2012

Re-appraising the situation and its impact on aggressive behavior: Theoretical and applied implications

Christopher Paul Barlett
Iowa State University

Re-appraising the situation and its impact on aggressive behavior: Theoretical and applied implications

Christopher P. Barlett

A dissertation submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Psychology

Program of Study Committee:
Craig A. Anderson, Major Professor
Douglas A. Gentile
Zlatan Krizan
Nathanial Wade
Robert West

Iowa State University
Ames, Iowa
2011

DEDICATION

This dissertation is dedicated to my beautiful wife, Natalie. I could not have asked for a better best friend and wife. Thank you for everything.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Extant research has tested the processes explicating how individuals use re-appraisal (an emotion regulation strategy) to down-regulate negative emotions, including anger. However, no research has tested how re-appraisal is related to aggressive behavior despite several theoretical claims regarding its relations. Three studies tested the general hypothesis that re-appraisal will be negatively related to aggressive behavior while also testing what variables moderate and mediate these relations. Using a cross-sectional design, Study 1 found that re-appraisal was negatively related to aggressive behavior and that re-appraisal significantly mediated the relations between known aggression-related variables (e.g., vengeance, anger) and several indices of aggressive behavior. Study 2 used an experimental design to further test the findings in Study 1. Employing a mixed factorial design, some participants were provoked, praised, or given no feedback from a same-sex "partner" on an essay writing task. Some participants were then given mitigating information – information that should cue re-appraisal processes – regarding the feedback prior to completing an aggressive and prosocial behavioral measure. Results showed that provoked participants who did not receive the information were significantly more aggressive than those provoked participants who received the information. Revenge motives significantly mediated these relations and trait levels of re-appraisal moderated these mediated effects. Study 3 was an intervention designed to reduce vengeance by teaching participants how to re-appraise. Results showed that participants who were low at baseline levels of re-appraisal and were in the intervention condition had the highest increase in re-appraisal. Most importantly, the largest decrease in vengeance was observed for participants who were in the intervention

condition and had the highest increase in re-appraisal. Overall, these findings suggest that re-appraisal is negatively related to vengeance and aggressive behavior.

CHAPTER 1. OVERVIEW OF DISSERTATION

Izard (2009) states, "emotion feelings constitute the primary motivational component of mental operations and overt behavior (pg. 2)." Indeed, extant research (e.g., Anderson & Bushman, 2002; Troy, Wilhelm, Shallcross, & Mauss, in press) as well as several emotion theories (e.g., Frijda, 1986; Lazarus, 1991) explicate the importance of emotions in predicting social behaviors. These theories posit that emotions serve an adaptive function to help maintain one's current experiences with the social environment, or, perhaps, alter these experiences based on the individual's motivations. In short, emotions influence behaviors, physiological arousal, and experiential outcomes of social interactions (Gross, 1998a). Consistent with this theorizing, it may be adaptive to down regulate certain negative emotions, such as anger. The method by which individuals are able to reduce their anger is important to studying the antecedents of aggressive behavior. Myriad cognitive, emotional, and behavioral processes have been shown to effectively reduce anger and subsequent aggressive behavior, such as distraction (Bushman, 2002), suppression (DeWall, Baumeister, Stillman, & Galliot, 2007), and forgiveness (Wilkowski, Robinson, & Troop-Gordon, 2010). However, less is known about how re-appraisal, another emotion regulation strategy, is related to aggressive behavior.

Three studies test the general hypothesis that re-appraisal is negatively related to aggression. Study 1 is a cross-sectional study testing the relations between re-appraisal and self-reported aggressive cognitions, aggressive affect, and aggressive behavior. The moderating effect of re-appraisal on the relation between aggression-related variables and several indices of aggressive behavior will also tested. Study 2 is an experimental study. Re-appraisal is hypothesized to be cued when participants received mitigating information (i.e., an excuse) after positive, negative, or no feedback regarding why that feedback is given. Variables that may

mediate these relations will also be tested. Finally, Study 3 is an intervention focused on reducing self-reported vengeance by teaching participants about re-appraising the situation.

CHAPTER 2. THE CONTEXT OF RE-APPRAISAL

The formal definition of emotion regulation is, "…the process by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions (Gross, 1998a, pp. 275)." Examples of emotion regulation strategies include distraction, coping, rumination, exercise, re-appraisal, and others. Many different theories have been proposed to explain why individuals engage in emotion regulation strategies and the processes that delineate its success or failure (see Augustine & Hemenover, 2009; Larsen, 2000). The focus of is testing how re-appraisal, an emotion regulation strategy, aimed at reducing negative emotions by focusing on the situation (Augustine & Hemenover, 2009; Gross, 1998b).

Several psychological literatures define re-appraisal differently. Emotion theorists define re-appraisal as, "…changing how we think about a situation in order to decrease its emotional impact (Gross, 2001, pg. 214)." Personality psychologists treat re-appraisal as a product of cognitive control, or the ability to inhibit one's natural (often negative) retaliatory actions to hostility (Wilkowski & Robinson, 2007). Finally, attribution (Anderson, Krull, & Weiner, 1996) and aggression theorists (Anderson & Bushman, 2002) define re-appraisal as the process in which individuals seek additional information to clarify their feelings and the current situation. Although theoretically distinct, these literatures all posit that when a negative emotion is experienced (e.g., anger), it is important to reduce those negative emotions before potentially maladaptive behaviors ensue.

For the purposes of the current research, re-appraisal will be operationalized as a hybrid of all three literatures. That is, re-appraisal is: *a method of understanding and seeking information to cognitively change a situation to be less negative spurned by the reduction of natural action tendencies associated with that negative emotion*. This definition allows for a

consistency across the literatures while allowing for specific predictions to be made that are specific to a literature. For example, aggression researchers posit that re-appraisal can be positively related to aggressive behavior because seeking out information about the situation may lead to rumination. Emotion and personality theorists state that re-appraisal can only decrease negative emotions.

To date, the extant research has conceptualized re-appraisal as an important process in emotion regulation (see Gross, 1998b, 2001). Findings from this literature suggest that by cognitively altering the perceptions of a situation, individuals are better able to regulate their negative emotional states. Gross's (1998a) process model of emotion regulation (depicted in Figure 1) distinguishes antecedent-focused emotion regulation from response-focused emotion regulation. The former is defined as regulating the evaluation of internal and external emotional cues *prior to* the generation of the actual emotion, while the latter is defined as regulating the behavioral, experiential, and physiological response tendencies of the situation to change emotions *after* the emotion is generated (Gross, 1998a; 1998b). Re-appraisal is an antecedent-focused emotion regulation strategy that operates by cognitively changing the meaning of the situation.

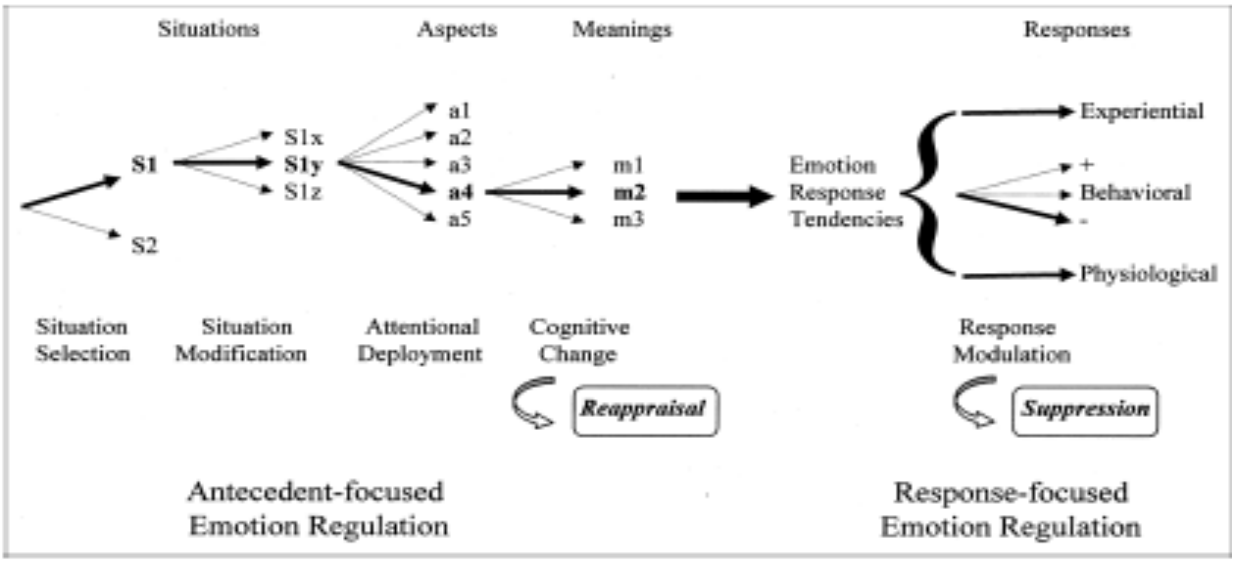


Figure 1. Gross's (1998a; 1998b) process model of emotion regulation

Figure 1 shows that there are four processes by which antecedent-focused emotion regulation operates. The first is situation selection, in which individuals may choose to actively avoid situations that will likely elicit a negative emotion. Once a situation is selected, it may be altered to change the emotional impact (termed situation modification). Then, individuals will likely allocate attentional resources to only certain aspects of the newly selected and modified situation. Finally, one may cognitively change the meaning of aspects of the situation. Gross (1998b) stated that re-appraisal is likely to lessen negative emotions by changing the meaning of that situation.

Within Gross' (1998a; 1998b) model, re-appraisal is a bi-product of several earlier processes that operate prior to actually experiencing a negative emotional state. However, research has shown that re-appraisal processes can also occur after an emotional experience is felt (e.g., Urry, 2009). Because emotions are defined as being short-lived, any given emotion regulation strategy should not be needed after that negative emotion has subsided. Gross and

Thompson (2007) posit that re-appraisal conforms to a timetable called the emotion-generative cycle (see Figure 2).

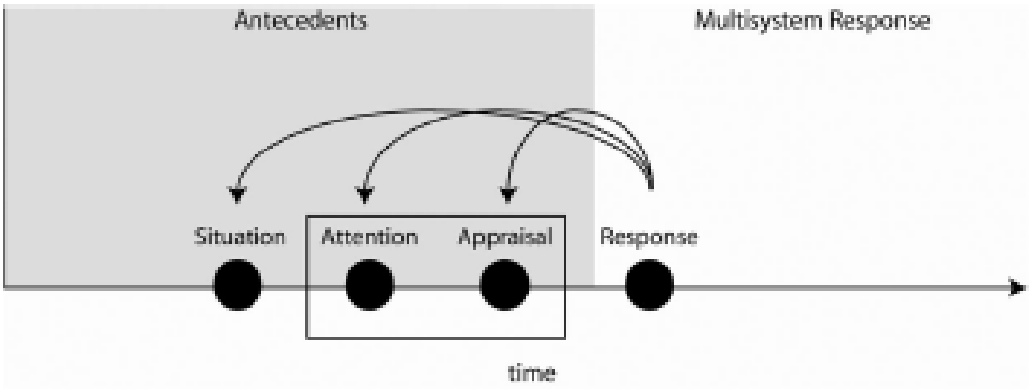


Figure 2. Emotion-Generative Cycle

Within the context of the process model of emotion regulation (Gross, 1998a; 1998b), different emotion regulation processes are likely to occur over time. Figure 2 denotes that an emotional episode is iterative. After an emotional response (e.g., sadness), one selects and modifies the new situation (based upon that response), pays attention to certain aspects of that situation, and then cognitively alters the new situation, which influences the expression of the next emotion. Urry (2009) states that emotional experiences and subsequent response are likely to generate the same process continually, until the emotion has stopped (see Figure 3).

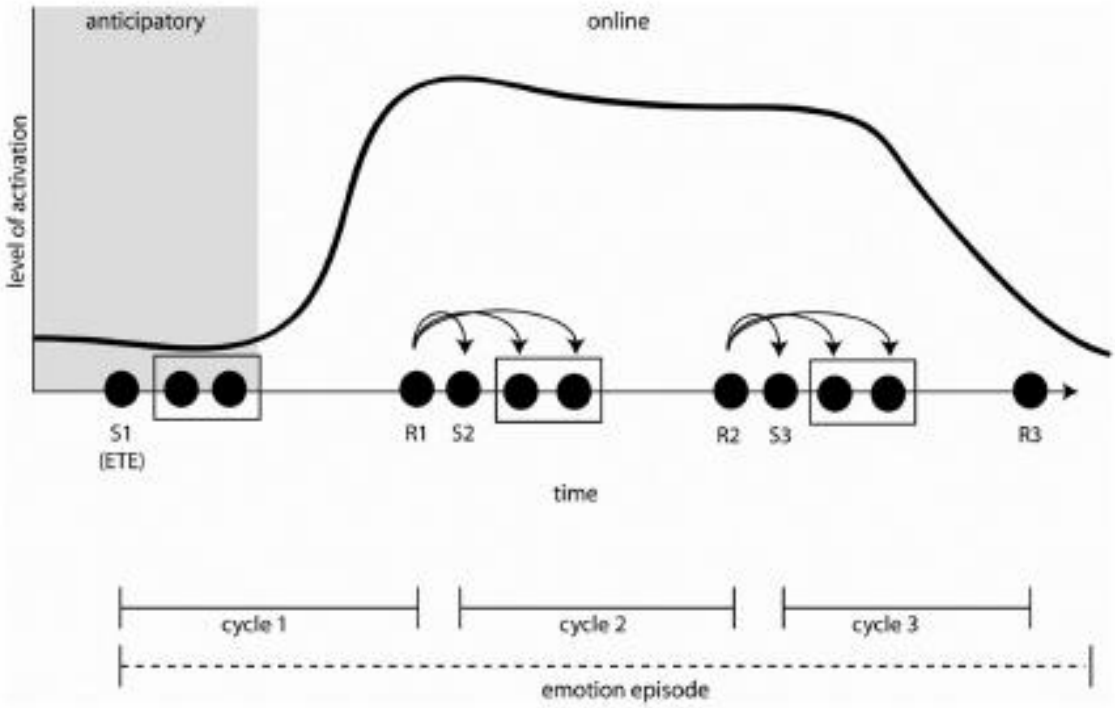


Figure 3. Non-linear unfolding of emotional experiences during an emotional episode.

In Figure 3, there are three cycles within a single emotional episode. The level of activation on the Y-axis represents the strength of the negative emotional reaction. The X-axis represents the emotional experience over time. S1 represents the situation and the two dots in the box represent attentional processes and re-appraisal processes, respectfully. R1 represents the emotional response to the first situation. Once a situation elicits an emotional response, emotional intensity increases and needs to be regulated. One's initial response to the first situation will likely generate a new situation that will require its own attentional and reappraisal processes. This online processing continues until the intensity of the emotional reaction decreases back to baseline.

These findings have important implications for the study of aggression as well as the current research. Namely, these results suggest that re-appraisal is likely to occur prior to the

emotion. Thus, after a provocation, re-appraisal (if it occurs) is likely to reduce aggressive affect (anger, vengeance) prior to its influence on aggressive behavior, suggesting a mediated pathway. Second, re-appraisal is likely to take time to process. Indeed, aggression theory (discussed later) posits that one must have sufficient time (along with motivation and cognitive ability) for re-appraisal to occur. Finally, this suggests that one re-appraisal may not be sufficient to reduce anger after a provocation. Indeed, Urry (2009) suggests that if the emotional experience is very intense (e.g., anger after a harsh provocation) then several re-appraisals may be necessary to change subsequent aggressive behaviors. This is also consistent with aggression theory. Overall, understanding how cognitive re-appraisal operates has implications for the study of re-appraisal is personality, emotion, attributional, and aggression domains. The current research (especially Study 2, the experimental study) will utilize these findings in designing procedures and provocations that are optimal for re-appraisal to occur.

CHAPTER 3. ANGER, AGGRESSION, AND RE-APPRAISAL

There is limited evidence linking re-appraisal to anger. Mauss, Evers, Wilhelm, and Gross (2010) found that participants with positive evaluations of re-appraisal were less angry after a provocation compared to individuals who had less positive re-appraisal evaluations (see also Mauss, Cook, Cheng, & Gross, 2007). Research has shown that anger increases from baseline after participants recalled a time they were angered, but that anger significantly decreased for those who were told to re-appraise the situation (Ray, Wilhelm, & Gross, 2008). Finally, correlational evidence showed a negative relationship between re-appraisal and trait anger (r = -.22, p < .01; Martin & Dahlen, 2005). Despite all of this evidence, there is a paucity of research that has tested: a) the simple correlation between re-appraisal and aggressive *behavior*, b) the moderating role of trait re-appraisal with other aggression-related variables, and c) the mediating influence of re-appraisal on aggressive behavior through a reduction of aggressive affect.

There are theoretical reasons to expect that re-appraisal will be negatively related to anger and aggressive behavior and that several variables moderate and mediate these relations. Gross (1998b) elucidated on how and why re-appraisal should affect any negative emotion, including anger, but these models cannot fully explain why re-appraisal is related to behavior. Two theoretical frameworks explicitly state the role that re-appraisal and anger have on aggressive behavior: The General Aggression Model and the Integrative Cognitive Model of Trait Anger.

General Aggression Model

The General Aggression Model (GAM; Anderson & Bushman, 2002) posits a causal relation between a variety of known aggression-related personality and situational variables and

aggressive behavior. Proximate processes within GAM predict that two types of input factors (situational and personality) are going to be related to aggressive behavior. These personality and situational variables will interact to influence one's present internal state, which consists of aggressive affect, aggressive cognitions, and physiological arousal. These three variables are all expected to be correlated with one another, each variable influencing the other.

The activation of the internal state variables is related to appraisal and decision processes that predict when an impulsive and/or thoughtful behavior is likely to occur. Impulsive and thoughtful behaviors can be aggressive or non-aggressive. Impulsive aggression is more likely to occur when a decision regarding whether or not to aggress is imminent after an initial hostile attribution. Thoughtful aggression may occur as a function of planning to aggress and fully analyzing the situation after an initial hostile attribution. Whether the behavior is impulsive or thoughtful, any behavior will be related to the present social encounter. This social encounter will feed back into the input factors at the beginning of GAM (see Figure 4).

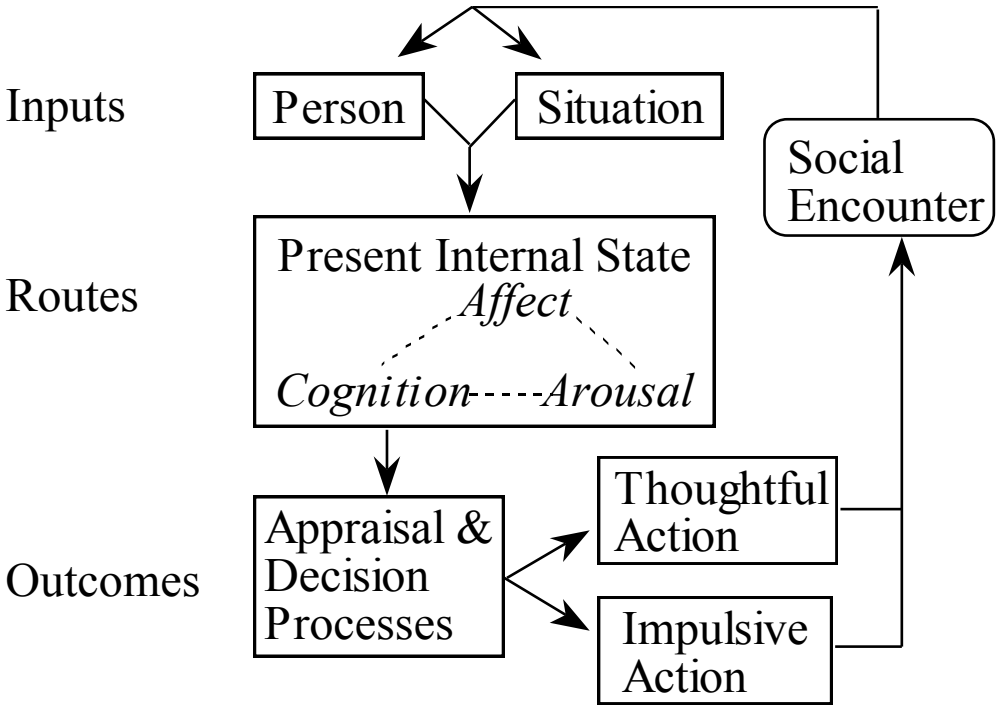


Figure 4. Proximate GAM (Anderson & Bushman, 2002)

Less is known about the appraisal and decision making process that GAM predicts will immediately precede an impulsive or thoughtful act. An individual will make an immediate appraisal of a given situation and then decide to act. The behavior will coincide with the initial attribution unless the individual has the time, cognitive resources, and motivation necessary to think about the situation more carefully. If the person does not have these conditions met and the outcome of the initial appraisal is hostile then the outcome will likely be an impulsive aggressive behavior. If an individual has sufficient cognitive resources available, motivation, and time to process the situation, then re-appraisal processes may occur if the outcome of the initial attribution is important but unsatisfying. If a person has ample time and cognitive resources to devote to deciding whether or not to aggress, then the person may think about their immediate appraisal of the situation and choose to alter it or keep it constant (see Figure 5).

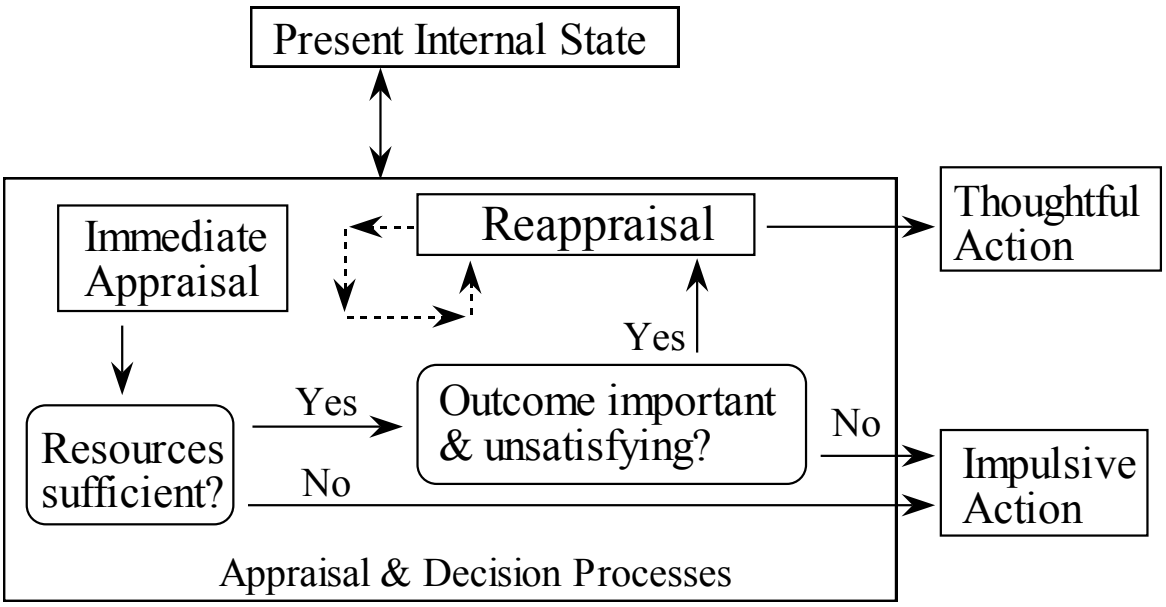


Figure 5. Decision and Re-Appraisal Process in GAM.

Integrative Cognitive Model of Trait Anger (ICMTA)

Wilkowski and Robinson (2007) stated that re-appraisal is an important process for determining the cognitive underpinnings for why people experience anger and subsequent aggression. Wilkowski and Robinson's (2007) Integrative Cognitive Model of Trait Anger (ICMTA) posits that a hostile situation will likely be processed and interpreted automatically. Aggression is predicted to be immediately preceded by anger. Of relevance to the current research, ICMTA predicts that several processes are expected to decrease the probability of aggressive behavior, including recruiting effortful control to re-appraise a hostile situation possibly altering the situation to a less hostile one (see Figure 6). This model predicts that effortful control is needed to reduce aggression. Effortful control is conceptualized as the ability to override automatic tendencies towards aggression (Eisenberg, Smith, Sadovsky, & Spinrad,

2004), and is very similar to GAM's postulation of needing sufficient resources (in addition to time and motivation) to potentially re-appraisal an initially hostile interpretation.

