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# The Impact of Multiple Opportunities for Aggression on Aggressive Thoughts, Behaviors, and Motivations

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The impact of multiple aggression opportunities on aggressive thoughts, behaviors, and  
motivations

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## Abstract

Opportunities for aggression occur frequently and unpredictably, but little research to our knowledge has investigated the impact of the mere presence of multiple opportunities on aggression over time. Two studies, one with a Canadian sample (163 participants) and one with an American sample (103 participants) were conducted to analyze the impact of the number of opportunities for aggression on justified and unjustified aggressive thoughts, behaviors, and motivations. Individually, these studies yielded the result that justified aggression remains stable over time, but that unjustified aggression decreases when an individual is given multiple opportunities. Combined, they indicated that justified aggression increased when participants had a second opportunity. Future research is proposed to understand the impact of moral licensing on aggression over time, and to understand why unjustified aggression occurs.

## The impact of multiple aggression opportunities on aggressive thoughts, behaviors, and motivations

Aggression can refer to any act intended to cause harm or injury toward another individual (Anderson & Bushman, 2002) and occurs in many forms, including passive aggression, or harming another person through the absence of action (Verona, Sadeh, Case, Reed, & Bhattacharjee, 2008). According to the General Aggression Model (DeWall, Anderson, & Bushman, 2011), aggression is controlled by a feedback loop of person and situation inputs, internal states, and appraisals and decision-making processes. Aggression can be triggered, then, by a number of external cues, including provocations such as rudeness (Porath & Erez, 2007) or insults (Bushman & Bartholow, 2010), which can serve as justification for aggression (Anderson, Buckley, & Carnagey, 2008). Whether actual transgressions occur or not, opportunities to harm other people can occur repeatedly and unpredictably. Does the mere presence of an opportunity — whether used or not — predict later aggression?

### **Multiple acts of justified aggression**

Revenge is a specific form of aggression intended to punish an individual for an undesirable behavior (Aquino, Tripp, & Bies, 2006; Carlsmith, Wilson & Gilbert, 2008). Aggression occurs in response to negative affect, and Bushman, Baumeister, and Phillips (2001) tested the idea that it may be a way to decrease that negative affect. Indeed, people expect that seeking revenge will make them feel better (Bushman et al, 2001; Bushman, Baumeister, & Stack, 1999) and, consistent with this intuition, research has found that thinking about revenge activates the reward centers of the brain (de Quervain et al., 2004). This suggests that thoughts of revenge feel good, but it does not address the question of whether revenge itself is satisfying. Research has begun to accumulate that suggests taking revenge is often at least partially

unsatisfying (Boon, Alibhai, & Deveau, 2011; Bushman, 2002; Carlsmith, Wilson, & Gilbert, 2008; Gollwitzer et al., 2011; Gollwitzer & Denzler, 2009; Yoshimura, 2007).

A clear example of this can be found in a series of studies conducted by Carlsmith and colleagues (2008). In their studies participants played a modified version of a prisoner's dilemma game online in which the group of players benefit if everyone cooperates, but a single player can personally profit more by not cooperating. Unbeknownst to participants the other players were programmed agents. One of the agents was programmed to not cooperate during the game, reducing the earnings of all the other players, including the participant, and providing a justification for retaliatory aggression. Half of the participants were given an opportunity to aggress against the uncooperative agent/player, and half were not. Perhaps counterintuitively, participants that had an opportunity for revenge were less happy than those without that opportunity.

To our knowledge, however, no research has yet directly investigated the possibility that acting aggressively initially may increase aggression at a later time. The present research was designed to address this gap in the literature by randomly assigning participants to conditions in which they have multiple or a single opportunity for aggression.

Consistent with past research we expect that when aggression is justified it will not have the cathartic effect of allowing participants to let go of their negative affect and desire for revenge (Berkowitz, 1989; Dollard, Doob, Miller, Mowrer, & Sears, 1939; Freud, 1961). Instead, we predict the opposite: participants given the initial opportunity to aggress will maintain that negative affect and be more aggressive at a later time compared to participants without this initial opportunity.

Research by Gollwitzer and colleagues (2011) suggests one possible reason this may be the case. They found that revenge is unsatisfying unless retaliators know that the transgressor understands that the revenge was a punishment for their own previous actions. Specifically, participants that took revenge reported more satisfaction if they received a message from the transgressor expressing understanding about why the retaliation took place.

This may be because revenge is a goal directed action and acts of revenge that do not satisfy a retaliator's goals may be unsatisfying. In Gollwitzer and colleagues' (2011) study retaliators apparently had the goal of making the transgressor understand that there are negative consequences for unwanted behavior (Gollwitzer & Denzler, 2009). Revenge that does not achieve that goal should be less satisfying than revenge that does. This is consistent with research demonstrating that aggressive acts that do not satisfy a goal increase rather than decrease the accessibility of aggression (Denzler, Foerster, & Liberman, 2009). In fact, Bushman (2002) found that victims of a transgression instructed to think about the transgression and hit a punching bag acted more aggressively against the transgressor at a later time than participants that were distracted from thinking about the transgression.

