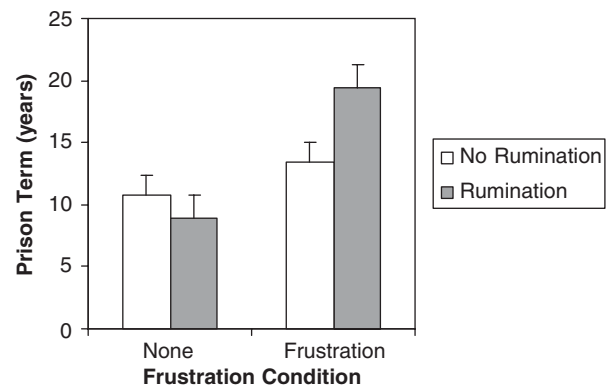


Fig. 1. Mean recommended prison sentence for leader as a function of rumination and frustration.

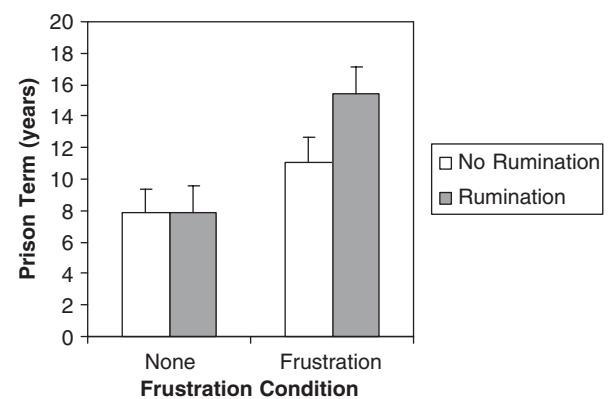


Fig. 2. Mean recommended prison sentence for other two robbers as a function of rumination and frustration.

with the other three conditions and thereby test the specific interaction predicted by theory and confirmed in the data for the leader of the robbery. As expected, our results showed that recommended prison sentence for the other robbers was higher in the rumination/frustration condition relative to the other three cells,  $t(56) = 3.29$ ,  $P < .01$ .

## DISCUSSION

As predicted, the combination of ruminating about an aggressive prime (the bank robbery murder) and the subsequent induction of a minor frustration (the broken VCR) augmented the prison sentence recommended for the persons who committed the murder. Our results match elements of previous findings showing that ruminating about a provocation can maintain the resulting negative affect, arousal, and cognitions for longer periods of time relative to not ruminating [Bushman et al., 2005]. This study, however, adds to previous studies

<sup>1</sup>Although we present separate analyses for the recommended sentences for the leader and for his two accomplices, we also created a composite of the recommended sentences for the leader and the other two robbers ( $\alpha = .94$ ) and conducted a  $2 \times 2$  ANOVA on it. Our results revealed a main effect of frustration,  $F(1, 56) = 12.71$ ,  $P = .00$ , which was qualified by a marginal frustration  $\times$  rumination interaction that depicted the same pattern of means shown in Figure 1 for the leader of the bank robbers,  $F(1, 56) = 3.30$ ,  $P = .08$ .

that first induced activation of the aggression-related network in individuals by means of an insulting provocation by supporting the notion that rumination also can be used to maintain activation induced by a prime. As shown by our results, ruminating about an aggressive prime interacted with a minor frustration to augment the recommended punishment for the criminals whose actions initially primed aggressive thought. In the absence of rumination, although the addition of a minor frustration directionally augmented the recommended severity of punishment, this simple effect was not reliable. These findings are consistent with the theoretical notion that ruminating about an aggression-related events and cognitions maintains activation of an aggression-related network in the mind, and that this activation can interact with a subsequent minor negative event to produce higher levels of aggression [Bushman et al., 2005].