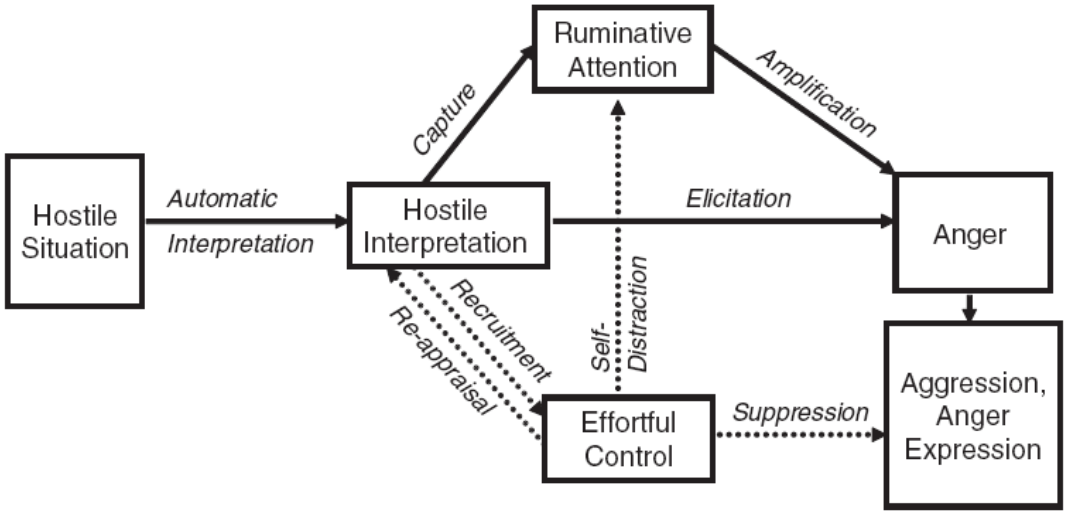


Figure 6. ICMTA (Wilkowski & Robinson, 2007b)

Wilkowski and Robinson (2007) showed that high trait anger participants were quicker at responding to hostile primes, because low trait anger participants had the ability to use effortful control and were less reactive to hostile situations. Wilkowski, Robinson, Gordon, and Troop-Gordon (2007) also found that high trait anger participants had shorter fixation times to hostile situations compared to those low on trait anger. This suggests that high trait anger participants can make inferences of hostility in ambiguous situations before the information is fully encoded. Finally, Wilkowski and Robinson (2008) found a direct negative relation between emotional clarity and trait anger, which was fully mediated by anger control, suggesting that effortful control accounted for variance in the relation between clarity of one's emotional states and anger.

To date, no published work has examined how re-appraisal is related to aggressive behavior through the reduction of anger after a provocation. GAM and ICMTA predict how re-appraisal should be related to aggressive behavior, but both theories lack specificity in their explanations. ICMTA states that re-appraisal is likely to occur if effortful control is recruited after interpretation of a hostile situation. GAM does not elaborate on the processes that occur while re-appraising anger that likely guide behavior. GAM incorporates a dual-arrow from the internal state to the decision and appraisal processes. This suggests that re-appraisal (if cued) can influence aggressive affect (or any other internal state routes) which re-enters the appraisal and decision processes, possibly leading to a different behavioral outcome.

Both GAM and ICMTA conceptualize re-appraisal as the process by which initial attributions are changed to influence behavior. GAM states that re-appraisal is likely to occur immediately prior to a premeditated behavior, whereas ICMTA states that re-appraisal is related to aggressive behavior through several processes that reduce anger. However, ICMTA assumes that the default goal of re-appraisal is to reduce negative affect. GAM implies that anger may decrease or increase, depending on the outcome of re-appraisal. GAM is more general because it can handle cases in which re-appraisal leads to increased anger and aggression (such is in rumination effects) and with cases in which re-appraisal leads to decreases in anger and aggression.

CHAPTER 4. RE-APPRAISAL AS AN INDIVIDUAL DIFFERENCE VARIABLE

Learning theory (e.g., Gentile, Anderson, Yukawa, Ihori, et al., 2009) predicts that re-appraisal can become a part of an individual's constitution (see Gross, 1998a; Williams, Bargh, Nocera, & Gray, 2009) if the individual is successful at re-appraising the situation, has sufficient practice re-appraising, and is reinforced for re-appraising. Therefore, examining the relations between trait levels of re-appraisal and trait levels of aggressive behavior is important. Also, because re-appraisal (as a process) is integrated in several aggression theories, there is theoretical reason to examine the moderating role of re-appraisal between several aggression-related personality variables and aggressive behavior. These will be detailed below.

Trait Aggression. Trait aggression is an important predictor of aggressive behavior (Anderson, Carnagey, Flanagan, Benjamin, Eubanks, & Valentine, 2004). The Buss and Perry (1992) Aggression Questionnaire is the most common method of estimating trait aggression. Of importance, this questionnaires measures trait levels of behavior, anger (an affective variable) and hostility (a cognitive variable). Trait levels of re-appraisal and anger are expected to interact with one another to influence aggressive behavior. For instance, those high on trait anger and low on re-appraisal are expected to have the highest levels of aggression compared to those who are high re-appraisers and low on trait anger who should experience the lowest levels of aggressive behavior. These relations are not expected for trait hostility. Although considerable research has found sizable correlations between trait anger and trait hostility, trait hostility, at a theoretical level, is conceptualized as an aggressive cognition. If emotion regulation theory is correct, then re-appraisal and trait hostility are not predicted to be as strongly related as re-appraisal and trait anger, possibly influencing any interaction findings.

Vengeance. Vengeance (also known as revenge motivation) is defined as, "… an attempt to redress an interpersonal offense by voluntarily committing an aggressive action against the perceived offender" (McCullough, Bellah, Kilpatrick, & Johnson, 2001, pp. 602). Vengeance contains both cognitive (e.g., planning) and affective elements (anger) (e.g., Bushman & Anderson, 2001). Stillwell, Baumeister, and Del Priore (2008) stated that a goal of vengeance is to restore equity after a provocation and found evidence to suggest that avengers actively seek out methods to hurt a transgressor. Re-appraisal may statistically interact with vengeance to influence aggressive behavior. The highest levels of aggressive behavior are hypothesized to be found for those who are high on vengeance and low on re-appraisal; whereas the lowest levels of aggressive behavior are expected to occur for those who are low on vengeance and high on re-appraisal.

Control Aggression Schemas. Control aggression schemas are defined as knowledge structures that guide behavior with the intent of using aggression as a means to regain or create control in a situation (Warburton, 2007). Control aggression schemas are expected to be negatively correlated with re-appraisal, but may also interact to influence aggressive behavior. The highest level of aggressive behavior is predicted to occur when re-appraisal is low and accessibility of these schemas is high; whereas the lowest levels of aggression are expected when re-appraisal is high and accessibility of these schemas are low.

Overall, re-appraisal is predicted to be a protective factor in the relation between trait anger, hostility, control aggression schemas, and vengeance. In other words, re-appraisal should statistically moderate the relation between these aforementioned variables and aggressive behavior. Specifically, the slope of the relations between these variables and aggressive behavior

should be positive and significant; however, when re-appraisal is entered into the model, the slope should be lower for high (compared to low) re-appraisers. This is one foci of Study1.

CHAPTER 5. CUEING RE-APPRAISAL

The majority of the experimental research on re-appraisal has either specifically told participants to re-appraise (e.g., Hemenover, 2003; Sheppes, Catran, & Meiran, 2009; Urry, 2009) or inferred re-appraisal based on participant's physiological arousal and/or responses to emotion questionnaires (e.g., Mauss, Cook, & Gross, 2007; Mauss et al., 2010). However, it is hypothesized that the presence of mitigating information after a hostile situation will may cue re-appraisal. Here mitigating information is defined as any situational variable, either directly or indirectly given or inferred by the victim, which the victim may attribute to a provocation away from the provocateur.

The presence and salience of key situational variables, such as mitigating information, may cue re-appraisal processes that allow a more benign interpretation of some initial provocation, such as an insult. For example, additional information about recent negative events in the provocateur's life allows the provoked person to re-attribute the insult to the uncharacteristically sad or negative mood of the person who insulted them. In other words, mitigating factors are pieces of information that may change an initially hostile attribution after a provocation into one that is less personally threatening, likely decreasing aggressive behavior. Indeed, lower levels of aggressive behavior have been found when a) the researcher apologizes for the provocation (e.g., Ohbuchi, Kameda, & Agarie, 1989), b) participants are told their "partner" did not intend to hurt them (e.g., Batson, Bowers, Leonard, & Smith, 2000), and c) the provocation is explained to be justified (e.g., Dill & Anderson, 1995; Stemmler, 1997). Mitigating factors reduce aggressive behavior by altering one's initial hostile attribution from the provocateur to the extra information (e.g., Krieglmeyer, Wittstadt, & Strack, 2009), hence, re-appraisal.

Mitigating information may cue re-appraisal, decreasing anger and subsequent aggressive behavior; however it is important to distinguish re-appraisal (manipulation of intent or justification) with an apology. While an apology is, by definition, a source of mitigating information similar to an excuse, there are important differences that may warrant overlap unjustified. In an apology, the aggressor is taking responsibility for his actions and allowing any harm to be attributed to him. By admitting blame and possibly harming the self, the victim may not aggress in retaliation. Thus, an apology is psychologically different from an excuse because the victim's attributions for an apology are to the provocateur while the attributions for an excuse are to the information, not the person. The future implications for the victim are very different for apology versus excuse, as are the current implications for the victim's self-view.

Ohbuchi, Kameda, and Agarie (1989) investigated the role that apologies had on aggressive behavior. Female participants completed puzzles in the presence of a junior experimenter. During the learning trials, the junior experimenter purposefully made mistakes during the presentation of the puzzles (e.g., went too fast, put the figures upside-down). Participants then tried to solve these puzzles. When the participants inevitably failed, a senior researcher entered the room and was very rude to the participants. Participants were then randomly assigned to either receive an apology or not from the junior experimenter prior to engaging in an aggressive behavioral task. Results showed that when an apology was present, aggression was lower.

Overall, research suggests that re-appraisal processes will likely occur after a provocation (or any other aggression-eliciting stimulus), and mitigating information (e.g., an excuse or apology) will likely cue such processes. Indeed, results from a recent meta-analysis sampling 1,234 participants (34 effect sizes within 18 studies) found that the overall effect of mitigating

information on aggressive behavior was negative (r = -.10 [95% CI: -.14 to -.07], Z = -5.85, p < .001), suggesting that mitigating information decreases aggressive behavior (Barlett, 2011).

However, little research has tested what variables mediate these relations. Wilkowski, Robinson, and Troop-Gordon (2010) tested if revenge mediated the relation between cognitive control and aggressive behavior. They separated participants into high or low cognitive control based on their reaction times to hostile words prior to completing the Competitive Reaction Time Task. Results showed that revenge motives significantly mediated the relation between cognitive control and aggressive behavior, such that high cognitive control participants were less aggressive towards their "partner" because of a reduction in revenge motives. However, there are several methodological issues that call the validity of their conclusions into question. First, there was no random assignment to high and low cognitive control making the data correlational. Second, revenge motives were assessed after the aggressive behavior measure violating the temporal precedence rule in mediation (see Baron and Kenny, 1986). Third, there was no random assignment to provocation, and all participants were equally provoked (by losing trials of the CRT). Finally, there was no check for suspicious participants, which is a concern for any social psychology deception study. Despite these issues, the Wilkowski et al. (2010) findings does suggests that revenge motives may mediate the relation between provocation and aggressive behavior, but this has yet to be experimentally tested in the literature. This will be tested in Study 2.

CHAPTER 6. APPLIED EXTENSIONS

The extent to which re-appraisal is related to aggressive behavior may be useful in aggression-related interventions. There are no published interventions focused on reducing aggression using re-appraisal training. However, several interventions have been successful at reducing aggression through changing aggressive cognitions. Hudley and Graham (1993) developed an intervention to alter one's hostile attribution bias. Results from this 12 session intervention (which met twice weekly for 45-60 minutes for 6 weeks) showed that when a situation was ambiguous, hostile attribution bias was decreased for those in the intervention condition (see also Hudley, Graham, & Taylor, 2007). Other interventions have been developed to reduce normative aggressive beliefs and aggressive fantasies. Guerra, Henry, Huesmann, and Tolan (2007) developed an intervention that lasted one hour per week for 20 weeks a year for two years. Results showed that intervention participants had lower aggressive fantasies, lower normative beliefs about physical aggression, and lower intent to use aggressive responses (see also Guerra & Slaby, 1990).

The results from the previous two interventions suggest that altering one's hostile attribution bias or normative aggressive beliefs are sufficient to reduce subsequent aggression. However, re-appraisal processes act on aggressive affect, whereas the previous interventions focused on aggressive cognitions. Thus, an intervention teaching re-appraisal with the purpose of reducing aggression is needed (see John and Gross, 2004). Indeed, Boxer and Dubow (2002) stated that social-cognitive based aggression interventions have not sufficiently examined the role of emotional regulation (e.g., re-appraisal).

One goal of Study 3 is to test an intervention at teaching re-appraisal tactics to reduce aggressive affect. Aggressive affect was the primary variable of interest for the intervention,

because emotion regulation theory (Gross, 1998b), as well as aggression theory (Wilkowski & Robinson, 2007) posit how re-appraisal should influence aggressive affect to reduce aggressive behavior. Thus, if an intervention can target and reduce a target variable, then the social behavior should also be reduced. However, because emotion and attributional theorists define re-appraisal differently, two related intervention curricula were developed.

CHAPTER 7. CONCEPTUAL OVERVIEW AND HYPOTHESES: STUDY 1

Conceptual Overview

Study 1 had two primary objectives. The first objective was to determine the magnitude and direction of the simple relations between trait re-appraisal and aggression related affect, aggressive behavior, and low agreeableness. The second objective was to examine the moderating role of re-appraisal in the relation between several aggression-related variables and aggressive behavior.

Hypotheses

It is predicted that re-appraisal will be negatively correlated with all aggression-related affect and behavioral variables. Also, re-appraisal is predicted to moderate the relation between trait anger, trait hostility, vengeance, and control aggression schemas and aggressive behavior. It is likely that moderation will depend on the type of aggressive behavior measured and the specific aggression-related variable measured, thus no specific predictions can be made here.

CHAPTER 8. STUDY 1 RESEARCH METHODS

Participants

Four hundred thirty-one (33% male) participants from a large Midwestern University participated in the current study for partial course credit for their psychology classes. The average age of the participants was 19.31 (*SD* = 1.89) years. The majority of the participants were Caucasian (86%), which is typical of the demographic at the university. All participants were treated in accordance with the APA ethical guidelines.

Measures

Trait Aggression. The Buss-Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992) was used to assess trait aggression (α = .93). This is a 29-item questionnaire that asks participants to indicate how much they believe items are characteristic of them on a 1 (*not at all characteristic of me*) to 7 (*extremely characteristic of me*) rating scale. This scale contains four subscales. The first is the physical aggression subscale that has nine items (α = .87). A sample item includes, "Once in awhile, I cannot control the urge to strike another person." The second subscale is the verbal aggression subscale, which consists of five items (α = .87). A sample item includes, "I often find myself disagreeing with people." The third subscale is the anger subscale, which consists of seven items (α = .82). A sample item includes, "Some of my friends think that I am a hothead." The final subscale is the hostility subscale, which consists of eight items (α = .89). A sample item includes, "I wonder why sometimes I feel so bitter about things." Certain items were reverse scored and then summed, such that higher scores indicate higher levels of trait aggression (and the subscales). See Appendix A.

Trait Empathy. The Trait Empathy Questionnaire (TEQ; Mehrabian & Epstein, 1972) was used to assess trait levels of empathy (α = .84). This is a 31-item questionnaire that asks

participants to indicate how much they agree with the items on a 1 (*strongly agree*) to 5 (*strongly disagree*) rating scale. A sample item includes, "It makes me sad to see a lonely stranger in a group." Certain items are reverse scored and summed, such that higher scores indicate higher levels of empathy. See Appendix B.

Vengeance. The Vengeance Scale (VS; Stuckless & Goranson, 1992) was used to assess trait levels of vengeance (α = .92). This is a 20-item questionnaire that asks participants to indicate how much they agree with the items on a 1 (*disagree strongly*) to 7 (*agree strongly*) rating scale. A sample item includes, "Revenge is sweet." All items were summed, such that higher scores indicate higher levels of vengeance. See Appendix C.

Impulsive and Premeditated Aggression. The Impulsive and Premeditated Aggression Scale (IPAS; Kockler et al., 2006; Stanford et al., 2003) was used to assess both premeditated and impulsive aggression (α = .94). This is a 20-item questionnaire that asks participants to indicate how much they agree with the items on a 1 (*strongly disagree*) to 5 (*strongly agree*) rating scale about aggressive acts they have done in the last six months. The impulsive aggression subscale consists of eight items (α = .89), and the premeditated aggression subscale consists of 12 items (α = .91). Items were summed for each subscale, such that higher scores indicate higher impulsive and premeditated aggression. A sample item for the thoughtful subscale is, "Some of the acts were an attempt at revenge," and a sample item for the impulsive subscale is, "When angry, I reacted without thinking." It is unclear whether or not this questionnaire assesses aggressive affect or aggressive behavior. This scale was designed to measure the latter; however, inspection of the items and response scale show that it measures aggressive affect, and will be treated as an aggressive affect variable. See Appendix D.

Re-appraisal. In order to measure trait levels of the extent to which people re-appraise a situation, the re-appraisal subscale (RAS) from the Emotion Regulation Questionnaire (Gross & John, 2003) was used ($\alpha = .94$). This is a six item questionnaire that asks participants the extent to which they agree with the items on a 1 (*strongly disagree*) to 7 (*strongly agree*) rating scale. A sample item includes, "I control my emotions by changing the way I think about the situation I'm in." These items were summed such that higher scores indicate higher levels of re-appraisal. See Appendix E.

Normative Aggressive Beliefs. A modified version of the Normative Beliefs about Aggression Scale (NOBAGS; Huesmann, Guerra, Miller, & Zelli., 1992) was used to assess the extent to which people believe that certain aggressive acts are acceptable or not. The modified version is a 12-item questionnaire that asks participants to indicate how acceptable a variety of aggressive acts are on a 1 (*it's really wrong*) to 4 (*it's perfectly OK*) rating scale. A sample item includes, "Suppose a man says something bad to another man, John, do you think it's OK for John to scream at him?" See Appendix F.

Demographics. A demographics questionnaire was used to assess basic demographic information, such as sex, ethnicity, and age. See Appendix G.

Violent Behavior. The modified National Youth Survey (NYS; Anderson & Dill, 2000) was used to assess violent behavior. This is a 10-item questionnaire that asks participants to indicate how often they did a variety of aggressive acts in the past year on a 1 (*0 times*) to 11 (*more than 27times*) rating scale. All of the items were standardized prior to summing them because the standard deviation of certain items tends to be much larger than the standard deviation of other items. The standardized items were summed such that higher scores indicate higher levels of aggressive behavior ($\alpha = .96$). See Appendix H.

Control Aggression Schemas. The Control-Aggression Schema Scale (CASS-R; Warburton, 2007) was used to assess schemas related to control and aggression (α = .90). This is a 35-item questionnaire that asks participants to respond to each item on a 1 (*completely untrue*) to 6 (*completely true*) rating scale. These items were summed together, such that higher scores are indicative of higher belief in control aggression. A sample item included, "Often you need to be aggressive to get what you want." See Appendix I.

Aggressive Behavior. In order to measure aggressive behavior, the Aggressive and Prosocial Behavior Questionnaire (APBQ; Boxer, Tisak, & Goldstein, 2004) was used. This is a 25-item questionnaire that asks participants to rate how much the statements are like them on a 1 (*definitely not like me*) to 6 (*definitely like me*) rating scale. This scale contains two aggression-related subscales, each consisting of five items. The first measures proactive aggressive behavior (α = .92), and a sample item included, "I often insult people to get what I want." The second subscale measures reactive aggressive behavior (α = .88) and a sample item included, "When someone makes me angry or upset, I will often say mean things to them for it." Each of the five items was summed for each subscale, such that higher scores indicate higher levels of the measured construct. See Appendix J.

Procedure

Participants completed the aforementioned questionnaires using an online study format. Three random orders of questionnaires were use, as shown in Table 1. Upon completion of the questionnaires, participants were thanked and fully debriefed.

Table 1. List of Questionnaires in each Order

Order 1	Order 2	Order 3
Demographics	Demographics	Demographics
APBQ	APBQ	APBQ
TEQ	VS	BPAQ
NYS	NOBAG	IPAS
BPAQ	RAP	VS
IPAS	CASS-R	NOBAG
VS	TEQ	RAP
NOBAG	NYS	CASS-R
RAP	BPAQ	TEQ
CASS-R	IPAS	NYS

CHAPTER 9. ANALYSES AND RESULTS: STUDY 1

Zero Order Correlations.

Table 2 displays the zero-order and point bi-serial correlations between the relevant variables and Table 3 shows the descriptive data for each questionnaire.

Consistent with the hypotheses of the current study, re-appraisal was negatively correlated with the majority of aggression-related variables, such as violence (r = -.21, p < .01), reactive aggression (r = -.22, p < .01), proactive aggression (r = -.29, p < .01), normative aggressive beliefs (r = -.12, p < .03), and trait aggression (r = -.13, p < .03). Re-appraisal was negatively correlated with impulsive aggression (r = -.14, p < .01), but not premeditated aggression (r = -.08, p = .13). A test of the difference in correlations for a dependent sample showed that the correlation between re-appraisal and impulsive aggression was significantly different than the correlation between re-appraisal and premeditated aggression, $t(363) = -12.85$, p < .01. Finally, re-appraisal was unrelated to sex (r = -.07, p = .18).

Table 2. Zero-Order Correlations between Relevant Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	(.94)															
2	-.14**	(.89)														
3	-.08	.75**	(.92)													
4	-.21**	.20**	.17**	(.96)												
5	.05	.30**	.41**	.09┼	(.90)											
6	-.22**	.35**	.35**	.21**	.41**	(.88)										
7	-.29**	.32**	.26**	.36**	.31**	.57**	(.92)									
8	-.21**	.39**	.48**	.13*	.52**	.51**	.42**	(.93)								
9	-.13*	.54**	.51**	.27**	.56**	.58**	.40**	.56**	(.87)							
10	-.10*	.40**	.44**	.28**	.55**	.57**	.36**	.55**	.80**	(.87)						
11	.02	.35**	.39**	.13*	.40**	.43**	.25**	.37**	.74**	.46**	(.82)					
12	-.18**	.48**	.36**	.20**	.37**	.49**	.37**	.45**	.83**	.55**	.58**	(.89)				
13	-.10*	.42**	.39**	.17**	.42**	.35**	.28**	.35**	.77**	.37**	.41**	.55**	(.82)			
14	-.12*	.31**	.33**	.28**	.40**	.44**	.38**	.48**	.46**	.47**	.26**	.34**	.28**	(.90)		
15	.14**	-.21**	-.30**	-.22**	-.25**	-.29**	-.28**	-.42**	-.27**	-.39**	-.19**	-.20**	-.06	-.22**	(.84)	
16	-.07	.14**	.19**	.15**	.28**	.26**	.16**	.24**	.28**	.39**	.27**	.10┼	.12*	.12*	-.46**	(1.00)

1 = Re-appraisal, 2 = impulsive aggression, 3 = premeditated aggression, 4 = NYS, 5 = control aggression schemas, 6 = reactive aggressive behavior, 7 = proactive aggressive behavior, 8 = vengeance, 9 = BPAQ, 10 = physical aggression, 11 = verbal aggression, 12 = anger, 13 = hostility, 14 = NOBAGS, 15 = empathy, 16 = sex (1 = male, -1 = female).