Because motivational strength increases the closer one is to a goal (Foerster, Liberman, & Friedman, 2007; Shah & Kruglanski, 2002), larger acts of revenge that fail to meet revenge-related goals should actually be less satisfying than smaller acts of revenge that fail to meet those goals. For example, if a goal of revenge is to make the transgressor understand that there are negative consequences for unwanted behavior (Carlsmith, 2005; Gollwitzer & Denzler, 2009), and to reduce that behavior in the future (McCullough, Kurzban, & Tabak, 2013), then taking a large act of revenge should make the retaliator feel closer to achieving that goal than taking a small act of revenge. Imagine two scenarios, one in which the victim can deny the transgressor

up to ten dollars as a form of revenge and one in which the victim can deny the transgressor only up to one dollar. Denying the transgressor up to ten dollars is a larger act of revenge than denying the transgressor up to one dollar. If, in both scenarios, the transgressor does not acknowledge that they understand why the retaliation has taken place, then the victim that took the larger act of revenge should feel more unsatisfied.

### **Multiple acts of unjustified aggression**

While revenge may be instrumental in accomplishing a goal — by letting a transgressor know they did something wrong or correcting future behavior — aggression that is not justified by a transgression should not bring someone closer to a goal. In a situation in which people have multiple opportunities to harm someone who did not harm first, different patterns of behavior could occur.

The mere opportunity to act aggressively once may be cathartic, and so people may show more aggression at a second opportunity if they had an initial opportunity. The first opportunity may have seemed like a chance to reduce negative affect, prompting them to want to take a second opportunity to further reduce negative affect. Breuer, Scharnow, and Quandt (2015) found that losing a videogame increased aggression, but that ‘trash talk’ from a partner did not. Similarly, for Geen (1968), participants who were frustrated by an unsolvable puzzle displayed more aggression than controls (although lower aggression than participants who were insulted by a confederate). If frustration from something like losing a game is sufficient to frustrate players and create the desire for aggression, this desire should not decrease at the second opportunity.

Alternately, unjustified aggression may not be motivated by frustration or catharsis, but by moral licensing (for review see Truelove, Carrico, Weber, Raimi, & Vandenberg, 2014). People seek balance in their ethical decisions (Zhong, Liljenquist, & Cain, 2009) and may either

feel ‘allowed’ to act aggressively after initial aggression, or feel a need to ‘make up’ for previous aggression by acting more prosocially at a second opportunity. Cornelissen, Bashshur, Rode, and Le Menestrel (2013) found that remembering an earlier ethical or unethical act could influence current behavior for participants with outcome-based mindsets. Those who thought about a previous unethical behavior were more ethical, and the inverse occurred for participants who thought about a previous ethical behavior. Similarly, Sachdeva, Iliev, and Medin (2009) found that people were willing to donate more to a charity when they had written about themselves using negative adjectives than positive ones. Thus, new behaviors may be reactively different from previous behaviors. When people have multiple opportunities for aggression, we would then expect them to fluctuate at each time in their levels of aggression, going back to an overall ethical balance.

### **Overview**

Two studies were designed and carried out to examine the effects of justification for aggression and multiple opportunities for aggression on aggression. Specifically, does justified aggression result in a catharsis and decrease in aggression, or does it result in an increase as people progress closer to a revenge goal? Is unjustified aggression stable over multiple opportunities, or does it fluctuate following a moral licensing model as described by Zhong and colleagues (2009)? We hypothesized that those who had justification would be more aggressive overall than those who did not. In addition, we expected individuals with justification would show greater aggression when they received two opportunities to aggress than when they received one. For those without justification, we predicted that number of opportunities for aggression would have no impact on later aggression.

## Study 1

Unsatisfying revenge or justified aggression could contribute to a vicious cycle in which a victim retaliates again and again without any response from the original transgressor.

Specifically, a victim might take revenge initially, receive no response from the transgressor, feel that the revenge is unsatisfying, and choose to take additional revenge at a later time.

Conversely, aggression can occur without a provocation from another person, due to a variety of impersonal aversive factors (Berkowitz, 1989). In a scenario in which individuals are given no provocation but experience negative affect, they may still take an opportunity to aggress.

The present research investigated the impact of the number of opportunities participants have to aggress, and whether or not those opportunities are justified, on subsequent aggression by randomly assigning half of participants to experience a transgression by a partner (thus, justifying aggression) and giving some participants an opportunity to deny that partner up to either \$10 or \$1 and denying the remaining participants that opportunity. Importantly, the transgressor never responded to how much money s/he had been denied before participants were given another opportunity to act aggressively by denying the partner raffle tickets for a draw.

We expected that among participants with justification for aggression those with the initial opportunity to deny their partner up to \$10 would later deny that same partner more raffle tickets than participants with the initial opportunity to deny their partner up to \$1 or not given that opportunity. We predicted this because participants that deny their partner up to \$10 should feel closest to achieving their aggression related goals (teaching their partner a lesson or reducing the negative affect from the transgression) and, therefore, have the most motivational strength toward additional aggressive acts.

Participants who did not receive the transgression (and, thus, were not justified in their aggression) were not expected to vary their aggression by their numbers of opportunities. Even if they were aggressive in order to reduce some negative affect at the initial opportunity, the lack of a justification for aggression should not have motivated them to increase this aggression at the later opportunity because they do not have a specific goal they are approaching closer to.

## **Method**

**Participants and Design.** Participants were undergraduate students recruited and awarded course credit through the online participant pool at a university in southwestern Ontario, Canada. One hundred and seventy-three began the experiment, and 163 of these completed the study and were included in the analysis. Their mean age was 20, and 66% were female. Upon logging into the website with an anonymous identification number, participants were randomly assigned to condition in a 3 Opportunities (Deny partner up to \$10 vs. Deny partner up to \$1 vs. No Opportunity)  $\times$  2 Justification (Justification vs. No Justification) between-subjects design.