Additionally, our results support the theoretically postulated interchangeability of frustration and provocation, as suggested by both Berkowitz's CNA Model and Dollard's Frustration-Aggression Theory. We have shown that, similar to the effect of a minor interpersonal triggering provocation in the TDA paradigm, a minor frustration can trigger an increase in aggression in individuals who are primed for aggression. Finally, as shown herein, the synergistic effect of the combination of an initial aggressive prime, rumination, and a subsequent triggering event is not constrained to aggressive retaliation against the source of that triggering event. Here, the interactive effect of these separate ingredients was seen in the augmented aggressive reaction toward the aggression-priming bank robbers (the time 1 event) who had no relation to or prior interaction with the participant. Thus, an important implication of this finding is that the disjunctive escalation of aggression found in the TDA paradigm [Bushman et al., 2005; Pedersen et al., 2000; Vasquez et al., 2005] may not be limited to interpersonal provocations from a provocateur and the subsequent triggering target, but can occur in a wider range of contexts and target persons.

### Excitation Transfer and Displaced Aggression

Some may think that excitation transfer theory serves as the underlying basis for the trigger-facilitated aggression seen in our results. Excitation transfer theory is based on the fundamental notion that physiological arousal persists for a short period (approximately 10–20 min) after the termination of a provoking event [Zillmann, 1988]. When a second

annoying event occurs shortly after a first provocation, residual anger from the first provocation or frustration is likely to manifest itself at that later time. As related to this study, the priming event would serve as the source of the Time 1 arousal in the excitation transfer explanation; the Time 2 triggering frustration was implemented by means of the dysfunctional VCR; finally, the target for the excitation transfer was the "criminal" for whom they were determining a sentence.

The application of excitation transfer theory to this study seems moot. The excitation transfer model suggests that the transfer of arousal from Time 1 to Time 2 is most likely to occur when the person is unaware of the arousal they are experiencing [Zillmann, 1988]. Our research herein, however, purposefully made the participant aware of the source of their feelings by explicitly inducing them to ruminate (via writing). This should preclude the misattribution of arousal from the video to the frustration. The excitation transfer model also stresses the importance of the interval between the Time 1 and Time 2 events being short enough to keep the original arousal from dissipating. If this time interval is too long, the physiological arousal is likely to dissipate before it can be transferred and attributed to the subsequent event. Although, admittedly, we found no studies that specifically assess the maximum time lapse that can occur between the arousing events and still produce excitation transfer, research suggests that episodes of anger affect typically last about 10 min [see Fridhandler and Averill, 1982; Tyson, 1998]. Because the time between the two events in our study was about 20–25 min in length and because participants were consciously ruminating about the first event, it seems unlikely that excitation transfer theory applies to this study.

### LIMITATIONS

We have identified some limitations in our study. First, participants in the frustration condition in the main study spent more time in the experimental session (because they had to deal with the malfunctioning VCR) than those in the no frustration condition. Although unlikely, it is possible that this time differential had an impact on the negative affect experienced by those in the frustration condition. Second, although a separate study showed that having to deal with a malfunctioning VCR induced more frustration than dealing with one that functioned properly, certain additional differences in the procedures of the two studies may

have impacted the level of frustration experienced by the participants. For instance, the study used to test our frustration manipulation was shorter and more focused on being able to watch the video only once. In the main study, all participants were able to watch the video clip at least once, and thus, could at least recall parts of the scene. Therefore, it is possible that being precluded from watching the video clip was more frustrating in the smaller study, which would have meant not being able to watch the clip at all, than in the main study. Furthermore, we do not have appropriate manipulation check data in the main study assessing the degree to which participating in the full design impacted negative affect in participants. This fact limits our ability to examine the relationship between frustration and aggression in our study.

## CONCLUSION

What is the fundamental message from our findings? There are two components to our take-home message. The first is that there are various ways to prime individuals with aggression, and that such priming, when prolonged via external factors that induce rumination, can interact with even a minor frustration to increase punishment or retaliation. The second concerns the apparent ecological validity of this phenomenon. The interaction of aggressive priming and subsequent negative events is likely found in a wide range of social contexts, including courtrooms. Although we have not manifestly established the generalization of our findings to real juries, we have demonstrated that the potential for such effects in the real-world does exist.

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