Numbers on diagonal are the reliabilities

┼ $p < .10$, * $p < .05$, ** $p < .01$

Table 3. Descriptive Statistics for all Relevant Variables

Scale	Mean	(SD)	Min	Max	Range
Impulsive Aggression	17.67	(6.53)	8.00	32.00	24.00
Premeditated Aggression	28.60	(9.18)	12.00	51.00	39.00
Re-Appraisal	29.02	(7.67)	6.00	42.00	36.00
Control Aggression Schemas	103.19	(21.80)	36.00	168.00	132.00
NYS (standardized)	-0.07	(8.48)	2.35	66.40	68.76
Reactive Aggression	10.05	(4.38)	5.00	26.00	21.00
Proactive Aggression	6.54	(2.95)	5.00	23.00	18.00
Vengeance	63.21	(18.33)	20.00	133.00	113.00
Trait Aggression	80.04	(26.34)	31.00	169.00	138.00
Physical Aggression	22.13	(10.32)	9.00	55.00	46.00
Verbal Aggression	16.12	(6.31)	5.00	35.00	30.00
Anger	18.33	(7.20)	7.00	42.00	35.00
Hostility	22.53	(9.36)	8.00	49.00	41.00
Normative Aggressive Beliefs	14.72	(2.76)	12.00	24.00	12.00
Trait Empathy	105.98	(11.53)	66.00	144.00	78.00

Overall, results from the zero-order correlations support the general hypothesis that re-appraisal is negatively related to aggression-related variables. Although these zero-order correlations are in the theoretically predicted direction, the large number of correlations makes summarizing and drawing conclusions both difficult and somewhat risky. Therefore, additional correlational analyses were conducted on factors created based on theoretical reasons.

Content Analysis of Items.

Inspection of the individual items on each of the questionnaires revealed that several questionnaires utilized items that estimated aggressive behaviors, aggressive affect, and/or aggressive cognitions. For example, the Vengeance Scale assesses aggressive behavior, affect, and cognitions. Thus, several aggression indices were created based on a content analysis of the items. These factors included Premeditated Aggressive Behavior, Impulsive Aggressive Behavior, Unspecified Aggressive Behavior (physical aggression not classified as impulsive or

premeditated), Verbally Aggressive Behavior, Overall Aggressive Behavior, Aggressive Affect, and Low Agreeableness. The items that made up these factors are displayed in Table 4. Note that some items are repeated. For instance, Item 17 on the APBQ measures verbal aggressive behavior that is impulsive. Thus, it was counted as both.

Table 4. Classification of Aggressive Behaviors, Aggressive Affect, and Low Agreeableness

Premeditated Aggression (α = .83)

Item	Phrasing
BPAQ 8	I have threatened people I know
IPAS 5	Some of the acts were an attempt at revenge
NYS 8	Used force (strong-arm methods) to get money or things from other students
NYS 9	Used force (strong-arm methods) to get money or things from a teacher or other adult at school
NYS 10	Used force (strong-arm methods) to get money or things from other people (not students or teachers).
APBQ 21	I often insult people to get what I want
APBQ 22	I often hit people to get what I want
APBQ 23	I often push or shove people to get what I want
APBQ 24	I often say mean things to people to get what I want
APBQ 25	I often yell at people to get what I want

Impulsive Aggression (α = .87)

Item	Phrasing
BPAQ 2	Given enough provocation, I may hit another person
BPAQ 3	If somebody hits me, I hit back
BPAQ 5	If I have to resort to violence to protect my rights, I will
BPAQ 7	I can think of no good reason for ever hitting a person
BPAQ 9	I have become so mad that I have broken things
VS 3	I try to even the score with anyone who hurts me
VS 12	If someone causes me trouble, I'll find a way to make them regret it
APBQ 16	When someone makes me angry or upset, I will often push or shove them for it
APBQ 17	When someone makes me angry or upset, I will often yell at them for it
APBQ 18	When someone makes me angry or upset, I will often insult them for it
APBQ 19	When someone makes me angry or upset, I will often hit them for it
APBQ 20	When someone makes me angry or upset, I will often say mean things to them for it

Table 4. Classification of Aggressive Behaviors, Aggressive Affect, and Low Agreeableness

Unspecified Aggression (α = .82)

Item	Phrasing
BPAQ 1	Once in a while I can't control the urge to strike another person
BPAQ 4	I get into fights a little more than the average person
VS 5	I live by the motto "Let bygones be bygones"
VS 7	I don't just get mad, I get even
IPAS 15	I feel I acted out aggressively more than the average person during the last 6 months
NYS 1	Thrown objects (such as rocks, or bottles) at cars or people
NYS 3	Attacked someone with the idea of seriously hurting or killing him/her
NYS 4	Been involved in gang fights
NYS 5	Hit (or threatened to hit) a teacher or adult at school
NYS 6	Hit (or threatened to hit) one of your parents
NYS 7	Hit (or threatened to hit) other students

Verbal Aggression (α = .87)

Item	Phrasing
BPAQ 10	I tell my friends openly when I disagree with them
BPAQ 11	I often find myself disagreeing with people
BPAQ 12	When people annoy me, I may tell them what I think of them
BPAQ 13	I can't help getting into arguments when people disagree with me
BPAQ 14	My friends say that I'm somewhat argumentative
APBQ 17	When someone makes me angry or upset, I will often yell at them for it
APBQ 18	When someone makes me angry or upset, I will often insult them for it
APBQ 20	When someone makes me angry or upset, I will often say mean things to them for it
APBQ 21	I often insult people to get what I want
APBQ 24	I often say mean things to people to get what I want
APBQ 25	I often yell at people to get what I want

Table 4. Classification of Aggressive Behaviors, Aggressive Affect, and Low Agreeableness

Aggressive Behavior (α = .91)

Item	Phrasing
BPAQ 1	Once in a while I can't control the urge to strike another person
BPAQ 2	Given enough provocation, I may hit another person
BPAQ 3	If somebody hits me, I hit back
BPAQ 4	I get into fights a little more than the average person
BPAQ 5	If I have to resort to violence to protect my rights, I will
BPAQ 6	There are people who pushed me so far that we came to blows
BPAQ 7	I can think of no good reason for ever hitting a person
BPAQ 8	I have threatened people I know
BPAQ 9	I have become so mad that I have broken things
VS 3	I try to even the score with anyone who hurts me
VS 5	I live by the motto "Let bygones be bygones"
VS 7	I don't just get mad, I get even
VS 12	If someone causes me trouble, I'll find a way to make them regret it
IPAS 5	Some of the acts were an attempt at revenge.
IPAS 15	I feel I acted out aggressively more than the average person during the last 6 months.
NYS 1	Thrown objects (such as rocks, or bottles) at cars or people
NYS 3	Attacked someone with the idea of seriously hurting or killing him/her
NYS 4	Been involved in gang fights
NYS 5	Hit (or threatened to hit) a teacher or adult at school
NYS 6	Hit (or threatened to hit) one of your parents
NYS 7	Hit (or threatened to hit) other students
NYS 8	Used force (strong-arm methods) to get money or things from other students
NYS 9	Used force (strong-arm methods) to get money or things from a teacher or other adult at school
NYS 10	Used force (strong-arm methods) to get money or things from other people (not students or teachers).
APBQ 16	When someone makes me angry or upset, I will often push or shove them for it
APBQ 19	When someone makes me angry or upset, I will often hit them for it
APBQ 21	I often insult people to get what I want
APBQ 22	I often hit people to get what I want

Low Agreeableness (α = .93)

Item	Phrasing
BPAQ 22	I am sometimes eaten up with jealousy
BPAQ 23	At times I feel I have gotten a raw deal out of life
BPAQ 24	Other people always seem to get the breaks
BPAQ 25	I wonder why sometimes I feel so bitter about things

Table 4. Classification of Aggressive Behaviors, Aggressive Affect, and Low Agreeableness

BPAQ 26	I know that "friends" talk about me behind my back
BPAQ 27	I am suspicious of overly friendly strangers
BPAQ 28	I sometimes feel that people are laughing at me behind my back
BPAQ 29	When people are especially nice, I wonder what they want
VS 1	It's not worth my time or effort to pay back someone who has wronged me
VS 2	It is important for me to get back at people who have hurt me
VS 4	It is always better not to seek vengeance
VS 6	There is nothing wrong in getting back at someone who has hurt you
VS 9	I am not a vengeful person
VS 10	I believe in the motto "An eye for and a tooth for a tooth"
VS 11	Revenge is morally wrong
VS 14	If I am wronged, I can't live with myself unless I get revenge
VS 15	Honor requires that you get back at someone who has hurt you
VS 16	It is usually better to show mercy than to take revenge
VS 17	Anyone who provokes me deserves the punishment that I give them
VS 18	It is always better to "turn the other cheek"
IPAS 4	The act led to power over others or improved social status for me.
IPAS 6	I feel my actions were necessary to get what I wanted.
IPAS 8	I planned when and where my anger was expressed.
IPAS 10	Sometimes I purposely delayed the acts until a later time.
CASS 1	The world belongs to those who can dominate others
CASS 2	No act of disrespect should go unpunished
CASS 3	I don't support vigilante groups but sometimes you need to take the law into your own hands
CASS 4	A person can be both passive and effective
CASS 5	The most powerful army has the most control
CASS 6	People are most influenced by acts of kindness
CASS 7	A helpless person is the one who has lost their will to fight
CASS 8	The aggressor has more choices than their target
CASS 9	Situations you need a weapon to sort things out
CASS 10	Sometimes you have to hit back harder than you were hot originally
CASS 11	I am one among others
CASS 12	Sometimes you have to do whatever it takes to regain control
CASS 13	I can watch very violent films without feeling disturbed
CASS 14	The strongest should have the right to make the decisions
CASS 15	Peaceful means are always more effective
CASS 17	Often you need to be aggressive to get what you want
CASS 18	Sometimes people need to be crushed so they can understand the wrong they have done
CASS 19	The meek shall inherit the Earth
CASS 21	Violent video games or movies are often over far too soon
CASS 22	When a person's freedom is threatened, they should fight back
CASS 23	The weak are valuable
CASS 24	Violence is the most effective strategy in most situations

Table 4. Classification of Aggressive Behaviors, Aggressive Affect, and Low Agreeableness

CASS 25	Feelings of personal effectiveness and the power to control others go hand in hand
CASS 26	The victim has more options than the victor
CASS 27	Those who don't fight back are usually those who are also poor at fighting
CASS 28	Many people would hurt you if they could
CASS 29	The sight of others being hurt or killed on television does not upset me as it once did
CASS 30	One must be the master of one's world to keep the wolves at bay
CASS 31	If I let them, others would try to control my life
CASS 32	The world is full of people trying to take what other people have
CASS 33	Violent movies or games leave me wanting more
CASS 34	I have carried a weapon for my own protection
CASS 35	The most aggressive team controls the game

Aggressive Affect ($\alpha = .84$)

Item	Phrasing
BPAQ 15	I flare up quickly but get over it quickly
BPAQ 16	When frustrated, I let my irritation show
BPAQ 17	I sometimes feel like a powder keg ready to explode
BPAQ 18	I am an even-tempered person
BPAQ 19	Some of my friends think I'm a hothead
BPAQ 20	Sometimes I fly off the handle for no good reason
BPAQ 21	I have trouble controlling my temper
TEQ 3	I often find public displays of affection annoying
TEQ 4	I tend to get emotionally involved with a friend's problems
TEQ 18	I get very angry when I see someone being ill-treated
TEQ 28	I become more irritated than sympathetic when I see someone's tears
VS 8	I find it easy to forgive those who have hurt me
VS 13	People who insist on getting revenge are disgusting
VS 19	To have a desire for vengeance would make me feel ashamed
VS 20	Revenge is sweet
IPAS 1	I think the other person deserved what happened to them during some of the incidents
IPAS 2	I am glad some of the incidents occurred
IPAS 3	I wanted some of the incidents to occur
IPAS 7	I felt my outbursts were justified
IPAS 11	Anything could have set me off prior to the incident
IPAS 14	I feel I lost control of my temper during the acts
IPAS 17	When angry, I reacted without thinking
CASS 16	Revenge is sweet
CASS 20	When I feel powerless I also feel angry

Using these factors, correlational analyses were run with re-appraisal. Results are presented in Table 5 and show that re-appraisal is negatively related to all of the aggressive behavior indices (*r*s > -.16, *p*s < .001) and aggressive affect ($r = -.20$, $p < .001$), but not low agreeableness ($r = -.06$, $p = .18$). A difference of correlation test in dependent samples showed that the relation between re-appraisal and aggressive affect ($r = -.20$) was significantly different, $t(429) = -3.98$, $p < .05$, than the correlation between re-appraisal and low agreeableness ($r = -.06$), albeit the high degree of colinearity between aggressive affect and low agreeableness ($r = .72$).

Table 5. Correlations between Relevant Variables

	1	2	3	4	5	6	7	8	0
1	----								
2	-.19**	----							
3	-.32**	.55**	----						
4	-.27**	.53**	.81**	----					
5	-.16**	.76**	.63**	.47**	----				
6	-.29**	.80**	.84**	.93**	.65**	----			
7	-.20**	.70**	.44**	.46**	.64**	.63**	----		
8	-.06	.72**	.46**	.50**	.57**	.67**	.72**	----	
9	-.07	.36**	.20**	.26**	.29**	.34**	.15**	.29**	----
Mean	29.02	.03	-.04	-.13	-.02	-.27	-.004	.82	-.32
StDev	7.67	8.02	6.64	6.78	7.31	15.54	10.77	25.48	.95

** $p < .01$, * $p < .05$

1 = Re-appraisal, 2 = Impulsive Aggressive Behavior, 3 = Premeditated Aggressive Behavior, 4 = Unspecified Aggressive Behavior, 5 = Verbal Aggression, 6 = Aggressive Behavior, 7 = Aggressive Affect, 8 = Low Agreeableness, 9 = Sex (1 = Male, -1 = Female).

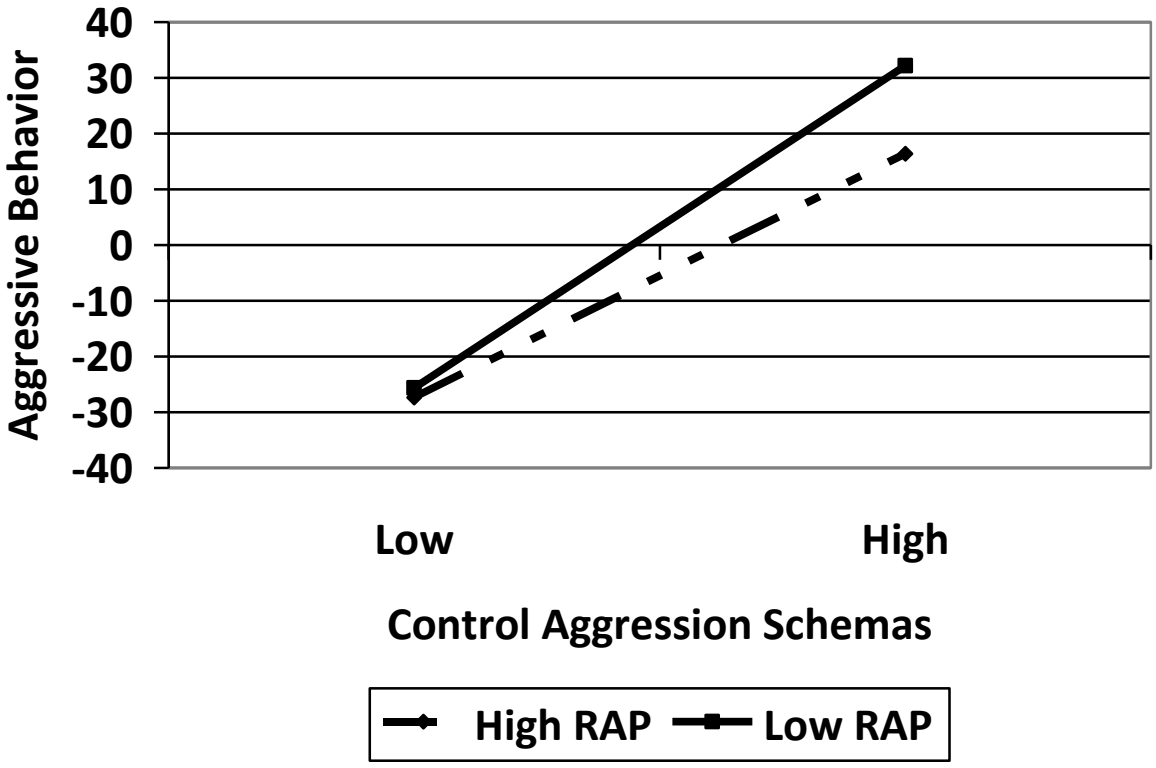
Conclusion

Results from the correlational analyses tell a consistent story. Re-appraisal is negatively related to aggression-related variables. Specifically, re-appraisal was negatively related to a variety of aggression indices including, aggressive behavior and aggressive affect, but was not related to low agreeableness.

Testing Moderation

Moderation was tested by creating interaction terms between the centered re-appraisal score and other (centered) predictor. Linear regressions tested the main effects for re-appraisal and the predictor by entering them into the first step. The two-way interaction was entered into the second step. If a significant interaction was found, the interaction was probed by selecting cutoff points for high (+1 SD) and low (-1 SD) levels of re-appraisal and regressing the dependent variable onto the predictor variable at each level of that re-appraisal.

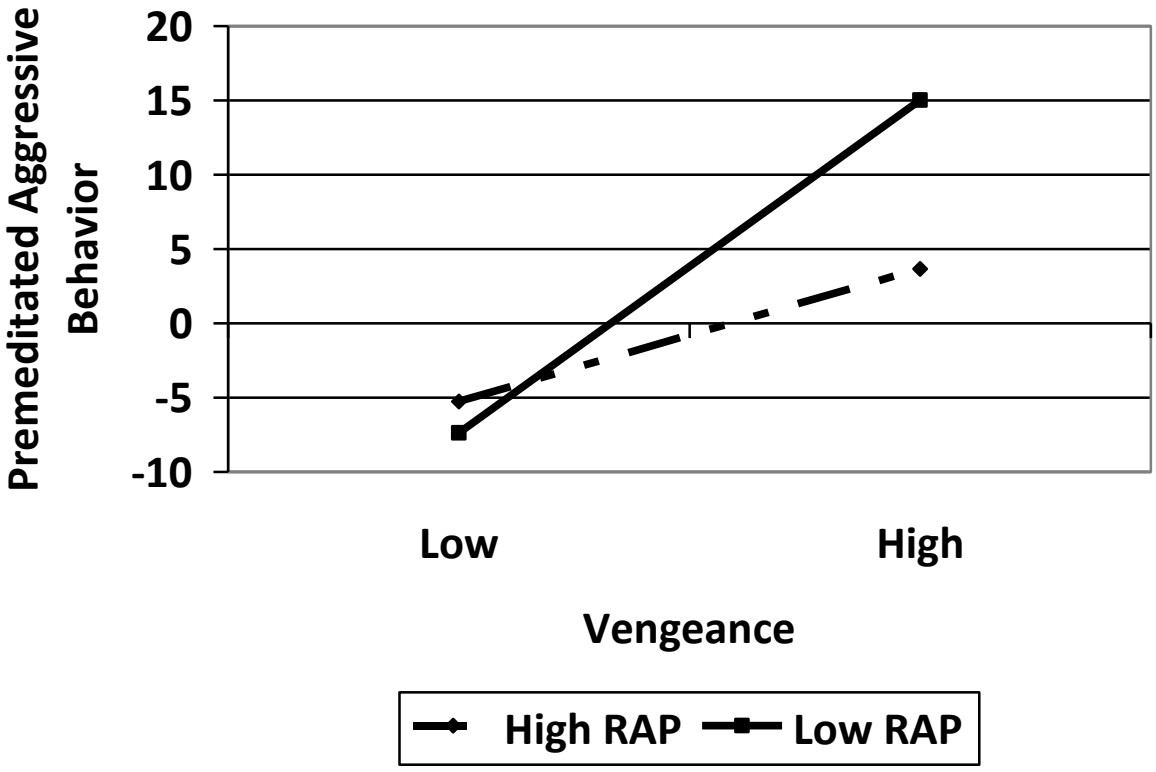
Control Aggression Schemas. There was a significant control aggression schema X re-appraisal interaction for aggressive behavior, verbal aggression, unspecified aggression, and premeditated aggression. In all cases, results showed that control aggression schemas were related to aggressive behavioral indices, but this relation was lower at high levels of re-appraisal (see Figure 7 for the interaction with aggressive behavior). The figures for all the other indices of aggressive behavior were similar (see Tables 6 and 7 for specific findings). These results were not found for impulsive aggressive behavior.



Note: Rap = Re-Appraisal

Figure 7. Re-appraisal X Controlled Aggression Schema Activation for Aggressive Behavior

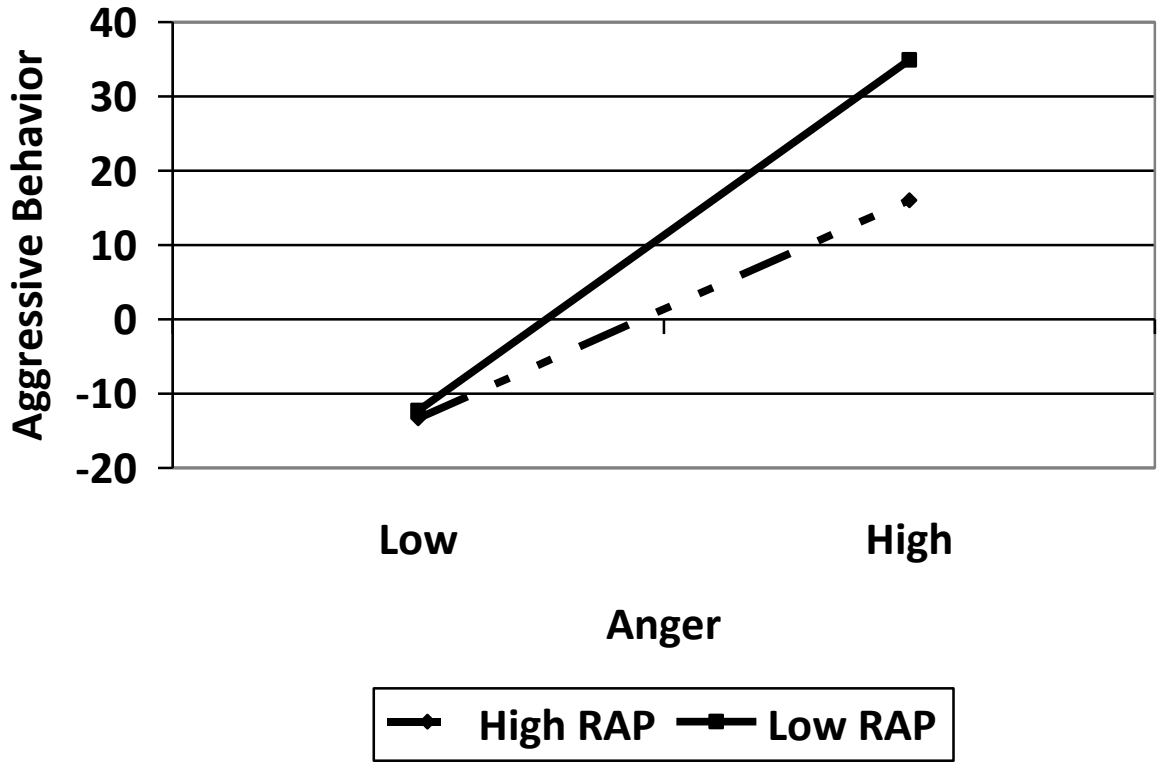
Vengeance. There was a significant re-appraisal by vengeance interaction for premeditated aggressive behavior and unspecified aggressive behavior. In all cases, results showed that as re-appraisal increased, the relation between vengeance and aggressive behavior decreased (see Figure 8 for the interaction for premeditated aggressive behavior). The results were similar for unspecified aggressive behavior. This interaction was non-significant for aggressive behavior, verbal aggression, and impulsive aggression.