**Materials and Procedure.** After logging in participants read a screen that explained the study was ostensibly designed to increase understanding of cooperative online play and as such they would compete with a partner against another team in a game of Boggle. In reality the purpose of the Boggle game was to create a situation that justified or did not justify aggression. After the completion of the Boggle game, participants were given, at Time 1, the opportunity to deny that partner up to either \$10 or \$1, or given no opportunity to deny their partner at all. After completing a series of filler tasks that took at least 10 minutes to complete, participants distributed raffle tickets between themselves and their partner which served as our measure of aggression at Time 2.

***Aggression Justification.*** The justification for aggression took place at the conclusion of a game of Boggle. In Boggle players are shown a 4x4 grid of letters and must spell words using letters that are adjacent to one another. Participants were ‘matched’ with a partner who was really a programmed agent and then completed five rounds of Boggle.

At the end of the fifth round a “Results” screen was presented to participants and showed that the participant had earned 50 points and his or her partner had earned 65 points for a total of 115 points combined. The screen also informed participants that the opposing team had earned 125 points.

Finally participants were presented with a “Chat Screen” that allowed them to send and receive messages to and from their partner. Participants in the Justified aggression conditions received, "Hi, u really sucked at this game...ur a terrible partner." This insult constituted the justification for aggression. (For a review of the external validity of verbal aggression as provocation in the laboratory, see Anderson & Bushman, 1997.) In contrast, participants in the Unjustified aggression conditions received, "hi there."

***Time 1 Opportunity.*** Participants in the Deny partner up to \$10 and Deny partner up to \$1 conditions were presented with a screen that allowed them to select how much money they believed their partner deserved for participating in the study. Specifically, they were told, “We are interested in how people work together online and so we would like to know what you think of your partner from the Boggle game. We would like you to determine how much compensation your partner should receive for participating in this study.” Participants could choose one of ten options from \$1 (\$0.10) to \$10 (\$1).

In contrast, Participants in the No Initial Opportunity condition were presented with a screen that stated, “Press Continue to Move On.” Study conditions are summarized in Table 1.

**Filler Tasks.** Participants completed a Stroop Task (Trawalter & Richeson, 2006), a line bisection task (Nash, McGregor, & Inzlicht, 2010), and a measure of association between the self and power-related concepts (Greenwald & Farnham, 2000). No predictions were made for these tasks, and their purpose was to distract participants to reduce the possible effects of rumination.

**Time 2 Opportunity.** Participants were told that they and their partner from the Boggle game would be entered into a draw for \$50 and they could distribute nine raffle tickets for this draw between themselves and their partner. Participants could choose to give from one to nine tickets to their partner and keep the rest for themselves.

Following the raffle ticket manipulation participants completed demographics questionnaires and read a debriefing screen which thanked them for their participation and explained the goals of the study.

## Results

To test whether multiple opportunities for aggression influenced the number of raffle tickets participants chose to give their partner differently for participants that were justified in their aggression compared to those that were not, we conducted a 3 Aggression Opportunities (Deny partner up to \$10, \$1, or No Opportunity)  $\times$  2 Justification (Justified vs. Not Justified) ANOVA. The main effects of Aggression Opportunities,  $F(2, 151) = .918, p = .402, p\eta^2 = .012$ , and Justification,  $F(1, 151) = .732, p = .394, p\eta^2 = .005$ , were not significant. Importantly, the interaction between Aggression Opportunities and Justification was significant,  $F(2, 151) = 4.782, p = .010, p\eta^2 = .060$  (see Figure 1).

To further explore the interaction we analyzed the impact of Aggression Opportunities on later aggression separately for participants that were given a justification and those that were not. Among participants with justification for aggression, there were not significant differences in the

number of raffle tickets given dependent upon the number of opportunities for aggression participants were given,  $F(2, 65) = 2.372, p = .101, p\eta^2 = .068$ . However, supportive of the hypotheses, those with the opportunity to deny their partner up to \$10 gave marginally fewer raffle tickets to that partner ( $M = 2.33, SD = 1.81$ ) than participants in the Deny partner up to \$1 or no opportunity for aggression conditions ( $M_s = 2.92$  and  $3.75, SD_s = 2.63$  and  $2.70$ ),  $t(66) = 1.933, p = .058, d = .463$ .

Unexpectedly, among participants without justification for aggression, there were significant differences in the number of raffle tickets given dependent upon how many opportunities for aggression they had,  $F(2, 86) = 3.237, p = .041, p\eta^2 = .072$ . Specifically, those with the opportunity to deny their partner up to \$10 gave significantly more raffle tickets to that partner ( $M = 4.04, SD = 2.21$ ) than participants in the Deny up to \$1 or No Opportunity for aggression conditions ( $M_s = 2.68$  and  $3.23, SD_s = 1.57$  and  $2.09$ ),  $t(87) = 2.424, p = .017, d = .511$ .

## **Discussion**

The results of Study 1 provide some support for the general conclusion that an initial opportunity for aggression increases aggression at a later opportunity. We found some support for our prediction that participants with justification would aggress more if they had the opportunity to deny their transgressor up to \$10 rather than \$1 or no opportunity. Since the results from the justification group were only marginally significant, however, Study 2 was designed to have greater statistical power.