Note: Rap = Re-Appraisal

Figure 8. Re-appraisal X Vengeance for Premeditated Aggression

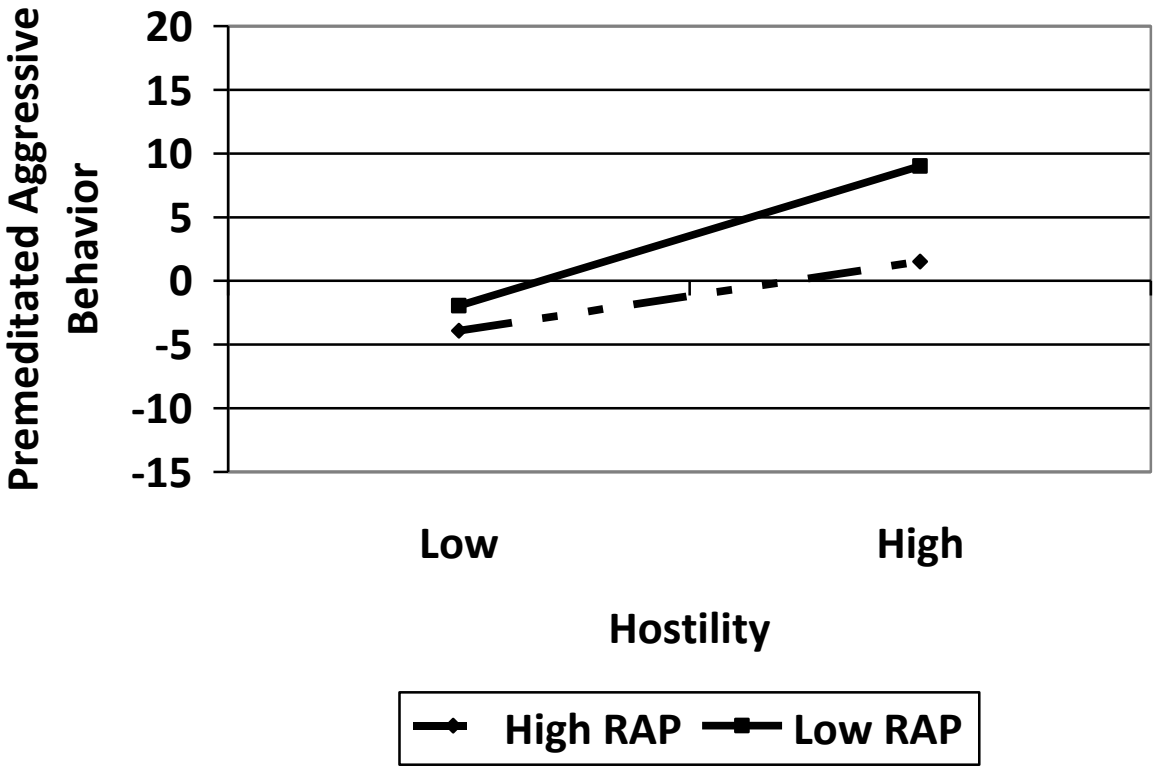
Trait Anger. There was a significant re-appraisal by anger interaction for premeditated aggressive behavior, aggressive behavior, and unspecified aggressive behavior. Results showed that as re-appraisal increased, the relation between trait anger and aggressive behaviors decreased (see Figure 9 for the interaction with aggressive behavior). These interactions were not found for verbal or impulsive aggression.



Note: Rap = Re-Appraisal

Figure 9. Re-appraisal X Trait Anger for Aggressive Behavior

Trait Hostility.There was a significant re-appraisal by hostility interaction for premeditated aggressive behavior. Results showed the relation between hostility and premeditated aggressive behavior was highest for those lowest on re-appraisal and were hostile. (see Figure 10). No other interactions were significant.



Note: Rap = Re-Appraisal

Figure 10. Re-appraisal X Trait Hostility for Premeditated Aggressive Behavior

Table 6. Results from the Re-appraisal (RAP) Interaction in the Moderator Analyses

Moderator	DV	Effect	B	t
CASS	Aggressive Behavior	RAP	-.61	-6.55**
		CASS	.38	12.48**
		RAP X CASS	-.01	-1.99*
CASS	Verbal Aggression	RAP	-.20	-4.14**
		CASS	.16	9.84**
		RAP X CASS	-.004	-2.28*
CASS	Unspecified Aggression	RAP	-.24	-5.43**
		CASS	.10	7.06**
		RAP X CASS	-.005	-2.53*
CASS	Premeditated Aggression	RAP	-.32	-7.61**
		CASS	.11	7.44**
		RAP X CASS	-.005	-3.00**
Vengeance	Unspecified Aggression	RAP	-.17	-3.97**
		Vengeance	.16	8.71**
		RAP X Vengeance	-.004	-2.14*
Vengeance	Premeditated Aggression	RAP	-.20	-4.93**
		Vengeance	.14	8.25**
		RAP X Vengeance	-.01	-4.10**
Anger	Unspecified Aggression	RAP	-.20	-4.82**
		Anger	.37	8.17**
		RAP X Anger	-.02	-3.68**
Anger	Premeditated Aggression	RAP	-.23	-5.91**
		Anger	.34	8.07**
		RAP X Anger	-.02	-3.58**
Anger	Aggressive Behavior	RAP	-.45	-4.86**
		Anger	1.09	11.18**
		RAP X Anger	-.03	-2.70**
Hostility	Premeditated Aggression	RAP	-.26	-6.29**
		Hostility	.20	6.09**
		RAP X Hostility	-.01	-2.12*

Table 7. Conditional Effects of Re-appraisal (RAP) on Dependent Variables (for significant interactions)

IV	DV	RAP	*B*	*t*
CASS	Aggressive Behavior	High	.33	8.05**
		Low	.43	10.79**
CASS	Verbal Aggression	High	.13	6.07**
		Low	.19	8.99**
CASS	Unspecified Aggression	High	.07	3.63**
		Low	.14	7.02**
CASS	Premeditated Aggression	High	.07	3.73**
		Low	.14	7.70**
Vengeance	Unspecified Aggression	High	.12	5.08**
		Low	.19	8.04**
Vengeance	Premeditated Aggression	High	.08	3.51**
		Low	.20	9.04**
Anger	Unspecified Aggression	High	.21	3.22**
		Low	.53	8.77**
Anger	Premeditated Aggression	High	.20	3.35**
		Low	.47	8.59**
Anger	Aggressive Behavior	High	.14	5.97**
		Low	1.35	10.29**
Hostility	Premeditated Aggression	High	.13	2.81**
		Low	.27	6.04**

Conclusion

Overall, results from the moderation tests revealed that re-appraisal acted as a protective factor in the relation between various aggression-related variables and several indices of aggressive behavior. Specifically, results showed that the relation between hostility, anger, vengeance, and control aggression schemas and various indices of aggressive behavior was lowest when re-appraisal was the highest. In other words, the slope of the lines relating aggression-related independent variables to aggressive behavior was lowest at high levels of re-appraisal. However, it should be noted that the relations between these aggression-related variables and the aggressive behavior dependent variables remained significant even at high

levels of re-appraisal. This suggests that although re-appraisal is important at helping reduce such relations, it will not break the strong relation between aggression-related independent variables and aggressive behaviors while using self-report data in a cross-sectional design.

CHAPTER 10. CONCLUSION: STUDY 1

This study tested several theoretically important questions. First, what is the relation between re-appraisal and aggression? Consistent with GAM, ICMTA, and emotion regulation theories, results showed that re-appraisal was negatively related to aggressive affect and aggressive behaviors.

Second, can re-appraisal moderate the relation between aggression-related predictors and aggressive behaviors? Results tended to show that the relation between control aggression schemas, trait anger, trait hostility, vengeance, and normative aggressive beliefs and aggressive behaviors was moderated by re-appraisal. In all cases, re-appraisal acted as a protective factor between these aforementioned variables and aggressive behavior. These analyses showed that at high levels of re-appraisal, the slope relating the aforementioned aggression-related variables to aggressive behavior was lower than the slope of the line relating aggression-related variables and aggressive behavior at low levels of re-appraisal. It appears as though the relation between re-appraisal, aggression-related predictors, and aggressive behaviors is complex and depends on the specific type of aggressive behavior measured and the aggression-related variable. However, the significant interactions showed that re-appraisal is a protective factor in the relations between the aggression-related independent variables and aggressive behavior.

CHAPTER 11. CONCEPTUAL OVERVIEW AND HYPOTHESES: STUDY 2

Conceptual Overview

The objective of Study 2 was to test several hypotheses in the relation between re-appraisal and aggressive behaviors using an experimental design. Study 2 utilized a 3 (feedback: praise, none, insult) X 2 (mitigating information: absent, present) X 2 (behavior: hurtful, helpful) mixed experimental designed with the last factor as the within subjects factor. The use of mitigating information was used to cue re-appraisal at the state level. The mediating influence of anger, revenge motivations, positive affect, and negative affect was tested.

Hypotheses

Several hypotheses were tested in the current study. First, there will be a main effect of feedback on aggression. Those who are provoked are predicted to aggress more than those who do not get any feedback or those who are praised. Second, there will be a significant feedback X information interaction on aggressive behavior. Those who get provoking feedback, but also receive mitigating information will be less likely to aggress compared to those who get the provocation feedback without the mitigating information. Third, a significant three-way interaction (feedback X information X behavior) will be found. The aforementioned two-way interaction from hypothesis three will show an opposite pattern of responding for prosocial behavior. Those who get praised with mitigating information should be more aggressive and less helpful than those who are praised without the information. Fourth, negative affect, positive affect, revenge motivations, and anger will significantly mediate the relation between re-appraisal and aggressive behavior. Finally, trait levels of re-appraisal are expected to moderate these aforementioned mediated relations.

CHAPTER 12. STUDY 2 RESEARCH METHODS

Participants

Three hundred forty-three participants (43% male) from a large Midwestern University participated in Phase 1 of the current study for partial course credit in their psychology classes. The average age of the participants was 19.77 (*SD* = 2.15) years. The majority of the participants were Caucasian (80%), which is typical of the demographic at the university. All participants were treated in accordance with the APA ethical guidelines. Of the 343 Phase 1 participants, 235 (42% male) participated in Phase 2.

Phase 1: Questionnaire Completion

The purpose of Phase 1 was to measure relevant personality variables that may moderate the relation between re-appraisal and aggressive behavior. It was important to separate the entire experiment into phases because this reduces the chances of demand characteristics or suspicion influencing the results. Demand characteristics and suspicion could be a serious issue if the study was not separated into phases, because if participants completed measures of aggression (and other variables related to aggression) and then engaged in an aggression task, the purpose of the study may become transparent.

Measures

The BPAQ (α = .92), IPAS (α = .82), VS (α = .91), RAS (α = .87), CASS-R (α = .83), TEQ (α = .83), and demographic questionnaires used in Study 1 also were used in the current study.

Procedure

Participants signed up for a study called: Decision Making and Partner Performance with Puzzles. All participants earned one research participation credit for their 50 minutes of time to

complete the questionnaires. Upon completion of the informed consent, participants completed the aforementioned questionnaires. In addition, the participants provided their email address in order to match their responses on these questionnaires to their answers in Phase 2 of the experiment.

Phase 2: Laboratory Session

The purpose of Phase 2 was to test: a) the main effect of mitigating information on aggressive behavior, b) the main effect of provocation on aggressive behavior, c) any complex statistical interactions with potential moderators, and d) the mediating effect of emotions in the relation between provocation, re-appraisal, and aggressive behavior.

Measures

The demographic questionnaire from Phase 1 was used in addition to the following measures and tasks:

Aggressive and Prosocial Behavior. Aggressive and prosocial behavior was assessed using the tangram task, developed by Gentile et al. (2009). This task instructs participants that their "partner" has to solve a number of puzzles that the participant will choose for them. These tangram puzzles are based on several differently shaped pieces to form a specific outlined shape. Outlines that require many pieces (six or seven pieces) are harder and more time consuming to complete compared to the medium or easy puzzles. Overall, there are 30 tangram puzzles (10 easy, 10 medium, and 10 hard; see Appendix K). Participants were asked to select 11 of the possible 30 puzzles for their partner to solve. The participant was instructed that if the partner can solve 10 of the 11 tangrams in 10 minutes their partner would win a $25.00 gift certificate to a local establishment in town, but if they do not solve 10 of the 11 puzzles, then they do not receive the gift certificate. Aggressive behavior was operationalized as the number of hard

tangrams selected. Prosocial behavior was operationalized as the number of easy tangrams selected. Because there are 10 puzzles of each difficulty and the participants are to choose 11 tangrams, participants have to choose from at least two of the different categories of tangram difficulty.

State Aggressive Affect. In order to measure aggressive feelings, a modified version of the State Hostility Scale (SHS; Anderson, Deuser, & DeNeve, 1995) was used. The original scale is a 35-item questionnaire that asks participants to respond to how they are feeling at the current moment on a 1 (*not at all*) to 5 (*extremely*) rating scale. Sample items include, "I feel like yelling at someone" and "I feel mean." Certain items are reverse scored and summed such that higher scores indicate higher levels of state hostility. This scale was modified by removing two negative items and adding several positive items in order to create an equal number of negatively and positively valenced items. This was done to reduce possible suspicion for those in the provocation condition. The new scale consisted of 42 items. Twenty-one of the items were positively valenced and 21 were negatively valenced. Although the entire 42-item scale was administered, only two subscales of this questionnaire was analyzed: feeling mean (items: mean, like yelling at somebody, cruel, like I'm about to explode, burned up, bitter, offended, angry, outraged, enraged, like swearing, like banging on a table, mad, and disagreeable; $\alpha = .94$) and aggravation (items: frustrated, aggravated, discontented, irritated, vexed, furious, and stormy; $\alpha = .87$; see Anderson & Carnagey, 2009). See Appendix L for the full scale and the items from the two subscales.

Partner Rating Form. In order to determine how the participants perceived their partner, a partner rating form was used (adapted from Dill & Anderson, 1995). This is a six item questionnaire that asks participants to rate their partner on several dimensions (e.g., intelligent,

skillful, competent, helpful, kind, and warm) on a 1 (*strongly disagree*) to 7 (*strongly agree*) rating scale (α = .90). These items were reverse scored and summed such that higher scores indicate that the participant was more negative toward their "partner." See Appendix M.

Revenge Motives. In order to measure one's motives to aggress, or the reason why the participant's gave the specific tangrams to their "partner", a five item questionnaire was used to assess motives to aggress (adapted from Anderson & Murphy, 2003). This questionnaire asks participants how much they wanted to hurt their partner on a 1 (*not at all*) to 5 (*a lot*) rating scale. A sample item includes, "I wanted to make my partner mad." Items were summed such that higher scores on these items indicate more aggressive motives (α = .76). See Appendix N.

Need for Cognition. In order to assess trait levels of need for cognition, the Efficient Need for Cognition Scale (Cacioppo, Petty, & Kao, 1984) was used. This is an 18-item questionnaire that asks participants to respond to each item using a 1 (*extremely uncharacteristic of you (not at all like you)*) to 5 (*extremely characteristic of you (very much like you)*) rating scale. A sample item includes, "I would prefer complex to simple problems." Certain items were reverse scored and then summed, such that higher scores indicate higher need for cognition (α = .89). See Appendix O.

Need for Closure. In order to assess trait levels of need for closure, the Need for Closure Scale (Webster & Kruglanski, 1994) was used. This is a 47-item questionnaire that asks participants to indicate their level of agreement with the items on a 1 (*strongly disagree*) to 6 (*strongly agree*) rating scale. A sample item includes, "I usually make important decisions quickly and confidently." Certain items were reverse scored and summed, such that higher scores indicate higher need for closure (α = .83). See Appendix P.

Positive and Negative Affect. In order to measure state positive and negative affect regarding why the participant's decided to select certain puzzles at the tangram task, the modified Watson, Clark, and Tellegen's (1988) Positive Affect Negative Affect Schedule (PANAS) was used. This is a 20-item questionnaire that asks participants to rate how they are feeling at that moment on a 1 (*very slightly or not at all*) to 5 (*extremely)* rating scale. Ten of the items represent positive affect (Interested, Excited, Strong, Enthusiastic, Proud, Alert, Inspired, Determined, Attentive, Active; $\alpha = .91$) and ten items represent negative affect (Distressed, Upset, Guilty, Scared, Hostile, Irritable, Ashamed, Nervous, Jittery, Afraid; $\alpha = .87$). These items are summed together for their respective affective subscales. Higher scores indicate higher levels of positive or negative affect. This scale was modified by altering the instructions, such that participants responded to these items regarding why they decided to select the tangrams they did for their partner. See Appendix Q.

Procedure

Upon their arrival in the laboratory, the participant was greeted by two experimenters and asked to complete the informed consent. Then participants were told by an experimenter that:

"Today you will be doing a whole bunch of tasks with a partner today. The first is going to be an essay writing task. What you are going to do here is you are going to be in charge of writing an essay that your partner will go ahead and grade or evaluate on a whole host of dimensions, including argument strength, organization, and so on. The second task is going to be the primary task of the study and that is going to be a group decision making task. Here you will be in charge of assigning a certain set of puzzles for your partner to go ahead and complete.

Now, you partner is not here yet, as you are the only one in this room that is not a researcher. You were supposed to come in on the hour and your partner is not supposed to get here until about fifteen after the hour, assuming they show up. We did this on purpose. We also set it up on purpose so that you and your partner never see one another throughout the entire study. We did these things on purpose because, like I have said before, this is a group decision making study. And let's say you see your partner and you recognize them from outside the lab, and for some reason you two don't like each other. That could affect the results in a negative way. Like I said, this is a group decision making study and the decision of the group will be hurt if the group

doesn't already like each other. So, to protect the validity of our results you and your partner will never see one another, but you will be interacting with each other on these two tasks.

Research has shown that for group decision making, it is going to be a little easier for you and your partner to complete these tasks if you get to know one another. It is like doing a task with an acquaintance versus a stranger: you are going to do a little better with the acquaintance because you know something about them. So, we are going to have you and your partner benefit from that and right before the decision making task you two will both have a conversation with each other to ask each other questions and get to know one another. However, like I said before, you can't see each other. So, the way I have gotten around this is I have installed MSN messenger on your computer and your partner's computer. This will allow you guys to chat with one another and ask each other questions which will help you both out on the puzzle part, still without seeing each other. Do you have any questions?"

Participants were then instructed on how to complete the puzzle making task by telling them:

"Before we get started with the essay writing, we are going to have you practice the puzzle making part now. We are going to do it now because we are not going to have time later once we get the study going and there is more room out here.

Are you familiar with tangrams? Tangrams are these pieces here [show them the pieces and get the packet out]. Your job is to assign 11 of these puzzles for your partner to complete. Your partner is going to take these pieces here [dump the pieces out on the desk] and use them to fill in the outlined shape just like I am doing here [Experimenter solves the first tangram]. Now let's have you try the bottom one so you can get an idea of how easy or difficult these things are for you to complete."

The participant completed one tangram for practice and then was told:

"So, that was just a practice so you can get an idea of how easy or difficult these puzzles are for you. This is what we call a medium difficulty puzzle because you used the majority of your pieces, but you still have some left over. Now, others are going to be more difficult and require all if not most of all the pieces [point to the tangrams on the second page], and still others that only require a few pieces [point to the tangrams on the third page]. Like I said before, your job is to assign 11 of these for your partner to solve. Now, if they solve 10 out of the 11 of them in 10 minutes, they are going to win a 25 dollar gift card to a local establishment here in town. That is their incentive for trying at this group decision making task, rather than them just sitting at their desk the entire time. Now, you are going to have the opportunity to complete puzzles just like this at the end of the study; however, you are not going to be eligible to win the gift card. The reason for this is that one of the variables we are interested in is if awareness of a potential prize influences group decision making. Therefore, you have just been told about the gift card and the fact that it exists and your partner will not be told anything about the gift card at all. That was random and you just got unlucky with that. Any questions about the puzzles?"

All participants were then led into a cubicle and asked to write an essay about the topic of abortion (see Appendix R for the form). Participants were told:

"So, now we are going to get you ready for the first part which is the essay writing part. Take all of your stuff and we are going to get you in that cubicle over there. You are going to write a short essay on the topic of abortion. You may choose to write either a pro-life or pro-choice stance but please be sure to label on top which side you are taking and use the space down here to defend why you feel that way. A couple of things: 1. Remember your name is not on this and your partner will never see you, so don't be afraid to write how you really feel without having to worry about anything. 2. Like I said before, your partner is going to grade this on a whole host of dimensions, so we are going to ask that you write at least three sentences, so your partner has something to grade. Finally, just to make sure we get you out of here on time, we are only going to give you 5 minutes to write this essay. So, as soon as I shut the door, I will start the timer and come back in 5 minutes to get the essay."

This essay writing task was chosen because it has been shown to be a valid method to establish a bogus feedback situation. Participants had five minutes to write their essay.

After the essay was written, the experimenter explained the following to the participants:

"OK, time is up and you can finish the sentence that you are on if you are in the middle of one. Now, your partner is here, but we have yet to let them in the room. That is a strategic timing thing and we know what we are doing there. Next, we are going to get your partner in the room and they are going to have to go through the introductory things that you just went through. Then, they have some questionnaires to complete and then they will grade your essay. I do not know how long this is going to take, since I don't know how long it takes them to grade these essays and fill out questionnaires. So, while you are waiting we are going to have you fill out some questionnaires of your own and when you are done you can open the door and we will see where everyone is at. Please click the next button. Please click the yes and next button. Eventually, you will get to a webpage that says 'Please stop and let the experimenter know.' When you see that page that is your cue to open up the door and we will go from there."

The participants then completed the demographic questionnaire (including writing their email address to match the data from Phase 1), need for cognition, and need for closure. During this time, the researcher randomly assigned participants to one of six conditions in the overall 3X2 design. The first condition is the provocation, no information condition; the second condition is the provocation, information condition; the third condition is the praise, information condition; the fourth condition is the praise, no information condition; the fifth condition is the

no feedback, information condition; and the sixth condition is the no feedback, no information condition (see Figure 11).

		Feedback	
INFORMATION	Provoke , Information *n* = 40	None, Information *n* = 42	Praise, Information *n* = 40
	Provoke, No Information *n* = 38	None, No Information *n* = 37	Praise, No Information *n* = 38

Figure 11. Outcome of Random Assignment to Conditions in 3X2 Design

When the participant opened the cubicle door, to indicate that he/she had completed the questionnaires, the experimenter explained the following:

"Are you all done with the questionnaires? Good. We got your partner through all the introductory stuff and they are either still completing questionnaires or still grading your essay. I have no idea which, but I know they have not yet opened the door. They shouldn't take too much longer, but at this point we are going to get you ready for the instant messaging part. When your partner finishes grading your essay I am going to take the grades and enter them in the computer. During that time, you two will chat with one another. So, if you would please minimize that screen [referring to the Internet screen] and leave the computer just like that. Now, a couple of rules with the messaging I am going to tell you and your partner. First, do not give out your name nor should you ask for theirs. We have to keep everything anonymous in here. Second, you don't know who your partner is and they are basically a stranger to you. So, please do not ask or say anything weird or inappropriate. Third, wait for them to contact you because they are still obviously working on something and you don't want to interrupt them if they are still grading your essay. Finally, we are going to ask that you do not say anything about the gift card because you know about it and your partner does not (this was whispered). So, as soon as those grades are entered, I will be back to start the puzzle part."

These four rules were given to further the believability of having a partner. When the door was shut, the experimenter walked over to the computer and opened MSN messenger. The

experimenter waited approximately one minute and then began to chat with the participant. All participants, independent of condition received the following text over MSN:

"So, I guess you are my partner, HI"

[Wait for response]

"Umm, I don't know what I need to ask. What is your major, I guess?"

[Wait for response]

"Oh that is cool. I am a psych major. What year are you in school?"

[Wait for response]

"Well, I am like a junior. I really want to go to grad school, you know. So, I am trying to get as much experience doing research as I can. My advisor says graduate schools really like that. I am trying to be a researcher in this lab, actually. I hope I get in."

Immediately before the final sentence was sent to the participant, the experimenter talked outside the cubical door, stating:

"We are all done with the essay data entering. We are now going to get you ready for the next part, which is the puzzle part of the study. So, you can stop chatting with the partner now. Your partner has a few short questionnaires to complete and then they are going to assign you some puzzles. So, wait patiently and I will be right back when that is completed."

This was done to increase believability. The researcher really talked to nobody, but the idea was to have participants hear these words, so they thought the researcher was talking to someone. When this was over, the researcher opened the participant's cubicle door and signaled to the other researcher to send the final message:

"Oh, the experimenter is back and is telling me to tell you bye. So, ttyl [this stands for talk to you later in texting language]."

The experimenter then opened the door and told the participants that the essay grades have been entered into the computer and they would be engaging in the puzzle task. For those in

the praise and provocation conditions, the researcher showed them their feedback and allowed them a few seconds to look it over. Those in the praise condition were given high marks and told that their essay was one of the best essays they had ever read and those in the provocation condition were given low marks and told that their essay was one of the worst written (see Appendix S). The feedback was given back to the researcher and then the following was explained to them:

"I need to take that feedback back for our records. Now we are going to get your ready for the puzzle part. This is called the Tangram Assignment form. Your job is to circle 11 of these for your partner to solve. Please note that your name is not on this, so feel free to select a range of tangrams if you prefer, but ultimately it is up to you. Whichever 11 you select, those are the ones we are going to take for your partner to solve. However, before we have you do this, we are going to have you fill out some questionnaires first. So, you can go ahead and exit out of the MSN messenger. Open that Internet tab back up and click the yes and next button. I believe you have 5 really short questionnaires to fill out. When you are done with that you will see a screen that tells you to select your tangrams. So, do the questionnaires first, this tangram sheet second, and then open the door when you are all done."

All participants were told to completely close the MSN chat dialogue. While the next sequence of events was described to the participants, the researcher signaled to the other researcher to send the mitigating information for those in the information conditions. Those who were in the provocation condition received the following information over MSN messenger:

"Hey are you there? If you are, I just wanted you to know that the reason I graded your essay the way I did was because I broke up with my boyfriend last night :@"

or

"Hey are you there? If you are, I just wanted you to know that the reason I graded your essay the way I did was because I broke up with my girlfriend last night :@"

Those in the praise condition received the following information over MSN messenger:

"Hey are you there? If you are, I just wanted you to know that the reason I graded your essay the way I did was because I got a raise at work last night :)"

Those in the no feedback condition were given the following information over MSN messenger: "Hey are you there? If you are, I just wanted you to know that the reason I graded your essay the way I did was because I feel like I am in a OK mood"

Although the information is not consistent across conditions, the information had to be plausible for the feedback given. It would not make sense to tell provoked participants that the only reason their essay was graded poorly was because they were in a good mood because of a raise. Also, emot-icons were added for those in the provoked-mitigating information and praised-mitigating information conditions to add extra emphasis on the emotional feelings of their anger or enjoyment contributing to the grades given on the essay task. Those in the no feedback-information condition did not see an emot-icon to keep this feedback as neutral as possible. Finally, this information was sent to the participants via MSN messenger, the same MSN messenger that we had participants close. This was done because when a new message appears over MSN after the program is closed, the new message suddenly pops up on the screen and blinking lights appear. This makes the new information salient to the participant to read, and serves as a check to see if the participant's actually read the information (unread messages will remain blinking until they are read).

Participants then completed the modified State Hostility Scale, PANAS, and revenge motivations. Then, participants circled 11 tangrams for their partner to complete. When these scales were completed and the participant opened the door, the participant was informed that his/her partner had 10 minutes to try to complete these tangrams and to wait patiently until he/she is done.

The experimenter left the room and returned ten minutes later with a clip board with a sheet of paper with two check boxes on it. The first check box stated that the "partner"

completed the tangrams and the other check box stated that the "partner" did not complete the tangrams chosen for them. The latter check box was always checked and this information was told to the participants. Then the participants completed the partner rating form. When this questionnaire was completed, participants were given a funnel debriefing to measure suspiciousness (Appendix T) and then were thanked and fully debriefed.

CHAPTER 13. RESULTS: STUDY 2

Suspicious Participants. Several (40; 17%) participants from Phase 2 indicated suspicion with the procedures of the current study. Of those, 22 did not believe there was another partner, 12 thought the researchers told their partner to grade the essay a certain way, four thought the partner gave a bad review to purposefully receive hard puzzles, and two learned about the essay manipulations in a class. Due to possible participant bias and demand characteristics, these participants were not used in the primary analyses. This left 195 (43% male) participants for the primary analyses[1]. See Table 8.

Table 8. Suspicion Breakdown for the Entire Sample

Classification	Reason	Total N (%)	Males	Females
Not Suspicious		195 (83%)	83	112
Suspicious		40 (17%)	16	24
	No partner	22 (9%)	9	13
	Researcher told to grade a certain way	12 (5%)	4	8
	Graded to get hard puzzles	4 (2%)	2	2
	Learned in class	2 (1%)	1	1
Total N (phase 2)		235	99	136

Correlations. Zero-order correlations were computed and are displayed in Table 9. Consistent with Study 1, results showed that trait re-appraisal was negatively correlated with certain aggression-variables (i.e., premeditated aggression, vengeance, and negative partner evaluations; *r*s > -.20, *p*s < .05). Interestingly, trait re-appraisal was not related to the number of

hard and easy tangrams (*p*s > .05). Aggressive and prosocial behavior were negatively correlated (r = -.81, p < .001). Of interest to the current study, feedback was positively related to aggressive behavior (r = .22, p < .01) and negatively related to prosocial behavior (r = -.20, p < .01). As the feedback increased in negativity, aggressive behavior increased and prosocial behavior decreased. Feedback was also positively correlated with state aggression variables (i.e., negative partner ratings, mean, aggravated, and revenge motives; *r*s > .18, *p*s < .05). Information was uncorrelated with all variables. Table 10 shows the descriptive statistics for these measures.

Table 12. Correlations between Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	(1.00)														
2	-.01	(1.00)													
3	.23**	-.05	(1.00)												
4	-.22**	.04	-.81**	(1.00)											
5	-.05	-.03	-.06	-.02	(.87)										
6	.01	.07	.16*	-.14*	.05	(.75)									
7	-.06	-.12	.07	-.07	-.14	.11	(.83)								
8	-.01	-.09	.21**	-.10	-.18*	.21**	.49**	(.91)							
9	-.09	.00	.14	-.05	.14	.16	.40**	.43**	(.83)						
10	-.02	.03	-.13	.01	.27**	-.10	-.27**	-.36**	-.30**	(.83)					
11	.11	.05	.24**	-.18*	.07	.31**	.32**	.53**	.44**	-.24**	(.92)				
12	.12	.07	.16*	-.10	-.03	.20**	.32**	.57**	.42**	-.39**	.86**	(.86)			
13	.09	.02	.07	-.01	.05	.19*	.26**	.31**	.24**	-.12	.64**	.44**	(.81)		
14	.05	.07	.15*	-.13	-.03	.35**	.27**	.39**	.30**	-.12	.86**	.65**	.53**	(.81)	
15	.03	-.01	.31**	-.25**	.09	.26**	.20**	.41**	.33**	-.11	.83**	.55**	.35**	.61**	(.87)
16	.08	.00	-.06	.01	.13	-.04	.05	.08	-.04	.19*	-.04	-.12	-.07	-.06	.04
17	-.01	.03	-.06	.02	-.01	-.13	.04	-.13	-.10	.12	-.13	-.17*	.10	-.08	-.13
18	-.10	-.02	-.14	.12	.19**	-.11	-.03	-.18*	.01	.07	-.09	-.07	-.01	-.08	-.11
19	.07	.02	.14	-.12	.05	.09	.04	.10	.09	-.07	.16*	.06	.10	.12	.13
20	.16*	-.16*	.49**	-.37**	-.01	.12	.15*	.24**	.24**	-.21*	.32**	.26**	.20**	.25**	.27**
21	.41**	.08	.13	-.11	-.22**	.04	-.01	.10	-.15	-.17*	.02	.01	.09	.00	.00
22	.27**	.03	.29**	-.26**	-.09	.21**	.13	.30**	.21*	-.30**	.35**	.30**	.18*	.31**	.28**
23	.34**	.05	.28**	-.26**	-.12	.05	.03	.19*	.08	-.25**	.23**	.19*	.08	.15*	.19*
24	-.01	.05	-.08	.12	-.06	-.01	.11	.23**	.31**	-.41**	.14	.32**	.07	.05	.09

Table 12. Correlations between Variables

	16	17	18	19	20	21	22	23	24
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16	(.83)								
17	-.07	(.89)							
18	-.07	.24**	(.91)						
19	.05	-.04	.18*	(.87)					
20	-.03	-.05	.10	.39**	(.72)				
21	.12	.01	-.19*	.09	.09	(.90)			
22	-.06	-.11	-.17*	.53**	.47**	.29**	(.94)		
23	-.01	-.07	-.23**	.48**	.38**	.43**	.79**	(.87)	
24	-.11	.04	.08	.03	.14*	-.06	.06	.02	(1.00)

* * $p < .01$, * $p < .05$

Numbers in parentheses are the reliabilities

1 = feedback (1 = provoke, 0 = none, -1 = provocation), 2 = information (1 = yes, -1 = no), 3 = number of hard tangrams, 4 = number of easy tangrams, 5 = re-appraisal, 6 = impulsive aggression, 7 = premeditated aggression, 8 = vengeance, 9 = control aggression schemas, 10 = trait empathy, 11 = trait aggression, 12 = physical aggression, 13 = verbal aggression, 14 = anger, 15 = hostility, 16 = need for closure, 17 = need for cognition, 18 = positive affect, 19 = negative affect, 20 = revenge motivations, 21 = partner evaluations, 22 = mean, 23 = aggravated, 24 = sex (1 = male, -1 = female)

Table 13. Descriptive Statistics for Measures

Scale	Mean	(SD)	Min	Max	Range
Hard Tangrams	2.01	1.98	0.00	10.00	10.00
Easy Tangrams	5.14	2.98	0.00	10.00	10.00
Re-Appraisal	29.87	5.89	8.00	42.00	34.00
Impulsive Aggression	19.16	5.10	8.00	31.00	23.00
Premeditated Aggression	32.54	7.26	12.00	47.00	35.00
Vengeance	61.88	17.09	21.00	116.00	95.00
Control Aggression Schema	113.43	17.58	68.00	159.00	91.00
Trait Empathy	107.07	10.83	80.00	138.00	58.00
Trait Aggression	89.17	27.72	36.00	159.00	123.00
Physical Aggression	24.72	10.76	9.00	55.00	46.00
Verbal Aggression	17.67	5.58	6.00	35.00	29.00
Trait Anger	19.96	7.34	7.00	43.00	36.00
Trait Hostility	25.72	10.15	8.00	49.00	41.00
Need for Closure	155.81	17.06	104.00	198.00	94.00
Need for Cognition	59.68	10.70	26.00	87.00	61.00
Positive Affect	26.89	8.41	9.00	50.00	41.00
Negative Affect	13.23	4.81	6.00	40.00	34.00
Revenge	8.81	3.34	3.00	37.00	24.00
Evaluation	21.45	6.36	6.00	42.00	36.00
Mean	21.99	8.84	11.00	58.00	47.00
Aggravated	13.73	5.11	6.00	26.00	20.00

Aggressive and Prosocial Behavior. A 3 (feedback) X 2 (information) X 2 (behavior) mixed analysis of variance (ANOVA) was conducted with the latter factor being the within-subjects factor. Results showed a significant main effect of behavior, $F(1,189) = 82.07$, $p < .001$, $r = .55$. Overall, participants gave significantly more easy tangrams ($M = 5.14$, $SD = 2.98$) than hard tangrams ($M = 2.01$, $SD = 1.98$). All other main effects were non-significant (all Fs < 1.9). Results also showed a significant behavior X feedback interaction, $F(2,189) = 7.47$, $p < .01$. However, these effects were qualified by a significant three-way interaction, $F(2,189) = 4.42$, $p <$

.01. In order to probe this interaction, two 3 (feedback) X 2 (information) ANOVAs were conducted; one for the number of hard tangrams and the other for the number of easy tangrams.

Results from the ANOVA on the number of hard tangrams showed a significant main effect of feedback, $F(2,189) = 7.82$, $p < .01$. However, this was qualified by a significant feedback X information interaction, $F(2,189) = 3.94$, $p < .03$. A simple effects analysis was conducted to probe this interaction. Results showed that those who received mitigating information after being provoked ($M = 2.17$, $SD = 2.00$) chose significantly fewer difficult tangrams than those who did not receive information ($M = 3.60$, $SD = 2.38$), $F(1,189) = 7.76$, $p < .001$, $r = .20$. There was no significant main effect of information on those who were not given any information or who were praised (Fs < 1). See Table 11.

Table 11. Means, Standard Deviations, and Statistics for Aggressive Behavior across Conditions

Feedback	Information	Mean	StDev	*N*	*F*	*p*
Provoke	Yes	2.17	2.00	30	7.76	< .001
Provoke	No	3.60	2.38	25		
Neutral	Yes	1.86	1.77	35	.26	NS
Neutral	No	1.63	1.50	38		
Praise	Yes	1.80	2.03	37	.46	NS
Praise	No	1.47	1.80	30		

Results from the 3 (feedback) X 2 (information) ANOVA for the number of easy tangrams given showed a significant main effect of feedback, $F(2,189) = 6.22$, $p < .01$. However, this was qualified by a significant feedback X information interaction, $F(2,189) = 4.09$, $p < .02$. A simple effects analysis showed that those who received mitigating information after being provoked ($M = 5.01$, $SD = 2.96$) chose significantly more easy tangrams than those who did not receive information ($M = 3.00$, $SD = 2.06$), $F(1,175) = 14.97$, $p < .001$, $r = .28$. There was no significant main effect of information on those who were not given any information or those who were praised ($Fs < 1.6$). See Table 12.

Table 12. Means, Standard Deviations, and Statistics for Prosocial Behavior across Conditions

Feedback	Information	Mean	StDev	*N*	*F*	*p*
Provoke	Yes	5.01	2.96	30	7.03	< .01
Provoke	No	3.00	2.06	25		
Neutral	Yes	5.23	2.78	35	.02	NS
Neutral	No	5.32	2.92	38		
Praise	Yes	5.43	3.02	37	1.51	NS
Praise	No	6.30	3.24	30		

The overall findings from the 3 X 2 X 2 mixed ANOVA remained when sex, control aggression schemas, premeditated aggression, vengeance, trait re-appraisal, empathy, physical

aggression, verbal aggression, trait anger, trait hostility, need for closure, or need for cognition were entered into the model as covariates individually.

Effect of Feedback and Information on Other Key Variables.

Revenge Motives. A 2 (information) X 3 (feedback) ANOVA was conducted with motives to aggress as the dependent variable. Results showed a significant main effect of information, $F(1,187) = 6.54$, $p < .02$, $r = .18$. Those who received no information ($M = 9.37$, $SD = 3.98$) were more vengeful relative to those who received information ($M = 8.31$, $SD = 2.54$). There was also a main effect of feedback, $F(2,187) = 3.47$, $p < .04$. Pairwise comparisons with a Bonferonni correction showed that those who were provoked ($M = 9.69$, $SD = 4.30$) had significantly ($p < .014$) more revenge motives compared to those who were praised ($M = 8.32$, $SD = 2.70$). No significant differences ($ps > .05$) were found in any comparisons with the no feedback condition ($M = 8.62$, $SD = 2.95$) was given. No other main effects or interactions were significant.

Positive and Negative Affect. A 2 (information) X 3 (feedback) ANOVA was conducted with positive affect and negative as the dependent variable. Results showed no significant main effects or interactions ($Fs < 1.3$).

State Hostility: Mean. A 2 (information) X 3 (feedback) ANOVA showed a significant main effect of feedback, $F(2,183) = 9.52$, $p < .001$. A pairwise comparison with a Bonferonni correction showed that the provocation condition ($M = 26.19$, $SD = 9.77$) significantly differed ($ps < .001$) from the praise ($M = 20.03$, $SD = 7.46$) and no feedback conditions ($M = 20.64$, $SD = 8.33$), which did not differ from each other ($p = .62$). No other main effects or interactions were significant.

State Hostility: Aggravation. A 2 (information) X 3 (feedback) ANOVA showed a significant main effect of feedback, $F(2,187) = 13.88$, $p < .001$. A pairwise comparison with a Bonferonni correction showed that the provocation condition ($M = 16.47$, $SD = 4.89$) significantly differed (ps < .001) from the praise ($M = 12.05$, $SD = 4.71$) and no feedback conditions ($M = 13.16$, $SD = 4.83$), which did not differ from each other ($p = .15$).

Essay Evaluations. A 2 (information) X 3 (feedback) ANOVA showed a significant main effect of feedback, $F(2,185) = 18.11$, $p < .001$. A pairwise comparison with a Bonferonni correction showed that all three conditions significantly differed from each other (ps < .01). Those in the provocation condition gave the harshest feedback ($M = 25.00$, $SD = 6.34$), followed by the no feedback condition ($M = 21.59$, $SD = 5.50$), then by the praise condition ($M = 18.39$, $SD = 5.73$).

Multiple Mediation Tests

The Preacher and Hayes (2008) bootstrap confidence interval around the estimated product of coefficients mediation approach was used to test the meditational hypotheses of the current study. Because the independent variables were rank ordered (feedback and information) and interacted with one another for both the number of easy and hard tangrams, this created methodological problems using the traditional Preacher and Hayes (2008) method that prefers a continuous independent variable. Thus, to appropriately analyze this data, I ran identical multiple mediation tests for those who were provoked, praised, or given no feedback. In each analysis, whether the participant received information was the lone independent variable (coded as 1 = information, -1 = no information). In each analysis positive affect, negative affect, mean affect, aggravated affect, and revenge motivations were the mediators.

Provoked Participants. Results for the number of hard tangrams showed that the overall mediated model with all predictors was not significant (95% CI: -.9453 to .0688); however, revenge motivations significantly mediated this relation (95% CI: -.9574 to -.0780). Specifically, the relation between information and aggressive behavior was significant (B = -.76, t(45) = -2.44, p < .02), as was the relation between information and revenge motivations (B = -1.41, t(45) = -2.40, p < .03), and revenge motivations and aggressive behavior (B = .29, t(45) = 4.21, p < .001). The relation between information and aggressive behavior became non-significant while controlling for all mediators (B = -.41, t(45) = -1.59, p = .12). No other mediator was significant (see Table 16).

The same analysis was conducted with prosocial behavior (the number of easy tangrams) as the dependent variable. Results showed that the overall model with all predictors was non-significant (95% CI: -.4026 to .7159); however, revenge motives mediated this relation (95% CI: .0121 to .6547). Specifically, the relation between information and prosocial behavior was significant (B = 1.10, t(45) = 2.96, p < .01), as was the relation between information and revenge motivations (B = -1.41, t(45) = -2.40, p < .03); however, the relation between revenge motivations and prosocial behavior was marginal (B = -.16, t(45) = -1.74, p = .09). The relation between condition and prosocial behavior was still significant while controlling for all mediators (B = .93, t(45) = 2.69, p < .02) suggesting partial mediation. No other mediator was significant (see Table 13).

Non-significant mediation was found between information and aggressive or prosocial behavior for those who were praised or received no feedback[2].

Table 13. Mediators between Condition and Aggressive and Prosocial Behavior for Provoked Participants

IV	Mediator	DV	95% CI
Information	All Predictors	Aggressive Behavior	-.9453 to .0688
	Positive affect	Aggressive Behavior	-.2617 to .1768
	Negative affect	Aggressive Behavior	-.0820 to .2985
	Revenge Motives	**Aggressive Behavior**	**-.9574 to -.0780**
	Mean	Aggressive Behavior	-.5318 to .0569
	Aggravated	Aggressive Behavior	-.0527 to .1768
Information	All Predictors	Prosocial Behavior	-.4026 to .7159
	Positive affect	Prosocial Behavior	-.1778 to .4242
	Negative affect	Prosocial Behavior	-.3788 to .0843
	Revenge Motives	**Prosocial Behavior**	**.0121 to .6547**
	Mean	Prosocial Behavior	-.0872 to .6693
	Aggravated	Prosocial Behavior	-.7339 to .0647

Moderated Mediation.

Clearly, revenge motivations mediated the effect between information and aggressive behavior and prosocial behavior for only provoked participants. In order to test whether trait levels of re-appraisal moderated these mediated relations, two moderated mediation tests were conducted (one for aggressive behavior and one for prosocial behavior) using the Preacher, Rucker, and Hayes (2007) method. This approach uses bootstrapped estimates of the conditional indirect effect of the independent variable on the dependent variable through the mediator at different levels of the moderator. Specific to these analyses, information was used as the independent variable, revenge motives were the mediator, and trait re-appraisal was the moderator. According to Preacher et al. (2007), the moderator can have an effect on a mediated

model five different ways[3]. For the purposes of the current study, the effect of the moderator was only on the relation between the mediator and the dependent variable.

Results from the analysis with aggressive behavior for provoked participants showed significant moderated mediation. Specifically, the relation between information and revenge motives for provoked participants was significant (B = -1.33, $t(45)$ = -2.36, $p < .03$), as was the relation between revenge motives and aggressive behavior (B = 1.31, $t(45)$ =-2.61 $p < .02$), showing the indirect effect. However, this was qualified by a significant revenge motive X trait re-appraisal interaction (B = -.04, $t(45)$ = -2.12, $p < .04$). To probe this interaction, Preacher et al. (2007) suggested running the indirect effect analysis three times: one for those who scored below one standard deviation on trait re-appraisal, another for those who scored higher than one standard deviation on trait re-appraisal, and a third for those who scored in between plus and minus one standard deviation on re-appraisal. Results showed that the indirect effect of information to aggressive behavior through revenge motives was significant for only those low on re-appraisal ($B_{indirect\ effect}$ = -.52, $t(45)$ = -2.03, $p < .05$). This suggests that those who are not able to regulate their negative emotions using re-appraisal are more likely to be aggressive when no information is present after a provocation because of an increase in their revenge motives. Those who are better able to use re-appraisal effectively do not show this indirect effect. These effects were not found for prosocial behavior.

CHAPTER 14. STUDY 2: CONCLUSION

Overall, results from Study 2 support the hypothesis that re-appraisal, both as a trait measure and as a situation-induced process, is negatively related to aggressive behavior and positively related to prosocial behavior. Study 2 cued re-appraisal processes by presenting some participants with additional information regarding why they were either provoked or praised. Findings indicate that there were significant information by feedback interactions for aggressive behavior and prosocial behavior. More aggressive behavior was observed when participants were provoked and did not receive an excuse compared to those who were just provoked. This suggests that when additional mitigating information is provided, less aggressive behavior is observed. More prosocial behavior was observed when participants were praised without an excuse relative to those who were praised and then told why. This suggests that when additional information is provided that allows the participants to attribute their praise to factors other than themselves, more prosocial behavior is observed.

Consistent with emotion theories that emphasize the importance of re-appraisal at reducing negative emotions, our results show that the previously elaborated aggressive behavioral effects are significantly mediated by revenge motivations for only provoked participants. Thus, the reason why provoked participants who did not get any information were more likely to aggress compared to their counterparts who received the information is because of revenge motives. Furthermore, the results support the hypothesis that the re-appraisal cue (i.e., the information manipulation) influenced aggressive and prosocial behavior through its effect on affect, specifically, revenge motivation.

An important theoretical advancement was testing the moderating influence between the cognitive and attributional definitions of re-appraisal on aggressive behavior. Results suggest

that both definitions of re-appraisal operate similarly. Results showed that high cognitive re-appraisers were better able to use the mitigating information after a provocation to reduce their vengeance and aggressive behavior compared to low re-appraisers. Thus, an all encompassing aggression theory needs to take into account such interactions, as GAM does.

CHAPTER 15. CONCEPTUAL OVERVIEW AND HYPOTHESES: STUDY 3

Conceptual Overview

The purpose of Study 3 was to use the findings from Studies 1 and 2 and apply them to an aggression-reducing intervention with a focus on re-appraising the situation. If the predictions made by the decision processes of GAM and ICMTA are correct, teaching participants the power of re-appraising the situation should reduce aggression. The study used a 2 (time: baseline, post-test) X 2 (intervention: experimental, control) mixed experimental design with the first factor as the within-subjects factor. The control group did not receive the intervention. The experimental condition received the intervention over the course of eight weeks.