## **Study 2**

Since some findings were contrary to our hypotheses, one of the main goals of Study 2 was to ensure statistical power was sufficient enough for us to be confident in these results. One

way to do this was eliminating the Deny Partner up to \$1 condition, because it was not significantly different from the No initial Opportunity condition. The filler tasks to minimize rumination were replaced with a measure of hostile thoughts to measure possible rumination. Since concepts consistent with affective state are more readily available (Bower, 1981), we predicted more hostile thoughts from participants in the Justification conditions. Additionally, in order to investigate whether intentions were consistent or inconsistent with previous aggressive actions, a measure to evaluate aggression and avoidance motivations was added. In Study 2, then, aggression was measured at three times, with the initial opportunity as Time 1, the delayed opportunity to distribute raffle tickets as Time 2, and the measures of aggression and avoidance motivations as Time 3.

Motivation to be aggressive should predict actual aggressive behavior. In this procedure, however, motivation was not assessed until after the aggression opportunities. The timing of the tasks was arranged so that answering questions about motivations did not change those motivations and the subsequent behaviors. Additionally, the order provided the opportunity to demonstrate how behaviors impact later motivations.

Specifically, participants were given the Transgression-Related Interpersonal Motivations (TRIM) scale (McCullough & vanOyen Witvliet, 2002). Although the TRIM is designed to measure avoidance and revenge motivations, the revenge subscale questions can be thought of more generally as aggression motivation. A negative correlation between both aggression and avoidance motivations and raffle tickets given could be expected, but the opposite pattern could also emerge if reported motivations are guided by moral licensing. A prosocial behavior like granting more raffle tickets to a partner, for example, could reduce the probability that someone is motivated to continue acting prosocially toward that person. By

expressing aggression and avoidance motivations at Time 3, a person could restore ethical balance (Zhong et al, 2009).

## **Method**

**Participants and Design.** Participants were undergraduate students recruited and awarded course credit through the online participant pool at a university in the southeastern United States. According to G\*Power statistical software 125 participants are needed to have an 80% chance of detecting an interaction with a medium effect size (as was found in Study 1). Thus, 120 participants were recruited to participate in Study 2 but only 103 of these completed all study tasks and were included in the analysis. Thus, the actual power for this study was 72%. The mean age of participants was 22, and 77% were female. Participants were randomly assigned to condition in a 2 Initial Opportunity (No Opportunity vs. Deny partner up to \$10) × 2 Justification (Justification vs. No Justification) between-subjects design.

**Materials and Procedure.** Participants completed the study online and were told that the purpose of the study was to understand computer-mediated social interactions, and that they would be completing a series of computer-based tasks. The Boggle scenario and dispersion of raffle tickets stayed the same, but the filler tasks were reworked.

**Justification.** After seeing the player scores, participants were told they would be connected to a chat room, where they and their partner could exchange messages. As before, the participant typed a message and received either the insulting (Justification) or neutral (No Justification) message from their ostensible partner.

**Time 1 Opportunity.** Participants in the Large Opportunity condition were asked how much compensation they thought their partner should receive for participating in this study. They

were given the same \$1-\$10 scale as the participants from Study 1. Participants in the No Opportunity condition moved on to the next task. (See Table 2 for a summary of conditions.)

**Filler Task.** Before the delayed aggression opportunity, participants were presented with a task to evaluate aggressive thoughts. Specifically, they read a paragraph about a character with ambiguously hostile behavior (Srull & Wyer, 1979) and were asked to report their perceptions of him. More perception of hostility was interpreted as more aggressive thoughts and rumination.

**Time 2 Opportunity.** As in Study 1, all participants were given the opportunity to harm their ostensible partner at Time 2. They were told there were nine raffle tickets available, and that they could distribute these raffle tickets however they wanted, thus aggressing against their partner by depriving them of raffle tickets.

**Aggression and Avoidance Motivations.** After the delayed opportunity, participants completed the TRIM scale to assess revenge-specific aggression (Cronbach's  $\alpha = .796$ , sample item: "I will make my partner pay") and avoidance (Cronbach's  $\alpha = .924$ , sample item: "I want to keep as much distance between my partner and me as possible") motivations toward their partner. Following this, they were given demographic questionnaires and debriefed.

## Results<sup>1</sup>

**Aggression.** A two-way ANOVA was conducted to analyze the number of raffle tickets given to the partner and found no significant main effects for Opportunities,  $F(1, 100) = 2.918$ ,  $p = .091$ ,  $p\eta^2 = .028$ , or Justification,  $F(1, 100) = 1.388$ ,  $p = .242$ ,  $p\eta^2 = .014$ . The interaction was significant, however,  $F(1, 100) = 5.345$ ,  $p = .023$ ,  $p\eta^2 = .051$  (see Figure 2). Among participants with a justification for aggression, mean number of raffle tickets given at Time 2 was not significantly different between participants who received one ( $M = 5.79$ ,  $SD = 1.99$ ) or two

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<sup>1</sup> No significant relationship was found between hostile thoughts and any other variable. Additionally, no relationship was any found between money recommended at Time 1 and any other variable.

aggression opportunities ( $M = 5.54$ ,  $SD = 2.23$ ),  $F(1, 100) = .182$ ,  $p = .670$ ,  $p\eta^2 = .002$ .

However, among those who did not receive the justification, participants who received both opportunities to aggress gave more raffle tickets ( $M = 6.00$ ,  $SD = 2.18$ ) than those who received only one opportunity ( $M = 4.38$ ,  $SD = 1.79$ )  $F(1, 100) = 8.081$ ,  $p = .005$ ,  $p\eta^2 = .075$ .

**Aggression and Avoidance Motivation.** Another two-way ANOVA was conducted to test the impact of Justification and Opportunities on total TRIM scores. Justification had a significant main effect on aggression and avoidance motivations at Time 3,  $F(1, 100) = 17.402$ ,  $p < .001$ ,  $p\eta^2 = .148$ , with those who had a justification reporting more aggression and avoidance motivations ( $M = 2.46$ ,  $SD = .777$  for Justification,  $M = 1.87$ ,  $SD = .618$  for No Justification). There was no significant main effect for Opportunities,  $F(1, 100) = .120$ ,  $p = .730$ ,  $p\eta^2 = .001$ , nor was there a significant interaction,  $F(1, 100) = .669$ ,  $p = .415$ ,  $p\eta^2 = .007$ .

Because the temporal order of the procedure had participants distribute raffle tickets before taking the TRIM scale, we were interested in the possible intervening role of raffle ticket distribution on the relationship between Justification and Opportunity and total TRIM scores. To examine this, we used the PROCESS syntax (Model 8 — see Figure 3) developed by Hayes (2013). Opportunity did not predict TRIM scores ( $b = -.11$ ,  $p = .565$ ), nor was there a significant interaction ( $b = -.02$ ,  $p = .934$ ). Transgression did predict TRIM scores, however ( $b = .54$ ,  $p = .006$ ). Consistent with the ANOVA reported above, the interaction between Justification and Opportunities significantly predicted raffle tickets given (the mediator),  $b = -1.87$ ,  $p = .022$ . Unexpectedly, the main effects for Justification,  $b = 1.41$ ,  $p = .015$ , and Opportunities,  $b = 1.63$ ,  $p = .005$ , were also significant. Notably, raffle tickets also significantly predicted TRIM scores ( $b = 11$ ,  $p = .001$ ). To assess the significance of the indirect effect, we used 5000 bootstrapped resamples to generate two 95% confidence intervals around the indirect effect, one for

participants who received a justification and one for participants who did not. For participants who received a justification, the confidence interval around the indirect effect did include 0 [-.18, .09], indicating that raffle tickets given at Time 2 did not mediate the effects of Justification and Opportunity on TRIM scores. For participants who received no justification, the confidence interval around the indirect effects did not include 0 [.06, .40], indicating that raffle tickets given was a significant mediator. If these participants had an opportunity to aggress at Time 1, then they were less aggressive at Time 2 but reported more aggression and avoidance motivations at Time 3.<sup>2</sup>

To test whether it was also possible that motivations predicted behavior despite actual temporal order, an alternative model was tested that treated TRIM scores as the mediator on the impact of Justification and Opportunity on raffle tickets given. There was a significant main effect of Opportunity,  $b = .88$ , CI [.17, 2.36]  $p = .023$ , but not for Transgression, CI [-.22, 1.99] or the interaction, CI [-2.94, .26], indicating that condition did not lead to more revenge and avoidance motivations that then led to giving more raffle tickets. The confidence interval around the indirect effects included 0 for participants who received a justification [-.64, .22], as well as participants who did not [-.23, .45]. TRIM score was not a significant mediator on the impact of Justification and Opportunities on raffle tickets given.

## Discussion

Contrary to the hypothesis that justified aggression would increase at a second opportunity, people who were transgressed against showed similar levels of aggression

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<sup>2</sup> The same pattern was replicated when the analysis was repeated only for women, CI for Justification [-.20, .05], CI for No Justification [.01, .35]. There were not enough males in the sample to test if there were any interaction effects with gender. Bettencourt and Miller's (1996) meta-analysis found that any gender differences in aggression were minimized when participants were given a verbal provocation, or when they were deindividuated, as would be the case in our paradigm.

regardless of how many opportunities they were given to be aggressive. Additionally, participants who were not transgressed against were less aggressive when given an extra opportunity to harm their partner. It seems more likely, then, that some form of ethical balancing prompted these individuals to ‘make up’ for aggression at Time 1 than that aggression continued to reduce negative affect.

The significant decrease in aggression for participants given no transgression but two opportunities for aggression is consistent with the finding from Study 1. Again, participants may have made up for harming their partner at the initial opportunity. However, there was no correlation between initial harm and later harm. It is the presence of the opportunity that seems to have an impact, rather than the amount of money actually withheld.

Participants who were transgressed against reported more aggression and avoidance motivations on the TRIM. This is consistent with the idea that their aggression was progress toward a revenge goal.

These measures were also significantly positively correlated with the number of raffle tickets given to the partner at Time 2. Self-reported aggression and avoidance motivations, then, seem inconsistent with previous behavior. Indeed, raffle tickets given mediated the relationship between condition and aggression and avoidance motivations for participants who received no justification. This is consistent with ideas about moral licensing (Zhong et al, 2009). After granting more raffle tickets to a partner, participants may have felt more license to report negative feelings toward that partner. High scores on the TRIM can be conceptualized as a lack of forgiveness (McCullough & VanOyen Witvliet, 2002), so participants may have granted more resources to the partner without privately forgiving their transgression.

### Internal Meta-Analysis

Since each study was individually underpowered, the main variables of interest were combined and analyzed all together to provide a more accurate estimate of effect sizes.