Hypotheses

First, I predicted that those participants who receive the re-appraisal intervention will have the largest increase in re-appraisal, especially for those who are low on re-appraisal at baseline. Second, it was predicted that those who are exposed to the experimental intervention will have the largest decrease in vengeance from baseline to post-test. Those who do not have the experimental intervention will have no change in vengeance over time (the time X condition interaction).

CHAPTER 16. STUDY 3 RESEARCH METHODS

Participants

One hundred and fifty-five (23% male) undergraduate students from a large Midwestern University completed this study for partial course credit in their psychology classes. The samples in the control and experimental conditions were recruited from Psychology 102 classes. The average age of the sample was 18.49 (*SD* = 1.89) years. The majority of participants were Caucasian (79%), which is typical of the demographic at the university. Psychology 102 students were used for a variety of reasons, including: a) this sample is demographically similar to the sample from the research pool, and they often overlap, such that many of the Psychology 102 students are also Psychology 101 students, b) the Psychology 102 students are already in a classroom setting and are in the mindset of listening to instructions, and c) the Psychology 102 students are enrolled in Psychology 102 for the entire semester, which allowed the primary researcher to have low participant attrition over time throughout the semester. All participants were treated in accordance with the APA ethical guidelines.

Measures

The same VS (αs > .93), RAS (αs > .83), and demographic questionnaire from Studies 1 and 2 were used.

Homework Assignments. At the end of each intervention session (described later), a homework assignment was given to each participant. The purpose of the homework assignments was to have the participants apply what they learned in the intervention to their daily lives and report on it by answering short answer questions. Each student was scored on how many homework assignments they completed and the amount of time it took them to complete the assignments (see Appendix U).

Procedure

The primary researcher recruited participants from 12 sections of a lower level psychology class over two semesters (Fall 2009 [*n* = 74] and Fall 2010 [*n* = 81]) for a study called "Teaching About Aggression". Participants were informed that the researchers were investigating what personality variables were related to how well people learn about aggression.

Participants were assigned to one of three conditions. In the control condition (*n* = 71) participants completed only the pre- and post-test measures. In the attributional intervention (*n* = 42) and the emotional intervention conditions (*n* = 40), the primary researcher went to the classrooms eight times throughout the course of the semester and discussed the topic of the day, allowing discussion time with participants. Each session lasted 10 minutes.

Two intervention curricula were created by the first author based upon theory and research on aggression-related interventions. Table 14 summarizes the topics discussed for each intervention. In the attributional intervention, the first session began with defining re-appraisal and showing examples. Because the attributional approach to re-appraisal focuses on seeking out additional information to clarify the situation and/or feelings, the second through the sixth sessions involved identifying visible (e.g., presence of a gun, sleep deprivation, heat) and non-visible (e.g., history of violence, having antisocial friends) risk factors for aggression. Session 7 discussed how attributional re-appraisal is related to aggressive behaviors. The final session discussed the need to take time to re-appraise.

The emotional intervention focused on using re-appraisal to reduce negative emotions. The first session defined re-appraisal and discussed relevant examples. The second session discussed the steps that are needed to re-appraise a negative situation effectively, which consisted of: 1) not reacting immediately, 2) modifying the situation by paying attention to

different aspects of the environment, and 3) using step 2 to re-appraise a negative emotion to feel less negative. The third through fifth sessions had participants practice using re-appraisal to feel less sad, angry, and disgusted. Session 6 consisted of discussing Urry's (2009) work on how re-appraisal takes time to complete and how the intensity of different negative emotions may take several re-appraisals to feel less negative. The final two sessions discussed how re-appraisal can be used to change behaviors, not just emotions.

After each session, intervention participants were given homework assignments consistent with the in-class discussions. After the final session, all participants completed the post-test measures and were thanked and fully debriefed. Complete data on key variables were obtained for 99 of the original participants.

Table 14. Topics and Dates of the Intervention

Lesson	Topic
Attributional Re-Appraisal Training	
Session	Topic
1	Defining Re-appraisal
2	Factors Related to Aggression
3	Visible Risk Factors for Aggression 1
4	Visible Risk Factors for Aggression 2
5	Non-Visible Risk Factors for Aggression 1
6	Non-Visible Risk Factors for Aggression 2
7	Combining Re-Appraisal and Aggression
8	Taking the Time to Re-Appraise
Cognitive Re-Appraisal Training	
Session	Topic
1	Defining Re-Appraisal
2	How does Re-Appraisal Work
3	Practicing with Re-Appraisal: Sadness
4	Practicing with Re-Appraisal: Anger
5	Practicing with Re-Appraisal: Disgust
6	Re-Appraisal's Time Table for Emotions
7	Relating Re-Appraisal to Behaviors 1
8	Relating Re-Appraisal to Behaviors 2

CHAPTER 17. ANALYSES AND RESULTS: STUDY 3

Preliminary Analyses

Re-appraisal and vengeance were negatively correlated at pre-test (r = -.34, p < .01) and post-test (r = -.38, p < .01). Vengeance change was negatively related to re-appraisal change (r = -.33, p < .01).

Prior to conducting the main analyses, several one-way ANOVAs were conducted to determine whether there was a difference between the attributional and emotional re-appraisal intervention conditions on any key variables. Results yielded no significant differences between the interventions on pre-test vengeance, pre-test re-appraisal, post-test vengeance, post-test re-appraisal, vengeance change scores, or re-appraisal change scores (Fs < 1.3, ps > .20). Thus, we collapsed the two intervention conditions together for further analysis. This lack of differences between the two interventions is itself an interesting finding. This may suggest that although the processes governing how cognitive and attributional re-appraisal operates are different, the end result may be similar.

Manipulation Check

A regression analysis tested the main effects of condition (intervention versus control) and pre-test re-appraisal, and their interaction, as predictors of post-test re-appraisal. Results showed significant main effects of pre-test re-appraisal, $F(1,95) = 46.28$, $p < .001$, $r = .57$, and condition, $F(1,95) = 5.32$, $p < .03$, $r = .23$. The interaction also was significant, $F(1,95) = 3.96$, $p < .05$, $r = .20$. A simple effects analysis showed that this interaction was driven by a significant main effect of condition at low levels of pre-test re-appraisal, $F(1,95) = 6.78$, $p < .02$, $r = .26$. Those low on re-appraisal at baseline and were in the intervention had higher post-test re-appraisal scores (M = 28.66) compared to those who were low on re-appraisal at pre-test and not

in the intervention condition (M = 24.17). The effect of intervention condition on post-test re-appraisal was non-significant for those high on re-appraisal at baseline ($F(1,95) = .06$, $p > .90$, $r = .03$). In other words, the intervention was successful at increasing re-appraisal for those who were low on baseline re-appraisal (see Figure 12).

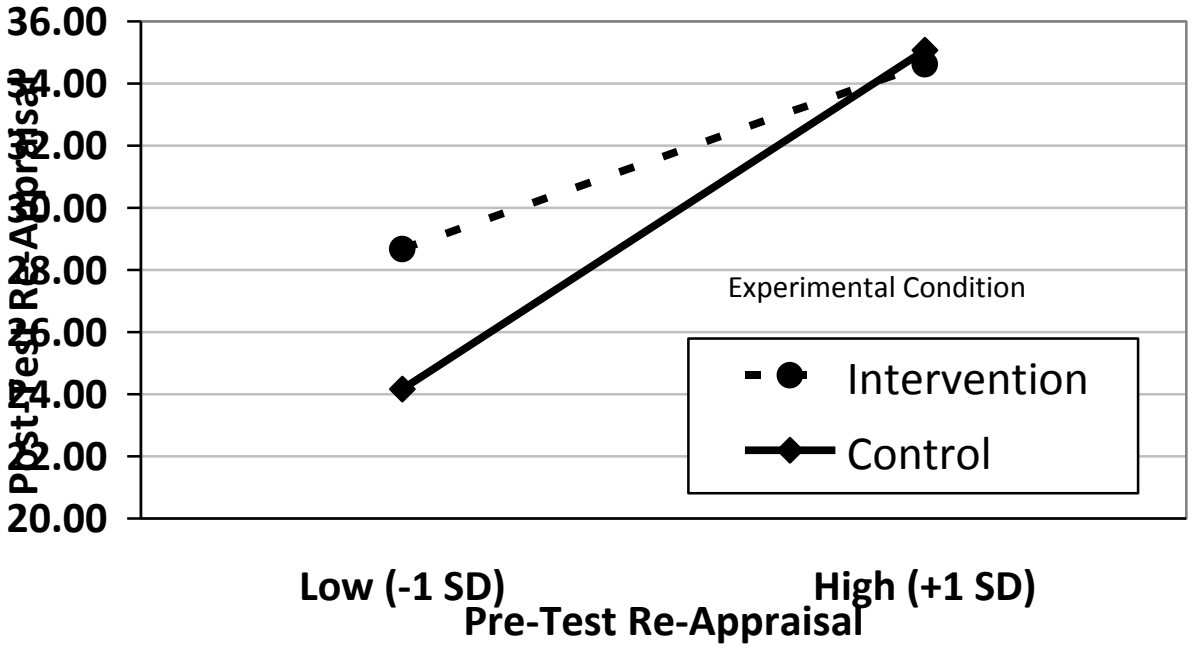


Figure 12: Condition Effect of Intervention at Values of Baseline Re-Appraisal on Post-Test Re-Appraisal

Effect of Intervention on Re-Appraisal and Vengeance

A one-way ANCOVA was conducted on post-test vengeance with experimental condition as the independent variable and pre-test vengeance as the covariate. Results yielded a significant effect of pre-test vengeance, $F(1, 96) = 183.05$, $p < .001$, $r = .81$. As would be expected of trait measures, pre- and post-test vengeance was strongly related. More importantly, there also was a significant effect of intervention condition, $F(1,96) = 4.51$, $p < .04$, $r = .21$. Those in the

intervention had lower post-test vengeance scores (M = 57.90) than those in the control condition (M = 63.06). In short, the re-appraisal training reduced trait vengeance.

Moderating Effect of Re-Appraisal Change on Vengeance Change

Next, I tested whether the intervention effect on vengeance would be most pronounced for those participants who actually displayed an increase in trait re-appraisal. To do this, I first used the pre- post regression analyses to compute residual change scores on re-appraisal and vengeance, essentially subtracting out the pre-test scores on these measures. I then ran a regression model with the vengeance change score as the outcome variable and the re-appraisal change score, experimental condition, and the re-appraisal X condition interaction as predictor variables. Prior to entry of the interaction term, both the condition, $F(1,93) = 5.01$, $p < .05$, $r = .23$, and the re-appraisal main effects were significant, $F(1,93) = 9.72$, $p < .01$, $r = .31$, respectively. Of most interest, though, was the significant condition X re-appraisal interaction, $F(1,93) = 4.11$, $p < .05$, $r = .21$. Follow-up tests showed a significant negative slope between re-appraisal change and vengeance change for those in the intervention condition, $F(1,47) = 10.81$, $b = -.85$, $p < .001$. This effect was not found for those in the control condition, $F(1,44) = .00$, $b = -.01$, $p > .95$. Figure 13 displays these slopes based on the predicted means at ± 1 SD of re-appraisal change. Further tests showed that the experimental condition effect on vengeance change was significant for participants who scored high on re-appraisal change, $F(1, 93) = 6.95$, $p < .01$, $r = .26$, whereas there was no effect of the intervention on those whose re-appraisal change scores were low, $F(1, 93) = 0.07$, $r = .03$.

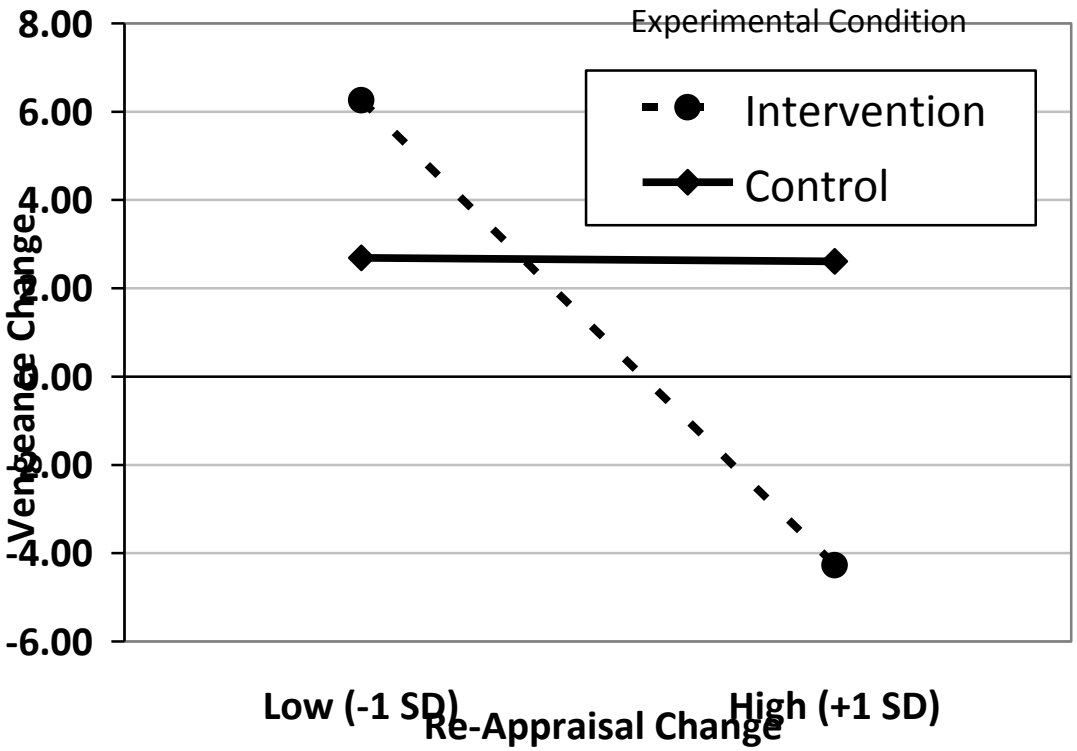


Figure 13: Conditional Effect of Intervention at Values of Re-Appraisal Change on Vengeance Change

One limitation with the procedures of Study 3 is that classrooms, not participants, were randomly assigned to the experimental condition. Although the number of classrooms and the number of participants in each classroom were low, it is important to test classroom effects to ensure that the assumptions behind some of the statistical tests I ran were not violated (i.e., independence of observations). I conducted an analysis that tested whether there was any systematic between classroom variations once the experimental manipulation was partialled out. A one-way ANOVA was conducted with the residualized re-appraisal change as the dependent variable and classroom as the independent variable. A contrast analysis comparing control versus re-appraisal intervention conditions was used to test the overall effect. Results showed that the

effect of classroom was non-significant, $F(8,89) = .80$, for re-appraisal change. A second ANOVA showed similar results for residualized vengeance change, $F(8,89) = .64$. In other words, there was no hint of classroom effects for the primary outcomes.

CHAPTER 18. STUDY 3: CONCLUSION

Overall, results of Study 3 suggest that the aggression-reducing intervention that focused on teaching re-appraisal was successful. The manipulation check suggested two important findings. First, those who were already high on re-appraisal did not benefit from the re-appraisal intervention. Second, re-appraisal increased the most for those who were in the intervention group and were low on re-appraisal at baseline. Thus, the intervention was successful at teaching participants how to use re-appraisal.

The primary research findings showed a significant re-appraisal change X condition interaction for vengeance change. When this interaction was probed, results showed that the largest decreases in vengeance occurred for those who had the highest increases in re-appraisal and were in the intervention condition. In other words, those in the intervention condition had the largest increase in re-appraisal, which was related to the largest decrease in vengeance. In sum, these findings suggest that the intervention had its intended effect.

CHAPTER 19. GENERAL DISCUSSION

Much work in the emotion regulation literature has shown that re-appraisal is one of several successful negative emotion regulation strategies (Gross, 1998a). Only recently has the literature on re-appraisal extended to the emotion of anger, and the limited research findings suggest that trait re-appraisal is negatively related to state anger after a provocation (Mauss et al., 2007; 2010). However, there is no research examining a) how re-appraisal is related to aggressive behavior, b) what factors mediate this relation, and c) what factors moderate this relation. These were the primary foci of the current research.

Re-Appraisal and Aggressive Behaviors. Results from the current research showed that re-appraisal is negatively related to aggressive behavior. Specifically, results from Study 1 showed that re-appraisal was negatively related to aggressive behavior, premeditated aggressive behavior, impulsive aggressive behavior, aggressive verbal behavior, and unspecified aggressive behavior. This is consistent with several aggression theories that explicitly state the importance of the relation of re-appraisal for aggressive behaviors (ICMTA, GAM).

Consistent with emotion regulation theory (Gross, 1998a), results from Study 1 also showed that re-appraisal is negatively related to aggressive affect, but not low agreeableness. Re-appraisal was, indeed, negatively related to variables that estimate aggressive affect, including anger and vengeance; whereas re-appraisal was unrelated to variables that estimate low agreeableness, including normative aggressive beliefs. This supports the hypothesis that re-appraisal works by correlating with affective or emotional variables.

Specific to Study 2, it was hypothesized that the presence of information in the context of a provocation would cue re-appraisal processes because extra information may cause provoked participants to re-appraise the situation prior to behaving. Consistent with the results from Study

1, results showed that aggressive behavior was significantly lower when information was present after a provocation relative to when no information was present after a provocation. Participants were still likely to aggress after being provoked relative to being praised, as evident from the main effect of feedback on aggressive behavior, but when information is present, the levels of aggression decrease relative to when no information is present. This is an interesting finding because this suggests that stimuli as miniscule as an excuse can have a large impact on aggressive behavior after being provoked. This certainly does not eliminate the possibility of an aggressive behavior; however, this finding does suggest that aggressive behavior will be lower when mitigating information is present.

Mediators. Although the previous findings are important for describing the main effects between re-appraisal on aggressive behavior, it is equally important to ask why these effects occur. Emotion regulation theory (Gross, 1998a) and aggression theories (GAM and ICMTA) all posit that aggressive affective variables should mediate the relation between re-appraisal and aggressive behavior. Results from mediation analyses in Study 2 support this hypothesis. Specifically, the relation between information and aggressive behavior was significantly mediated by revenge motivations only for provoked participants. In other words, re-appraisal was negatively related to aggressive behavior because of a reduction of revenge motives after a provocation. Thus, the mitigating information acted as a cue to re-appraisal, which operated by reducing state levels of vengeance. The mediating influence of vengeance in the relation between information and aggressive behavior helps to clarify the theorizing behind higher-order cognitions (i.e., attributions) and aggressive behavior. One's initial attribution regarding a provocation is likely hostile (Anderson & Bushman, 2002). When mitigating information is present, the initial attribution shifts from the provocateur to the information, reducing vengeance

and subsequent aggressive behavior. State feelings of mean and aggravation, positive affect, and negative affect did not mediate the relation between feedback and aggressive behavior.

The overall mediation findings offer additional insight into what variables did not significantly mediate the relation between information and aggressive behavior for provoked participants. Revenge motives were the lone mediator. This is likely because revenge contains both cognitive (e.g., planning) and affective elements (anger) (e.g., Bushman & Anderson, 2001). Re-appraisal requires time, motivation, and cognitive ability to alter an initially unsatisfying yet important attribution of another's behavior (Anderson & Bushman, 2001), to change one's behavioral response, especially thoughtful behaviors. The procedures of Study 2 satisfied all three requirements for re-appraisal processes to reduce aggressive behavior, as specified by GAM: an important, unsatisfying initial state, time and resources to reappraise, and additional information that allows a re-attribution to a less provocative cause.

Positive and negative affect as assessed by the PANAS are too global and assess high valenced, yet low arousal emotions (e.g., ashamed, interested). State levels of mean and aggravated may only tap into the affective component of the internal state variables, and re-appraisal may necessitate the cognitive component to fully operate. Of course, this is an area in need of future research.

The findings from Studies 1 and 2 were the impetus for Study 3. The primary purpose of the intervention was to teach participants to use re-appraisal tactics to reduce aggressive behavior. Since Study 2 showed that vengeance was the key mediator in the relation between information and aggressive behavior for provoked participants, the intervention sought to reduce vengeance via re-appraisal. Results showed that those in the intervention condition had lower levels of vengeance compared to those in the control condition. One interesting finding was that

the two intervention conditions did not significantly differ albeit the different re-appraisal focuses. This may suggest that although the processes governing how cognitive and attributional re-appraisal operates are different, the end results are similar: re-appraisal reduces aggressive affect and subsequent aggressive behavior. It is predicted that if an intervention can target and reduce the mediator, then aggressive behavior will be less likely after a provocation for those intervention participants; however, future research should explicitly test this.

Moderators. Results from Study 1 showed that cognitive re-appraisal moderated the relation between several strong predictors of aggression and various forms of aggressive behavior. Specifically, re-appraisal moderated the relation between anger, hostility, normative aggressive beliefs, control aggression schemas, and vengeance and several indices of aggressive behavior. In all analyses the results showed that trait re-appraisal acted as a protective factor in the relation between these aforementioned variables and aggressive behavior. Namely, the slope of the lines relating these variables to aggressive behaviors was lowest at high levels of trait re-appraisal (compared to those low on re-appraisal). It is important to note that re-appraisal does not reduce the slope of these relations to non-significance. Rather, for high re-appraisers the slopes of the lines relating these aggression-related variables to aggressive behavior was still significant and positive, but significantly lower than the slope of these lines for those low on trait re-appraisal. This suggests that other protective factors need to be present in order to further reduce the slope of these lines, but re-appraisal should add a significant portion of incremental validity to such analyses.

Study 2 also showed moderation. Specifically, results showed that the indirect effect of re-appraisal to aggressive behaviors through revenge motives was moderated by trait re-appraisal. The indirect effect was found for only those low on trait levels of re-appraisal. This

suggests that when provoked, low trait re-appraisal participants are likely to use the mitigating information successfully to reduce their revenge motivations and thereby also likely to aggress. Those high on trait re-appraisal may be able to regulate their negative emotions using re-appraisal on their own and may be able to reduce their vengeance and aggressive behavior without mitigating information. In other words, to reduce the likelihood of aggressive behavior through vengeance, low re-appraisers need explicit information, whereas high re-appraisers do not. These findings are the first to show that cognitive re-appraisal and attributional re-appraisal interact to influence social behaviors.

Implications for Aggression Theory

Of the many theories posited to explain why aggressive behavior is likely to occur, only two explicitly state the importance of re-appraisal. The first theory is the General Aggression Model (GAM; Anderson & Bushman, 2002). This model posits that an initial attribution is made regarding another's behavior. If the individual has sufficient time, cognitive resources, and motivation, re-appraisal of that initial attribution is likely if the outcome of the initial attribution is important, yet unsatisfying. Re-appraisal is not guaranteed to change aggressive behavior, but re-appraisal is posited to be related to premeditated (or thoughtful) behaviors, because more thought is put into the behaviors. Results from Study 2 largely support re-appraisal's role in GAM. First, results showed that provocation (a situational input variable) is related to aggressive affect (an internal state variable). Second, results showed a significant feedback X information interaction for aggressive behavior. Finally, revenge motives (an aggressive affect variable) significantly mediated the relation between information and aggressive behavior.

Perhaps the most overwhelming support for GAM is in the significant feedback X information interaction. This interacting influence of information with feedback suggests that

participants are likely to reduce their aggressive behavior after being provoked if mitigating information is present. GAM would suggest that the initial attribution after a provocation is likely vengeful. However, aggressing against another individual is an important decision and the outcome of that initial attribution should be important. When mitigating information is presented after the provocation, participants are provided with the means to cue re-appraisal processes. Perhaps participants can understand what it is like to have a bad day or have a breakup with a significant other. Therefore, the provocation is now attributed to these pieces of mitigating information rather than the "partner." This would explain why aggressive behavior was significantly lower for those who were provoked and received information relative to those who were just provoked.