### Results

Since there was no difference between the No Opportunity and Deny Partner up to \$1 conditions at Time 1 in Study 1, these levels were also combined for the purposes of the meta-analysis and called “No Opportunity.” A three-way ANOVA was conducted to analyze the effects of Study (1 or 2), Opportunity (One Opportunity or Two Opportunities), and Justification (Justification or No Justification) on raffle tickets given at Time 2. Importantly, there was not a three-way interaction between Study, Opportunity, and Justification on raffle tickets,  $F(1, 244) = .015, p = .904, p\eta^2 < .001$ , so Study was dropped for the remaining analyses.

There was a significant two-way interaction between Justification and Opportunity on aggression,  $F(1, 244) = 15.542, p < .001, p\eta^2 = .06$ . Examining the effects of Opportunity separately on those who were transgressed against or not, there was a significant difference in aggression for participants who were given a justification,  $F(1, 244) = 4.678, p = .032, p\eta^2 = .019$ . Those who were given two opportunities gave fewer raffle tickets ( $M = 3.62, SD = 2.52$ ) than those who only received one opportunity ( $M = 4.56, SD = 2.68$ ). There was also a significant difference for participants who were not given a justification,  $F(1, 244) = 11.880, p = .001, p\eta^2 = .046$ . Among participants who were not transgressed against, those given two opportunities gave more raffle tickets ( $M = 4.87, SD = 2.35$ ) than those who were given one ( $M = 3.62, SD = 2.10$ ) opportunity.

A summary of the meta-analysis of raffle tickets kept in both studies is shown in Figure 4.

## **Discussion**

Although Study 1 and Study 2 showed different patterns of results on their own, combined they show a somewhat different pattern. Consistent with the original hypothesis about justified aggression, participants who were given the justification for aggression gave fewer raffle tickets to their partner when given an additional opportunity to do so. The pattern of results was similar for the two separate studies for participants who were not given a justification. That is, their behavior was less aggressive when they were given two opportunities to harm their partner.

### **General Discussion**

There was a significant interaction effect for both studies analyzed separately and combined. The original hypothesis that justified aggression would increase at Time 2 was not supported in Study 1 or 2 individually, but was supported in the more sufficiently powered meta-analysis. For unjustified aggression, the pattern was different from what we originally hypothesized. Rather than number of opportunities having no impact, aggression significantly decreased at the second opportunity.

### **Increases in Justified Aggression**

The increase in justified aggression at Time 2 is consistent with theorizing that motivational strength for a goal increases as one gets closer to that goal. Thus, participants who had the opportunity to deny their transgressor up to \$10 may have felt closer to achieving their aggression-related goals and were, therefore, the most motivated to aggress again at a later time. This is an important finding because it demonstrates for the first time that an initial opportunity for aggression can increase subsequent aggression and not just negative affect and rumination (Carlsmith et al., 2008) or that rumination increases revenge (Bushman, 2002).

One possibility is that taking revenge initially increases the extent to which the victim ruminates on the transgression or transgressor. This increased rumination may drive later revenge. This would be consistent with the research by Carlsmith and colleagues (2008), who found that taking revenge initially against a transgressor increased rather than decreased rumination about the transgressor and Bushman (2002) who found that ruminating on a transgression increases revenge later. If rumination is what drives later aggression, then distracting participants from thoughts about the transgression or transgressor by giving them an unrelated task to complete should stop the aggression cycle. However, the procedure employed by the present research suggests that this may not be the case. Specifically, participants were at least partially distracted after their initial opportunities for revenge by having to complete filler tasks.

These results provide evidence that one consequence of aggression is increased aggression at a later time. Though aggression in the form of revenge may serve to decrease the probability that the transgressor will offend again (McCullough, 2008), it also decreases the extent to which the victim is able to forget about the transgression and move on. In fact, future research might examine the extent to which taking revenge a second time for a single transgression contributes to the transgressor feeling the need to retaliate in turn creating a vicious cycle of harm. In addition, measures of negative affect before a transgression occurs may better illuminate the likelihood to take an initial opportunity to aggress. The benefits of understanding how these types of processes contribute to ongoing conflicts with escalating violence could be substantial.

### **Decreases in Unjustified Aggression**

The finding that unjustified aggression decreased at a second opportunity is consistent with Zhong and colleagues' (2009) description of moral licensing. Importantly, the pattern of decreased unjustified aggression was replicated for both studies, in different countries, and for both studies combined.

Since Time 1 aggression had no relationship to Time 2 aggression or Time 3 aggression and avoidance motivations, there is some evidence that the mere presence of an aggression opportunity at Time 1 can shift ethical balance and lead individuals to want to compensate for their previous unethical behavior. The subsequent increase in aggression and avoidance motivations at Time 3 for participants who were generous at Time 2 denotes a shift back in the opposite direction. After helping a partner by providing them with more resources, a potential aggressor may feel no need to express intentions to continue their generosity at the next opportunity.

In these studies, there were no measures of the specific processes tied into moral balancing across opportunities. For Cornelissen and colleagues (2013), the tendency toward moral balancing or consistency was moderated by ethical mindset. In Study 2 here, the pattern consistent with moral licensing was only found for participants who did not receive a justification. Future research could investigate the impact of these and other moderators on willingness to act aggressively and express aggressive thoughts at multiple opportunities. Conversely, more measures of both aggressive intentions and aggressive behaviors could clarify when these are and are not consistent with each other.

The tendency of people to take opportunities for aggression even when there is no provocation to justify aggression should also be explored. Opportunities to harm others occur

often and unpredictably. If individuals act aggressively when they feel no moral obligation not to, future studies should find ways to guard against unjustified aggression.

### **Conclusions**

The results of these two studies indicate that people take opportunities to be aggressive differently depending on whether they receive a justification for aggression or not. The finding that justified aggression escalates across multiple opportunities can be further explored to assess when initial aggression brings individuals closer to an intended revenge goal. The finding that unjustified aggression decreases across opportunities can be explored to investigate how the mere presence of an aggression opportunity creates a need to act less aggressively later. The contrary self-reported motivations at the final opportunity present possibilities to further explore how moral licensing affects the use of aggression opportunities.

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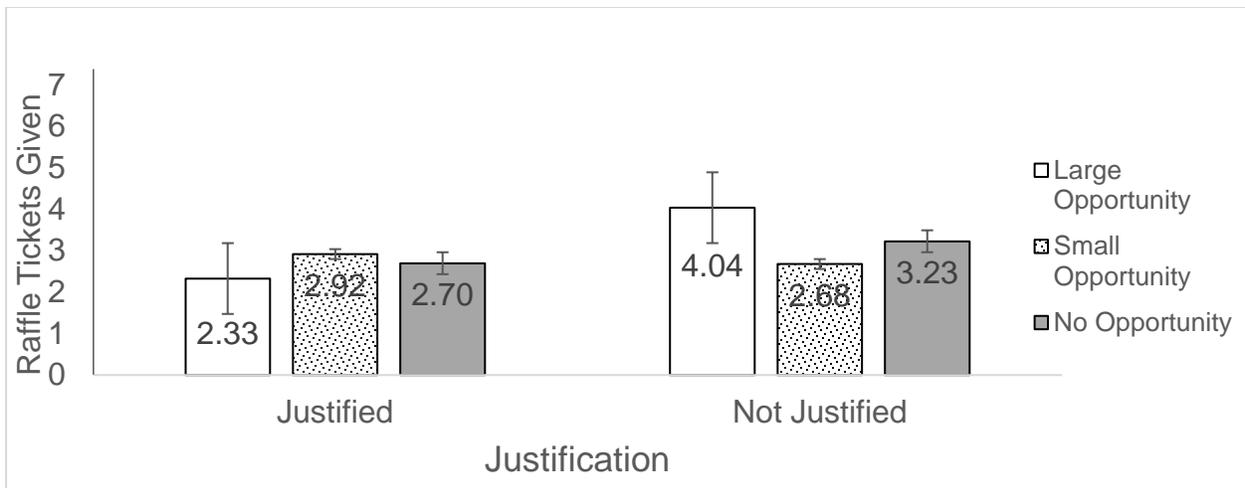
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Table 1. Summary of Conditions in Study 1.

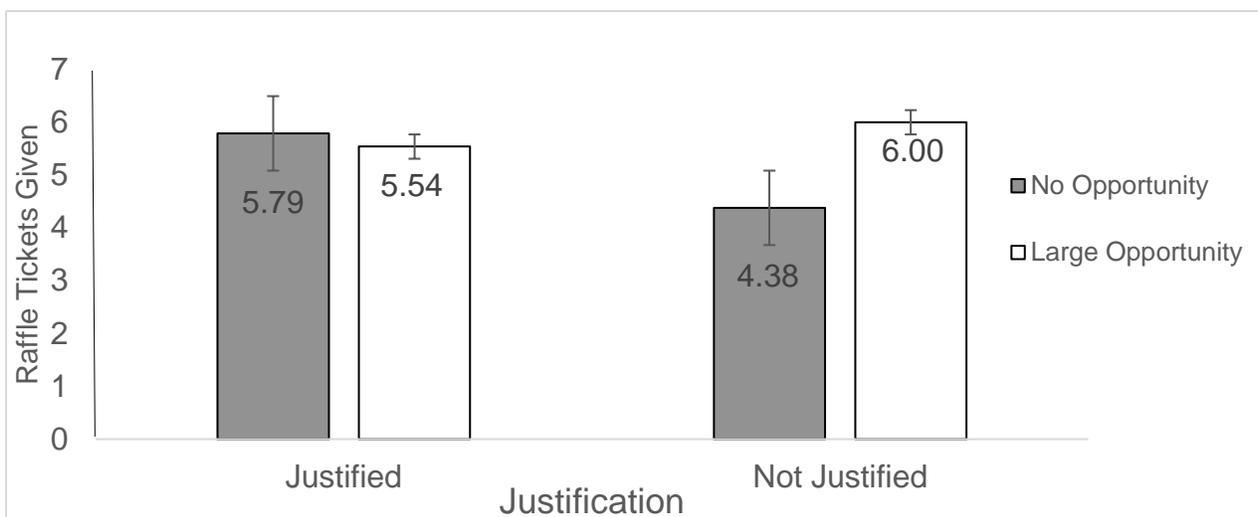
	Justification	No Justification
No Opportunity	Insult/transgression from partner to justify aggression; opportunity to deny partner raffle tickets only	Neutral message from partner; opportunity to deny partner raffle tickets only
Small Opportunity	Insult/transgression from partner to justify aggression; opportunity to deny partner up to \$1 at initial opportunity	Neutral message from partner; opportunity to deny partner up to \$1 at initial opportunity
Large Opportunity	Insult/transgression from partner to justify aggression; opportunity to deny partner up to \$10 at initial opportunity	Neutral message from partner; opportunity to deny partner up to \$10 at initial opportunity

Table 2. Summary of Conditions in Study 2.