The second theory that posits the importance of re-appraisal is the Integrative Cognitive Model of Trait Anger (ICMTA; Wilkowski & Robinson, 2008a). Although Wilkowski and Robinson (2008) explicitly state that their model is largely derived from GAM, re-appraisal is conceptualized differently. GAM conceptualizes re-appraisal within the context of attribution theory, as the decision processes in GAM are derived from attribution models (Anderson, Krull, & Weiner, 1996). In ICMTA re-appraisal is likely to reduce negative emotions (e.g., anger) by cognitively altering the negative situation, which also is consistent with GAMs position that re-appraisal works by changing one's initial attributions of intent and seeking out information to understand the situation. In ICMTA, re-appraisal is a bi-product of the recruitment of effortful control after making a hostile attribution of a hostile situation. Re-appraisal is posited to work by reducing anger, and therefore, reducing aggressive behavior. To some degree, the mediation findings from Study 2 support ICMTA; however, neither state aggravation nor state feelings of mean mediated the relation between condition and aggressive behavior. This does not support

ICMTA, but aggravation and mean may not be the best estimates of state anger, but rather state hostility. Future work should attempt to use a better state estimate of state anger and test for its mediating influence.

Implications for Emotion Regulation Theory

Gross' (1998a) theory of emotion regulation posits that re-appraisal occurs immediately prior to experiencing an emotion. Various processes occur after experiencing a negative emotion-inducing stimulus. These include situation modification, situation selection, and attention prior to re-appraisal. Within the context of anger, this suggests that if a situation or stimuli is interpreted as hostile, one may modify, select, or attend to the situation differently. This causes re-appraisal processes to occur and (in the context of anger) reduces the probability of aggressive behavior. Study 1 supported this by showing significant moderation findings in the relation between aggression-related variables and aggressive behavior. Study 2 supported this by showing a significant feedback X information interaction on aggressive behavior.

Specific to Study 2, Gross's (1998a) theory of emotion regulation would suggest that after participants are provoked, they are likely to experience aggressive affect and then engage in aggressive behavior. The presence of information for provoked participants may prompt those participants to attend to different aspects of the provocation (i.e., the information), prompting re-appraisal processes, reducing aggressive behavior. The mediating effect of revenge motives further suggests that state re-appraisal cues have the ability to reduce revenge motives, and then decrease aggressive behavior.

Limitations and Future Research

Certain limitations of the present research should be addressed in future work. First, Study 1 was limited by its correlational nature of the data. Thus, mediation could not be tested,

because all trait measures were assessed simultaneously. Given that Study 2 is experimental, and the results suggested mediation, this may not be damning to the conclusions from Study 1, but this limitation is certainly worth mentioning.

Second, Study 2 has several limitations that should be addressed in future work. First, re-appraisal processes were assumed to be operating for those in the mitigating information conditions after either a provocation or praise feedback. Based on the past research on mitigating information and aggressive behavior (e.g., Batson et al., 2000) and both emotion regulation (Gross, 1998a) and aggression theory (Anderson & Bushman, 2002; Wilkowski & Robinson, 2008), the presence of mitigating information should activate state re-appraisal processes. Future work should test to see if information does, in fact, prime these processes. Re-appraisal could be assessed by asking participants to write their current thoughts and then coding for re-appraisal, similar to what Hemenover (2003) had participants do, or by having a simple manipulation check (e.g., a state re-appraisal questionnaire) to test if state re-appraisal processes are at work.

Third, a number of limitations existed with Study 3's procedures. These include the amount of time in the classroom and participant retention. Future research should use these intervention techniques for longer periods of time, possibly sampling children (i.e., late adolescence). Future work should also attempt to measure aggressive behavior in the laboratory after a provocation and after being given mitigating information or not (similar to Study 2). This will test whether the intervention is successful at reducing aggressive behaviors after a provocation.

Final Comments

Re-appraisal is an effective emotion regulation strategy. Results from the current research suggests that re-appraisal is effective at reducing vengeance (at the state and trait level), which

reduces the probability of aggressive behavior. Furthermore, re-appraisal acts as a protective factor in the relation between other know aggression-related personality variables and aggressive behavior. This confirms the theorizing of GAM, ICMTA, and emotion regulation theories. Finally, interventions focused on re-appraising hostile situations may be important aggressive behavior reducing endeavors. Overall, this is an important first step in determining how, why, and for whom re-appraisal is related to aggressive behavior. With continued research elucidating on these processes more specifically, these relations may become better understood leading to better interventions to, hopefully, reduce aggressive behavior.

FOOTNOTES

1 When the entire sample was used the results from the 3X2X2 mixed ANOVA were non-significant. The suspicion rate in this study was higher than optimal. However, this may be a function of the fact that over 21 deception studies in the psychology department at Iowa State University were conducted in Fall 2009 and Spring 2010 (including Study 2). It is believed that if this number was lower and more participants were sampled from the Fall 2009 participant pool, the suspicion rate would have been lower.

2 Multiple mediation testing using the Preacher and Hayes (2008) methods become difficult when the independent variable has six conditions that are crossed making a 3X2 design, especially when the interaction is significant, as was the case for the primary analyses with aggressive and prosocial behavior. The method presented in the document is just one of three possible ways to handle multiple independent variables that interact. A second method involved recoding the independent into six conditions based on the order of where the theoretically predicted behavior would lie. The coding scheme adopted was: -3 as praised, -2 as praised with information, -1 as no feedback, 1 as no feedback with information, 2 provoke with information, 3 as provoked with no information. When this coding scheme used as the independent variable results were similar to the method presented in the paper. A third method involved creating five dummy coded variables. For each variable one condition in the 3X2 design was coded a 1 and the other five conditions a 0. Only five variables were created because one condition had to be the reference condition. Five multiple mediation tests were conducted. Each analysis had one of the newly created dummy variables as the independent variable. When this coding scheme used as the independent variable results were similar to the method presented in the paper.

3 Preacher et al. (2007) stated that the moderator can have an effect on a mediated relationship five ways. First, the moderator affects the relation between the IV and mediator. Second, the moderator affects the relation between the mediator and the DV. Third, the moderator affects both the relation from the IV to the mediator and the mediator to the DV. Fourth, the independent variable is the moderator between the mediator and DV. Finally, two moderators may affect a mediated relation (one moderating the relation between the IV and the mediator and the other moderating the relation between the mediator and the DV). Because participants were randomly assigned to conditions (which served as the IV), only the second model was theoretically and methodologically acceptable for analysis.

APPENDIX A. BUSS PERRY AGGRESSION QUESTIONNAIRE

Please rate each of the following items in terms of how characteristic they are of you. Use the following scale for answering these items.

1	2	3	4	5	6	7
extremely uncharacteristic of me						extremely characteristic of me

1) Once in a while I can't control the urge to strike another person.
2) Given enough provocation, I may hit another person.
3) If somebody hits me, I hit back.
4) I get into fights a little more than the average person.
5) If I have to resort to violence to protect my rights, I will.
6) There are people who pushed me so far that we came to blows.
7) I can think of no good reason for ever hitting a person.
8) I have threatened people I know.
9) I have become so mad that I have broken things.
10) I tell my friends openly when I disagree with them.
11) I often find myself disagreeing with people.
12) When people annoy me, I may tell them what I think of them.
13) I can't help getting into arguments when people disagree with me.
14) My friends say that I'm somewhat argumentative.
15) I flare up quickly but get over it quickly.
16) When frustrated, I let my irritation show.
17) I sometimes feel like a powder keg ready to explode.
18) I am an even-tempered person.
19) Some of my friends think I'm a hothead.
20) Sometimes I fly off the handle for no good reason.
21) I have trouble controlling my temper.
22) I am sometimes eaten up with jealousy.
23) At times I feel I have gotten a raw deal out of life.
24) Other people always seem to get the breaks.
25) I wonder why sometimes I feel so bitter about things.
26) I know that "friends" talk about me behind my back.
27) I am suspicious of overly friendly strangers.
28) I sometimes feel that people are laughing at me behind my back.
29) When people are especially nice, I wonder what they want.

APPENDIX B. TRAIT EMPATHY QUESTIONNAIRE

Directions: Read each statement and indicate how true each is for you using the following scale.

Strongly Agree Agree Neutral Disagree Strongly Disagree

1. It makes me sad to see a lonely stranger in a group.
2. People make too much of the feelings and sensitivity of animals.
3. I often find public displays of affection annoying.
4. I am annoyed by unhappy people who are just sorry for themselves.
5. I become nervous if others around me seem to be nervous.
6. I find it silly for people to cry out of happiness.
7. I tend to get emotionally involved with a friend's problems.
8. Sometimes the words of a love song can move me.
9. I tend to lose control when I am bringing bad news to people.
10. The people around me have a great influence on my moods.
11. Most foreigners I have met seemed cool and unemotional.
12. I don’t get upset just because a friend is acting upset.
13. I like to watch people open presents.
14. Lonely people are probably unfriendly.
15. Seeing people cry upsets me.
16. Some songs make me happy.
17. I really get involved with the feelings of the characters in a novel.
18. I get very angry when I see someone being ill-treated.
19. I am able to remain calm even though those around me worry.
20. When a friend starts to talk about his problem, I try to steer the conversation to something else.
21. Another's laughter is not catching for me.
22. Sometimes at the movies I am amused by the amount of crying and sniffling around me.
23. I am able to make decisions without being influenced by people's feelings.
24. I cannot continue to feel OK if people around me are depressed.
25. It is hard for me to see how some things upset people so much.
26. I am very upset when I see an animal in pain.
27. Becoming involved in books or movies is a little silly.
28. I become more irritated than sympathetic when I see someone's tears.
29. I become very involved when I watch a movie.
30. I often find that I can remain cool in spite of the excitement around me.
31. Little children sometimes cry for no apparent reason.

APPENDIX C. VENGEANCE SCALE

Listed below are a number of statements that describe attitudes that different people have. There is no right or wrong answers, only opinions. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree write a 7 in the blank; if you strongly disagree write a 1; if you feel somewhere in between write any of the numbers between 1 and 7. If you feel neutral or undecided, the write a 4.

(1) Disagree strongly
(2) Disagree
(3) Disagree slightly
(4) Neither disagree nor agree
(5) Agree slightly
(6) Agree
(7) Agree strongly

_____It's not worth my time or effort to pay back someone who has wronged me.
_____It is important for me to get back at people who have hurt me.
_____I try to even the score with anyone who hurts me.
_____It is always better not to seek vengeance.
_____I live by the motto "Let bygones be bygones".
_____There is nothing wrong in getting back at someone who has hurt you.
_____I don't just get mad, I get even.
_____I find it easy to forgive those who have hurt me.
_____I am not a vengeful person.
_____I believe in the motto "An eye for and a tooth for a tooth".
_____Revenge is morally wrong.
_____If someone causes me trouble, I'll find a way to make them regret it.
_____People who insist on getting revenge are disgusting.
_____If I am wronged, I can't live with myself unless I get revenge.
_____Honor requires that you get back at someone who has hurt you.
_____It is usually better to show mercy than to take revenge.
_____Anyone who provokes me deserves the punishment that I give them.
_____It is always better to "turn the other cheek",
_____To have a desire for vengeance would make me feel ashamed.
_____Revenge is sweet.

APPENDIX D. IMPULSIVE AND PREMEDITATED AGGRESSION QUESTIONNAIRE

Instructions: Consider any aggressive acts you have engaged in during the past six months. Indicate your agreement or disagreement with the following statements regarding those incidents.

1 = Strongly Disagreeing
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

1. I think the other person deserved what happened to them during some of the incidents.
2. I am glad some of the incidents occurred.
3. I wanted some of the incidents to occur.
4. The act led to power over others or improved social status for me.
5. Some of the acts were an attempt at revenge.
6. I feel my actions were necessary to get what I wanted.
7. I felt my outbursts were justified.
8. I planned when and where my anger was expressed.
*9. I was under the influence of alcohol or other drugs during the acts.
10. Sometimes I purposely delayed the acts until a later time.
*11. Anything could have set me off prior to the incident.
*12. I felt pressure from others to commit the acts.
*13. I consider the acts to have been impulsive.
*14. I feel I lost control of my temper during the acts.
15. I feel I acted out aggressively more than the average person during the last 6 months.
16. I was in control during the aggressive acts.
*17. When angry, I reacted without thinking.
*18. My behavior was too extreme for the level of provocation.
19. I understood the consequences of the acts before I acted.
*20. I usually can’t recall the details of the incidents well.

APPENDIX E. RE-APPRAISAL QUESTIONNAIRE

Please rate each statement in terms of level agreement using the scale provided below.

1	2	3	4	5	6	7
Strongly Disagree						Strongly Agree

1. I control my emotions by changing the way I think about the situation I'm in.
2. When I want to feel less negative emotion, I change the way I'm thinking about the situation.
3. When I want to feel more positive emotion, I change the way I'm thinking about the situation.
4. When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.
5. When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.
6. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.

APPENDIX F. NORMATIVE AGGRESSIVE BELIEFS (MODIFIED)

Now we are going to ask you whether you think certain things are WRONG or are OK for people your age to do. For each item, please select whether the action is perfectly OK, is sort of OK, is sort of wrong, or is really wrong. Choose only one number for each item and do not skip any items.

(1) It's really WRONG
(2) It's sort of WRONG
(3) It's sort of OK
(4) It's perfectly OK

1. Suppose a man says something bad to another man, John. Do you think it's OK for John to scream at him?
2. Suppose a man says something bad to another man, John. Do you think it's OK for John to hit him?
3. Suppose a man says something bad to a woman. Do you think it's WRONG for the woman to scream at him?
4. Suppose a man says something bad to a woman. Do you think it's WRONG for the woman to hit him?
5. Suppose a woman says something bad to another woman, Mary. Do you think it's OK for Mary to scream at her?
6. Suppose a woman says something bad to another woman, Mary. Do you think it's OK for Mary to hit her?
7. Suppose a woman says something bad to a man. Do you think it's WRONG for the man to scream at her?
8. Suppose a woman says something bad to another woman, Mary. Do you think it's WRONG for the woman to hit her?
9. Suppose a man hits another man, John. Do you think it's WRONG for John to hit him back?
10. Suppose a man hits a woman. Do you think it's OK for the woman to hit him back?
11. Suppose a woman hits another woman, Mary. Do you think it's WRONG for Mary to hit her back?
12. Suppose a woman hits a man. Do you think it's WRONG for the man to hit her back?

APPENDIX G. DEMOGRAPHICS AND LIFE HISTORY

Please answer the following questions as accurately as possible. If you a question does not apply to you, leave the item blank.

1. What is your current age in years?
2. What is your sex? (male or female)
3. How many siblings (brothers or sisters) do you have?
4. What was your GPA (on a four point scale – i.e., 0.0 – 4.0) in the previous semester?
5. What was your total score on the SAT? (if taken more than once, report the most recent)
6. What was your total score on the ACT? (if taken more than once, report the most recent)
7. Have you ever been in a physical fight in the last year? Yes / No
8. Try to estimate how many physical fights you have been in your entire life (sports such as boxing and wrestling do not count)?
9. What is your ethnicity _____.

APPENDIX H. MODIFIED NATIONAL YOUTH SURVEY

This questionnaire contains a number of questions about your behavior in the last year. Please answer all of the questions as accurately as you can. DO not try to look good or bad. All the information you provide is completely confidential and will not be shown to anyone else.

For each question, indicate how often you did the described behavior in the last year by selecting the letter corresponding to your best estimate, using the following scale.

0	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24	25-27	More
A	B	C	D	E	F	G	H	I	J	K

_____1. thrown objects (such as rocks, or bottles) at cars or people.

_____2. carried a hidden weapon other than a plain pocket knife.

_____3. attacked someone with the idea of seriously hurting or killing him/her.

_____4. been involved in gang fights.

_____5. hit (or threatened to hit) a teacher or adult at school.

_____6. hit (or threatened to hit) one of your parents.

_____7. hit (or threatened to hit) other students.

_____8. used force (strong-arm methods) to get money or things from other students.

_____9. used force (strong-arm methods) to get money or things from a teacher or other adult at school.

_____10. used force (strong-arm methods) to get money or things from other people (not students or teachers).

APPENDIX I. CONTROL AGGRESSION SCHEMA SCALE

Please indicate on the scale below the extent to which you believe those statements are true. Please answer all of the questions. Work quickly through the items and give the first answer that comes to mind for each one.

1	2	3	4	5	6
Completely Untrue	Mostly Untrue	Slightly Untrue	Slightly True	Mostly True	Completely True

1. The world belongs to those who can dominate others
2. No act of disrespect should go unpunished
3. I don't support vigilante groups but sometimes you need to take the law into your own hands.
4. A person can be both passive and effective
5. The most powerful army has the most control
6. People are most influenced by acts of kindness
7. A helpless person is the one who has lost their will to fight
8. The aggressor has more choices than their target
9. In some situations you need a weapon to sort things out
10. Sometimes you have to hit back harder than you were hot originally
11. I am one among others
12. Sometimes you have to do whatever it takes to regain control
13. I can watch very violent films without feeling disturbed
14. The strongest should have the right to make the decisions
15. Peaceful means are always more effective
16. Revenge is sweet
17. Often you need to be aggressive to get what you want
18. Sometimes people need to be crushed so they can understand the wrong they have done.
19. The meek shall inherit the Earth
20. When I feel powerless I also feel angry
21. Violent video games or movies are often over far too soon
22. When a person's freedom is threatened, they should fight back
23. The weak are valuable
24. Violence is the most effective strategy in most situations
25. Feelings of personal effectiveness and the power to control others go hand in hand
26. The victim has more options than the victor
27. Those who don't fight back are usually those who are also poor at fighting
28. Many people would hurt you if they could
29. The sight of others being hurt or killed on television does not upset me as it once did
30. One must be the master of one's world to keep the wolves at bay
31. If I let them, others would try to control my life
32. The world is full of people trying to take what other people have
33. Violent movies or games leave me wanting more
34. I have carried a weapon for my own protection
35. The most aggressive team controls the game

APPENDIX J. AGGRESSIVE AND PROSOCIAL BEHAVIOR QUESTIONNAIRE

Use the following scale to select a response choice that best describes what you are like as a person.

1	2	3	4	5	6
Definitely not like me					Definitely like me

I often do favors for people without being asked
I often lend things to people without being asked
I often help people without being asked
I often compliment people without being asked
I often share things with people without being asked

When someone puts me in a good mood, I will often share something with them if they ask
When someone puts me in a good mood, I will often help them with them if they ask
When someone puts me in a good mood, I will often lend them something with them if they ask
When someone puts me in a good mood, I will often compliment them with them if they ask
When someone puts me in a good mood, I will often do them a favor with them if they ask

I often help people to get what I want
I often share things with people to get what I want
I often lend things to people to get what I want
I often do favors for people to get what I want
I often compliment people to get what I want

When someone makes me angry or upset, I will often push or shove them for it
When someone makes me angry or upset, I will often yell at them for it
When someone makes me angry or upset, I will often insult them for it
When someone makes me angry or upset, I will often hit them for it
When someone makes me angry or upset, I will often say mean things to them for it

I often insult people to get what I want
I often hit people to get what I want
I often push or shove people to get what I want
I often say mean things to people to get what I want
I often yell at people to get what I want

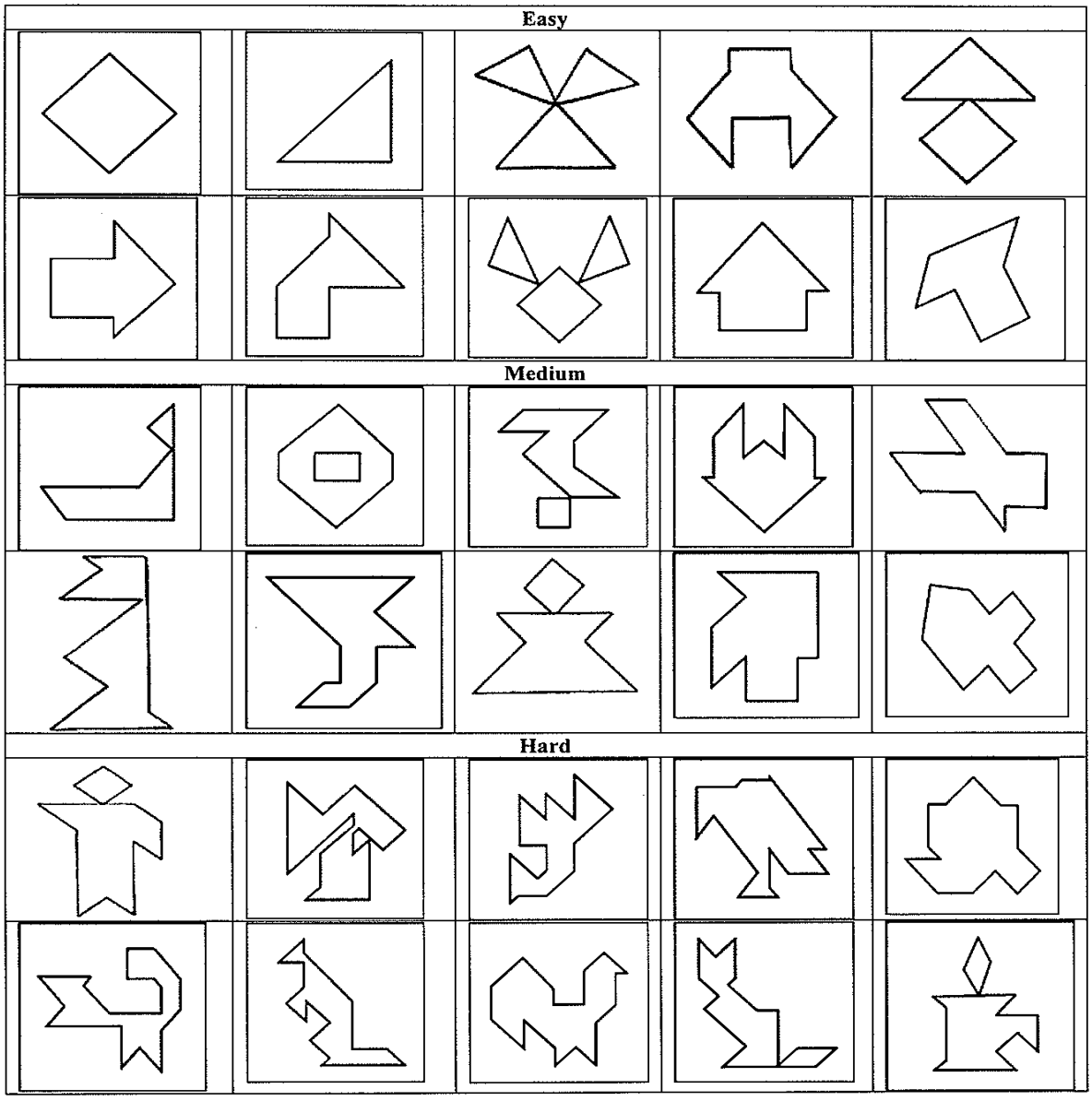
APPENDIX K. TANGRAMS FROM STUDY 2

Participant ID: _____

Tangram Assignment

Please choose 11 of the following tangram puzzles for your partner to complete. Remember that if your partner completes 10 out of the 11 tangrams you selected in ten minutes they will win the gift certificate.

Although most people pick from the medium category, we encourage you to select tangrams from different categories. Circle the tangram you want to assign to your partner. Once you have selected all 11 tangrams, please inform the experimenter.



APPENDIX L. STATE HOSTILITY SCALE

Please indicate the extent to which you agree or disagree with each of the following mood statements. Use the following 5 point rating scale. Write the number corresponding to your rating on the blank line in front of each statement.

Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1	2	3	4	5

____ I feel furious.
____ I feel willful.
____ I feel aggravated.
____ I feel tender.
____ I feel stormy.
____ I feel polite.
____ I feel discontented.
____ I feel like banging on a table.
____ I feel irritated.
____ I feel frustrated.
____ I feel kindly.
____ I feel cruel.
____ I feel outraged.
____ I feel agreeable.
____ I feel angry.
____ I feel offended.
____ I feel vexed.
____ I feel gracious*
____ I feel like being nice*
____I feel helpful*
____I feel caring*
____ I feel like I'm about to explode.
____ I feel friendly.
____ I feel understanding.
____ I feel amiable.
____ I feel mad.
____ I feel mean.
____ I feel bitter.
____ I feel burned up.
____ I feel like yelling at somebody.
____ I feel cooperative.
____ I feel like swearing.
____ I feel tame.
____ I feel good-natured.
____ I feel disagreeable.
____ I feel enraged.
____ I feel sympathetic.
____ I feel happy*
____ I feel thankful*
____I feel content*
____I feel hospitable*
____I feel appreciative*

* indicates filler items

APPENDIX M. PARTNER EVALUATION SCALE

You have had a chance to interact with your partner through the essay and the puzzle task. Based on your experiences, please provide some feedback about your partner. This feedback will be used as part of our assessment of your partner's performance. This feedback will be anonymous.

Circle the number that most accurately reflects your agreement or disagreement with each of the following statements.

1. My partner is intelligent.
   Strongly Disagree: 1 2 3 4 5 6 7: Strongly Agree

2. My partner is skillful.
   Strongly Disagree: 1 2 3 4 5 6 7: Strongly Agree

3. My partner is competent.
   Strongly Disagree: 1 2 3 4 5 6 7: Strongly Agree

4. My partner is helpful.
   Strongly Disagree: 1 2 3 4 5 6 7: Strongly Agree

5. My partner is kind.
   Strongly Disagree: 1 2 3 4 5 6 7: Strongly Agree

6. My partner is warm.
   Strongly Disagree: 1 2 3 4 5 6 7: Strongly Agree

APPENDIX N. REVENGE MOTIVATIONS

Please indicate the extent to which the following motives described your motive when deciding what puzzles to give your partner.

1. I wanted to impair my partner's performance.

1	2	3	4	5
not at all	a little bit	Somewhat	quite a lot	a lot

2. I wanted to make my partner mad.

1	2	3	4	5
not at all	a little bit	Somewhat	quite a lot	a lot

3. I wanted to hurt my partner.

1	2	3	4	5
not at all	a little bit	Somewhat	quite a lot	a lot

4. I wanted to pay back my partner for the essay evaluation he/she wrote.

1	2	3	4	5
not at all	a little bit	Somewhat	quite a lot	a lot

5. I wanted to give him/her harder puzzles to complete.

1	2	3	4	5
not at all	a little bit	Somewhat	quite a lot	a lot

APPENDIX O. NEED FOR COGNITION

For each of the statements below, please indicate to what extent the statement is characteristic of you. Please use the following scale.

1 = extremely uncharacteristic of you (not at all like you)

2 = somewhat uncharacteristic

3 = uncertain

4 = somewhat characteristic

5 = extremely characteristic of you (very much like you)

1. I would prefer complex to simple problems
2. I like to have the responsibility of handling a situation that requires a lot of thinking
3. Thinking is not my idea of fun*
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.*
5. I try to anticipate and avoid situations where there is likely chance I will have to think in depth about something.*
6. I find satisfaction in deliberating hard and for long hours.
7. I only think as hard as I have to.*
8. I prefer to think about small, daily projects to long-term ones.*
9. I like tasks that require little thought once I've learned them.*
10. The idea of relying on thought to make my way to the top appeals to me.
11. I really enjoy a task that involves coming up with new solutions to problems.
12. Learning new ways to think doesn't excite me very much*
13. I prefer my life to be filled with puzzles that I must solve.
14. The notion of thinking abstractly is appealing to me.
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.*
17. It's enough for me that something gets the job done; I don't care how or why it works.*
18. I usually end up deliberating about issues even when they do not affect me personally.

* reverse scored item

APPENDIX P. NEED FOR CLOSURE

Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

01. I think that having clear rules and order at work is essential for success.
02. Even after I've made up my mind about something, I am always eager to consider a different opinion.
03. I don't like situations that are uncertain.
04. I dislike questions which could be answered in many different ways.
05. I like to have friends who are unpredictable.
06. I find that a well ordered life with regular hours suits my temperament.
07. I enjoy the uncertainty of going into a new situation without knowing what might happen.
08. When dining out, I like to go to places where I have been before so that I know what to expect.
09. I feel uncomfortable when I don't understand the reason why an event occurred in my life.
10. I feel irritated when one person disagrees with what everyone else in a group believes.
11. I hate to change my plans at the last minute.
12. I would describe myself as indecisive.
13. When I go shopping, I have difficulty deciding exactly what it is I want.
14. When faced with a problem I usually see the one best solution very quickly.
15. When I am confused about an important issue, I feel very upset.
16. I tend to put off making important decisions until the last possible moment.
17. I usually make important decisions quickly and confidently.
18. I have never been late for an appointment or work.
19. I think it is fun to change my plans at the last moment.
20. My personal space is usually messy and disorganized.
21. In most social conflicts, I can easily see which side is right and which is wrong.
22. I have never known someone I did not like.
23. I tend to struggle with most decisions.
24. I believe orderliness and organization are among the most important characteristics of a good student.
25. When considering most conflict situations, I can usually see how both sides could be right.
26. I don't like to be with people who are capable of unexpected actions.
27. I prefer to socialize with familiar friends because I know what to expect

from them.

28. I think that I would learn best in a class that lacks clearly stated objectives and requirements.
29. When thinking about a problem, I consider as many different opinions on the issue as possible.
30. I don't like to go into a situation without knowing what I can expect from it.
31. I like to know what people are thinking all the time.
32. I dislike it when a person's statement could mean many different things.
33. It's annoying to listen to someone who cannot seem to make up his or her mind.
34. I find that establishing a consistent routine enables me to enjoy life more.
35. I enjoy having a clear and structured mode of life.
36. I prefer interacting with people whose opinions are very different from my own.
37. I like to have a plan for everything and a place for everything.
38. I feel uncomfortable when someone's meaning or intention is unclear to me.
39. I believe that one should never engage in leisure activities.
40. When trying to solve a problem I often see so many possible options that it's confusing.
41. I always see many possible solutions to problems I face.
42. I'd rather know bad news than stay in a state of uncertainty.
43. I feel that there is no such thing as an honest mistake.
44. I do not usually consult many different options before forming my own view.
45. I dislike unpredictable situations.
46. I have never hurt another person's feelings.
47. I dislike the routine aspects of my work (studies).

APPENDIX Q. POSITIVE AFFECT NEGATIVE AFFECT SCHEDULE (PANAS)

This part of the questionnaire deals with how you are currently feeling. Please mark the extent to which each word describes how YOU were feeling regarding your feelings about why you are going to give the tangrams to your partner. Use the following scale for your answers

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

____interested	____irritable
____distressed	____alert
____excited	____ashamed
____upset	____inspired
____strong	____nervous
____guilty	____determined
____scared	____attentive
____hostile	____jittery
____enthusiastic	____active
____proud	____afraid

APPENDIX R. ESSAY WRITING FORM

Pro Life / Pro Choice

Instructions: Please write a short essay regarding your views on abortion. You may choose to write either a pro-choice or pro-life stance but please be sure to label on top of the essay what position you are taking. Your essay should be more than three sentences but no longer than three paragraphs

APPENDIX S. ESSAY EVALUATION FORM

Please look at the sheet containing the other participant's essay; and answer the questions below using the following scale:

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5 +6 +7 +8 +9 +10
Unacceptable excellent

1. Organization	____	-8 (8)
2. Originality	____	-7 (7)
3. Writing Style	____	-7 (7)
4. Clarity in Expression	____	-6 (6)
5. Persuasiveness of arguments	____	-9 (9)
6. Overall quality of essay	____	-7 (7)

Written Comments:

One of the worst essays I've ever read! (One of the best essays I've ever read!)

Numbers and text in parentheses represent the information given to the praise conditions

APPENDIX T. DEBRIEFING FORM

PARTICIPANT INFO SHEET & DEBRIEFING QUESTIONS

PARTICIPANT ID#_____ DATE_____ TIME_____

CONDITION_____ EXPERIMENTER INITIALS_____ GENDER M / F

Say to participant: *"We are now finished with the study. I would now like to ask you a few questions before you leave. Is that OK with you?"*

1. What did you think of the study?

2. Were you confused by any of the tasks or instructions? (circle one) YES NO
If Answered Yes, Please Ask Participant to Elaborate:

3. Did you think that the way the lab was set up gave away any information on what the experiment was about? (circle one) YES NO
If Answered Yes, Please Ask Participant to Elaborate:

4. Do you think that there might have been more to this study then you were told? (circle one) YES NO
If Answered Yes, Please Ask Participant to Elaborate:

5. Why do you think your partner graded your essay the way they did?

6. What did you think of your partner?

Experimenter:
WRITE ANY COMMENTS ABOUT THE SESSION THAT COULD AFFECT THE VALIDITY OF THE RESULTS:

IF SUBJECT EXPRESSES ANY SUSPICION, ASK MORE QUESTIONS TO DETERMINE WHEN SUSPICION AROSE!!

Also, please rate this participant's suspicion of the true research hypothesis:

Not at all suspicious: 1 2 3 : Extremely Suspicious

APPENDIX U. HOMEWORK ASSIGNMENTS

Week 1. I want you to try to re-appraise a negative situation. Please write down or describe a situation that happened in your personal life or a movie where a negative event happened. Then I want you to try to write as many positive outcomes from the event that occurred. Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

Week 2. Today we discussed a variety of visible and non-visible factors that are related to aggressive behavior. Although we focused on several in class, there are many others that were not discussed. I want you to think about what you think are the strongest four risk factors of aggressive behavior. Please list two visible and two non-visible risk factors and briefly describe why you believe that these four risk factors are the strongest predictors of aggressive behavior. Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

Week 3. A variety of visible situational factors were discussed that are visible and related to aggression. I want you to think about a time that you aggressed against another person or were aggressed against. Do not write down the specifics of the situation, but I want you to write down possible situational factors that are visible and could have contributed to the aggressive actions of either you or the other person. Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

Week 4. Today we focused on using examples from the mass media and pictures of aggressive actions. Then we practiced finding the situational visible risk factors that are related to aggression and could have attributed to the aggressive act. I want you to think of an aggressive act that occurred in a movie that you are familiar with. Please briefly describe the aggressive scene in that movie. Who was involved? Describe the characters. Where was the aggression taking place? Describe the environment. Please briefly describe any other factors that are important for understanding the aggressive act that occurred in the movie. Then, I want you to briefly list all of the possible visible situational factors that may have contributed to the aggressive act. Which one(s) do you think were the most important and explain why. Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

Week 5. A variety of non-visible situational factors were discussed that cannot be seen that are related to aggression. I want you to think about a time that you aggressed against another person or were aggressed against. Do not write down the specifics of the situation, but I want you to write down possible situational factors that are not visible and could have contributed to the aggressive actions of either you or the other person. Were there additional motivations that you had that you were not aware of? Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

Week 6. Today we focused on using examples from the mass media and pictures of aggressive actions. Then we practiced finding the non-visible situational risk factors that are related to aggression and could have attributed to the aggressive act. I want you to think of an aggressive

act that occurred in a movie that you are familiar with. Please briefly describe the aggressive scene in that movie. Who was involved? Describe the characters. Where was the aggression taking place? Describe the environment. Please briefly describe any other factors that are important for understanding the aggressive act that occurred in the movie. Then, I want you to briefly list all of the possible non-visible situational factors that may have contributed to the aggressive act. Since you are familiar with the movie, you may be aware of any event that happened before the aggressive acts, or any motivations of the character that the victim may not be aware of. List those if they apply. Which one(s) do you think were the most important and explain why. Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

Week 7. Think about a time that you were picked on, bullied, pushed, gossiped about, in a physical fight that you did not start, or any other time when someone aggressed against you. Also think about how you personally reacted and what you did when this occurred. Now that we have discussed a variety of visible and non-visible situational factors related to aggression, I want you to think about how re-appraising the situation may have changed your reaction to the aggression that you experienced. To think about this topic deeply, I want you to write about a time that you were aggressed against and what you did when that aggression happened. Then, identify possible visible and non-visible situation factors that may have contributed to why the other person aggressed against you. Finally, I want you to image what would have happened if you would have re-appraised the situation, accounting for all or some of the situational factors that you just listed, and how the outcome may have been different. Please document how long this took you to complete and it will be handed back to the researcher next time we meet.

REFERENCES

Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*, 27-51.

Anderson, C. A., Carnagey, N. L., Flanagan, M., Benjamin, A. J., Eubanks, J., & Valentine, J. C. (2004). Violent video games: Specific effects of violent content on aggressive thoughts and behavior. *Advances in Experimental Social Psychology, 36,* 199-249.

Anderson, C. A., & Carnagey, N. L. (2009). Causal effects of violent sports video games on aggression: Is It competitiveness or violent content. *Journal of Experimental Social Psychology, 45,* 731-739.

Anderson, C. A., Deuser, W. E., & DeNeve, K. M. (1995). Hot temperatures, hostile affect, hostile cognition, and arousal: Tests of a General Model of Affective Aggression. *Personality and Social Psychology Bulletin, 21*, 434-448.

Anderson, C. A., & Dill, K. E. (2000). Video games and aggressive thoughts, feelings, and behavior in the laboratory and in life. *Journal of Personality and Social Psychology, 78,* 772-790.

Anderson, C.A., Krull, D. S., & Weiner, B. (1996). Explanations: Processes and consequences. Chapter in E.T. Higgins & A.W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles*. (pp.271-296). NY: Guilford Press.

Anderson, C. A. & Murphy, C. R. (2003). Violent video games and aggressive behavior in young women. *Aggressive Behavior, 29*, 423-429.

Augustine, A. A., & Hemenover, S. H. (2009). On the relative effectiveness of affect regulation strategies: A meta-analysis. *Cognition and Emotion, 23*, 1181-1220.

Barlett, C. P. (2011). The effect of attributions, cognitive re-appraisal, and reframing on aggressive affect and aggressive behavior: A meta-analysis. Unpublished data.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.

Batson, C. D., Bowers, M. J., Leonard, E. A., & Smith, E. C. (2000). Does personal morality exacerbate or restrain retaliation after being harmed? *Personality and Social Psychology Bulletin, 26,* 35-45.

Boxer, P., & Dubow, E. F. (2002). A social-cognitive information-processing model for school-based aggression reduction and prevention programs: Issues for research and practice. *Applied and Preventative Psychology, 10,* 177-192.

Boxer, P., Tisak, M. S., & Goldstein, S. E. (2004). Is it bad to be good? An exploration of aggressive and prosocial behavior subtypes in adolescence. *Journal of Youth and Adolescence, 33,* 91-100.

Bushman, B.J., & Anderson, C.A. (2001). Is it time to pull the plug on the hostile versus instrumental aggression dichotomy? *Psychological Review, 108,* 273-279.

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.

Buss, A.H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology, 63,* 452-459.

Cacioppo, J. T., Petty, R. E., & Kao, C. E. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48,* 306-307.

DeWall, N. C., Baumeister, R. F., Stillman, T. F., & Gailliot, M. T. (2007). Violence restrained: Effects of self-regulation and its depletion on aggression. *Journal of Experimental Social Psychology, 43*, 62-76.

Dill, J. C., & Anderson, C. A. (1995). Effects of frustration justification on hostile aggression. *Aggressive Behavior, 21*, 359-369.

Eisenberg, N., Smith, C. L., Sadovsky, A., & Spinrad, T. L. (2004). Effortful control: Relations with emotion regulation, adjustment, and socialization in childhood. In R. F. Baumeister K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 259-282). New York: Guilford.

Frijda, N. H. (1986). *The emotions*. New York: Cambridge University Press.

Gentile, D. A., Anderson, C. A., Yukawa, S., Ihori, N., Saleem, M., Ming, L. K., Shibuya, A., Liau, A. K., Khoo, A., Bushman, B. J., Huesmann, L. R., & Sakamoto, A. (2009). The effects of prosocial video games on prosocial behaviors: International evidence from correlational, longitudinal, and experimental studies. *Personality and Social Psychology Bulletin, 35*, 752-763.

Gross, J. J. (1998a). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*, 271-299.

Gross, J. J. (1998b). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*, 224-237.

Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science, 10*, 214-219.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relations, and well-being. *Journal of Personality and Social Psychology, 85*, 348-362.

Gross, J. J., & Thompson, R. A. (2007). Emotion regulation: Conceptual foundations. In J. J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 3-24). New York: Guilford Publications.

Guerra, N., Henry, D., Huesmann, L. R., & Tolan, P. (2007). Changing the way children "think" about aggression: Social-Cognitive effects of a preventive treatment. *Journal of Counseling and Clinical Psychology, 75*, 160-167.

Guerra, N. G., & Slaby, R. G. (1990). Cognitive mediators of aggression in adolescent offenders: 2. Intervention. *Developmental Psychology, 26*, 269-277.

Hemenover, S. H. (2003). Individual differences in rate of affect change: Studies in affective chronometry. *Journal of Personality and Social Psychology, 85*, 121-131.

Hudley, C., & Graham, S. (1993). An attributional intervention to reduce peer-directed aggression among African-American boys. *Child Development, 64*, 124-138.

Hudley, C., Graham, S., & Taylor, A. (2007). Reducing aggressive behavior and increasing motivation in school: The evolution of an intervention to strengthen school adjustment. *Educational Psychologist, 42*, 251-260.

Huesmann, L. R., Guerra, N. G., Miller, L., & Zelli, A. (1992). The role of social norms in the development of aggression. In H. Zumkley & A. Fraczek (Eds.), *Socialization and Aggression* (pp. 139-151). New York: Springer.

Izard, C. E. (2009). Emotion theory and research: Highlights, unanswered questions, and emerging issues. *Annual Review of Psychology, 60*, 1-25.

John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality, 72*, 1301-1334.

Kockler, T. R., Stanford, M. S., Nelson, C. E., Meloy, J. R., & Sanford, K. (2006). Characterizing aggressive behavior in a forensic population. *American Journal of Orthopsychiatry, 76*, 80-85.

Krieglmeyer, R., Wittstadt, D., & Strack, F. (2009). How attribution influences aggression: Answers to an old question by using an implicit measure of anger. *Journal of Experimental Psychology, 45*, 379-385.

Larsen, R. J. (2000). Toward a science of mood regulation. *Psychological Inquiry, 11*, 129-141.

Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.

Martin, R. C., & Dahlen, E. R. (2005). Cognitive emotion regulation in the prediction of depression, anxiety, stress, and anger. *Personality and Individual Differences, 39*, 1249-1260.

Mauss, I. B., Cook, C. L., Cheng, J. Y. J., & Gross, J. J. (2007). Individual differences in cognitive reappraisal: Experiential and physiological responses to an anger provocation. *International Journal of Psychophysiology, 66*, 116-124.

Mauss, I. B., Cook, C. L., & Gross, J. J. (2007). Automatic emotion regulation during anger provocation. *Journal of Experimental Social Psychology, 43*, 698-711.

Mauss, I. B., Evers, C., Wilhelm, F. H., & Gross, J. J. (2010). How to bite your tongue without blowing your top: Implicit evaluation of emotion regulation predicts affective responding to anger provocation. *Personality and Social Psychology Bulletin, 32*, 589-602.

McCullough, M. E., Bellah, C. G., Kilpatrick, S. D., & Johnson, J. L. (2001). Vengefulness: Relations with forgiveness, rumination, well-being, and the Big Five. *Personality and Social Psychology Bulletin, 27,* 601-610.

Mehrabian, A., & Epstein, N. (1972). A measure of emotional empathy. *Journal of Personality, 40*, 525-543.

Ohbuchi, K., Kameda, M., & Agarie, N. (1989). Apology as aggression control: Its role in mediating appraisal of and response to harm. *Journal of Personality and Social Psychology, 56,* 219-227.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40,* 879-891.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42,* 185-227.

Ray, R. D., Wilhelm, F. H., & Gross, J. J. (2008). All in the mind's eye? Anger rumination and reappraisal. *Journal of Personality and Social Psychology, 94,* 133-145.

Sheppes, G., Catran, E., & Meiran, N. (2009). Reappraisal (but not distraction) is going to make you sweat: Physiological evidence for self-control effort. *International Journal of Psychophysiology, 71*, 91-96.

Stanford, M. S., Houston, R. J., Mathias, C. W., Villemarette-Pittman, N. R., Helfritz, L. E., & Conklin, S. M. (2003). Characterizing aggressive behavior. *Assessment, 10,* 183-190.

Stillwell, A. M., Baumeister, R. F., & Del Priore, R. E. (2008). We're all victims here: Towards a psychology of revenge. *Basic and Applied Social Psychology, 30,* 253-263.

Stemmler, G. (1997). Selective activation of traits: Boundary conditions for the activation of anger. *Personality and Individual Differences, 22*, 213-233.

Stuckless, N., & Goranson, R. (1992). The vengeance scale: Development of a measure of attitudes towards vengeance. *Journal of Social Behavior and Personality, 7*, 25-42.

Troy, A. S., Wilhelm, F. H., Shallcross, A. J., & Mauss, I. B. (in press). Seeing the silver lining: Cognitive re-appraisal ability moderates the relationship between stress and depressive symptoms. *Emotion*.

Urry, H. L. (2009). Using reappraisal to regulate unpleasant emotional episodes: goals and timing matter. *Emotion, 9*, 782-797.

Warburton, W. A. (2007). *Control-related aggression: Evidence for a mechanism, its origins, and personality correlates*. Dissertation submitted to Macquarie University, Syndey, Australia.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scale. *Journal of Personality and Social Psychology, 54*, 1063-1070.

Webster, D., Kruglanski, A. (1994) Individual differences in need for cognitive closure. *Journal of Personality and Social Psychology, 67*, 1049-1062.

Wilkowski, B. M., & Robinson, M. D. (2007). The cognitive basis of trait anger and reactive aggression: An integrative analysis. *Personality and Social Psychology Review, 12*, 3-21.

Wilkowski, B. M., & Robinson, M. D. (2008). Clear heads and cool heads: Emotional clarity and the down-regulation of antisocial affect. *Cognition & Emotion, 22*, 308-326.

Wilkowski, B. M., Robinson, M. D., Gordon, R. D., & Troop-Gordon, W. (2007). Tracking the evil eye: Trait anger and selective attention within ambiguously hostile scenes. *Journal of Research in Personality, 41*, 650-666.

Wilkowski, B. M., Robinson, M. D., & Troop-Gordon, W. (2010). How does cognitive control reduce anger and aggression? The role of conflict monitoring and forgiveness processes. *Journal of Personality and Social Psychology, 98*, 830-840.

Williams, L. E., Bargh, J. A., Nocera, C. C., & Gray, J. R. (2009). The unconscious regulation of emotion: Nonconscious reappraisal goals modulate emotional reactivity. *Emotion, 9*, 847-854.

ACKNOWLEDGMENTS

There are many people that deserve my thanks for providing their guidance with my dissertation and their support throughout my collegiate career. First, I would like to thank Drs. Craig Anderson (my major advisor) and Doug Gentile (my major advisor "not on paper"). They are outstanding advisors. They not only provided me the opportunity to conduct quality research, but they taught me about research, statistics, writing, and how to be a better person. Also, Drs. Anderson and Gentile have an uncanny ability to see the good in people, which allowed me to continue to thrive under their tutelage.

I would also like to thank the other three members of my dissertation committee: Dr. Zlatan Krizan, Dr. Nathanial Wade, and Dr. Robert West. Without their helpful comments and suggestions to the procedure, analyses, and write-up of this dissertation, the projects described herein would not have been as high quality. It is an honor to work with such great intellectuals.

I would also like to thank my family for supporting me during my entire educational journey. I have wanted to earn my Ph.D. for a ever since I was seven years old and words cannot express how much support my parents, Paul and Peggy gave me to achieve my goal. I now understand why they never settled for anything but my best in all my endeavors. I know that those expectations helped me earn this degree and be successful as a graduate student. To my sister, Megan, and brother, Mark, I also want to thank you both. I am very fortunate to have such a close relationship with both my siblings. Thanks for always supporting my career as a professional student for all these years.

Finally, and most importantly, I would like to thank my wife, Natalie. You have listened to countless hours of talking about research, read draft after draft of my work, and constantly stayed positive during times when I know it was difficult to be. Without your support I am sure

that I would not have been as successful in school. I am excited to share the next phase of our lives together.