	Justification	No Justification
No Opportunity	Insult/transgression from partner to justify aggression; opportunity to deny partner raffle tickets only	Neutral message from partner; opportunity to deny partner raffle tickets only
Large Opportunity	Insult/transgression from partner to justify aggression; opportunity to deny partner up to \$10 at initial opportunity	Neutral message from partner; opportunity to deny partner up to \$10 at initial opportunity



*Figure 1.* Mean Raffle Tickets Given in Study 1. The mean number of raffle tickets given at Time 2 is shown for each condition.



*Figure 2.* Mean Raffle Tickets Given in Study 2. The mean number of raffle tickets given at Time 2 is shown for each condition.

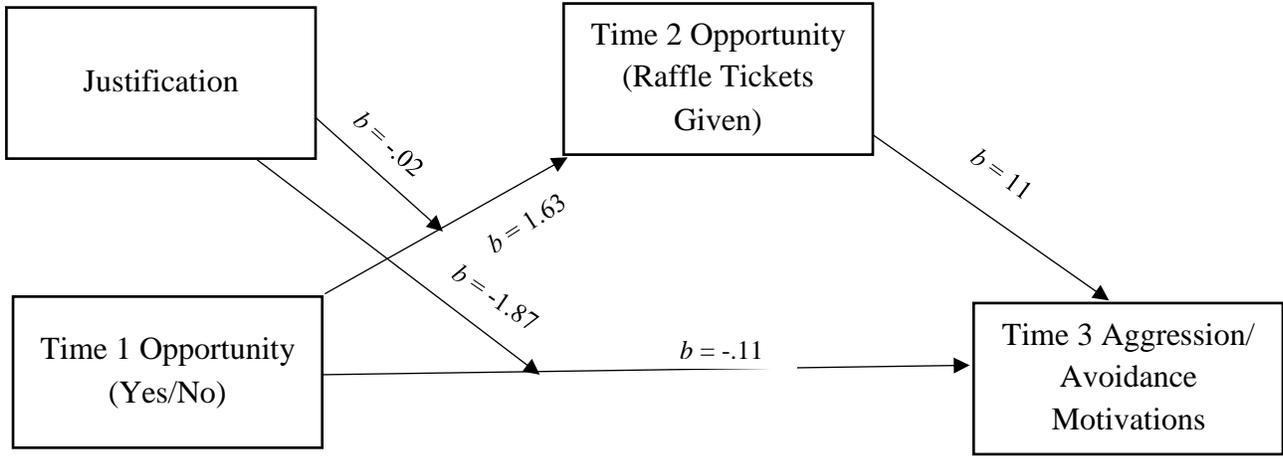


Figure 3. Moderated Mediation Model: Justification, Opportunity, Aggression, Times 1-3. The model for moderated mediation shows the relationships between aggression at Times 1, 2, and 3 for participants with and without justification.

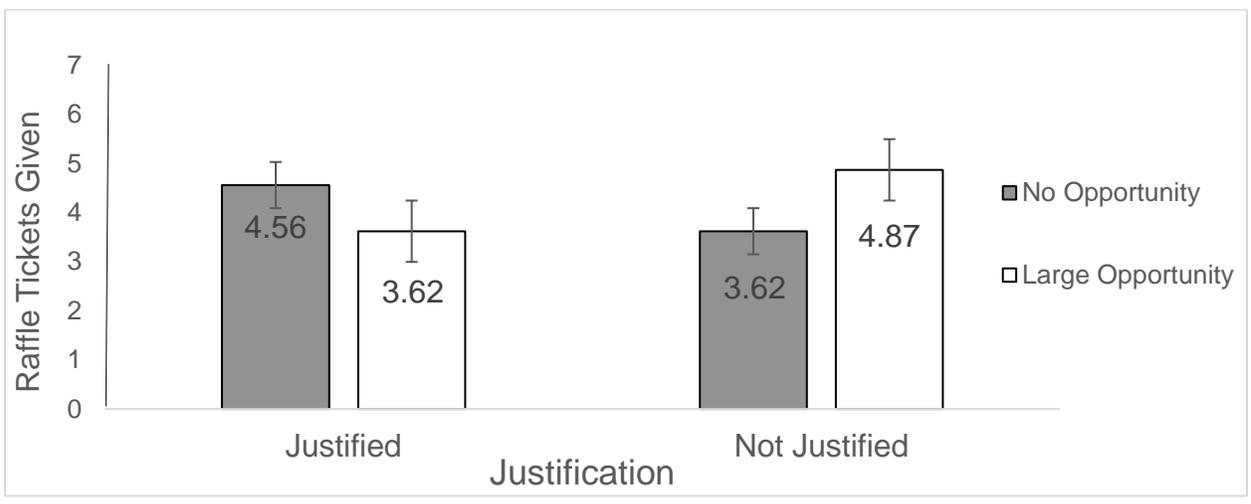


Figure 4. Mean Raffle Tickets Given: Internal Meta-Analysis

### Vita

Kristen completed her Bachelor of Science in Psychology and Religion at The Florida State University in 2013, before moving to join the MSGP Program at the University of North Florida. During her time at UNF, she worked as a graduate teaching assistant for Research Methods Lab and as a graduate student office assistant for the Department of Psychology. In 2015, she was thrilled to be awarded the APA Division 36 Research Seed Grant, for her research on God representations. In January, she presented the data presented in this thesis at the 2015 meeting of the Society of Personality and Social Psychology in San Diego, California.