

THE EFFECTS OF POST-TRANSGRESSION RESPONSES ON APOLOGY

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Abstract

Individuals struggle with the process of apologizing following a transgression. The present research examined how victims' post-transgression response (PTR; forgiveness, grudge, revenge) interacts with PTR expression (direct and indirect) to affect offenders' willingness to apologize. Additionally, social pain and self-control were tested as potential mediators within this relationship. Using an undergraduate sample ($N = 197$) and an experimental design, results demonstrated that victims' PTRs interacted with PTR expression to differentially affect offenders' apologies. Indirect forgiveness and direct unforgiveness (grudge and revenge) were more likely to facilitate a willingness to apologize compared to direct forgiveness and indirect unforgiveness. Moreover, a moderated-mediation analysis demonstrated that social pain mediated the relation between victim PTRs and PTR expression on apology for participants who received direct PTR expressions. Specifically, when expressed directly, unforgiving responses led offenders to experience greater social pain, which in turn, made them more willing to apologize. Further, those who received indirect forgiveness compared to direct forgiveness also generated social pain, which in turn, prompted higher apology. Self-control did not mediate the relation. Implications for victims' PTRs, how they are expressed, and offenders' apologies are discussed.

Dedication

This thesis is dedicated to my family who has supported me throughout every step of my life and academic career in every way possible and imaginable. I would not be the son, brother, person, and researcher I am today without each of them. Thank you to my mother Carmela Guilfoyle, father Lloyd Guilfoyle, and brother David Guilfoyle.

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is probably largely self-imposed), or getting the rest I needed to perform at my best. They always stood by me and my ultimate goals. Thank you for being there and supporting me, helping me relax, propping me up, being confidants, and good company. As this thesis will explain, social relationships are one of the most important things in life, I truly subscribe to this notion, and I thank you all for being there and having me.

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Introduction

A focal pursuit of human beings is to form, develop, and maintain interpersonal relationships (Baumeister & Leary, 1995). However, during the course of building relationships, individuals inevitably commit transgressions that hurt one another and jeopardize their social bonds. Fortunately, a growing body of research has demonstrated that two related interpersonal mechanisms, namely the apology and forgiveness processes, can facilitate the repair of relationships following a transgression and enable reconciliation (Darby & Schlenker, 1982; McCullough, 2008; McCullough, Pargament & Thoreson, 2000). The purpose of this thesis was to focus on the process of apology with three specific goals: (1) to explore how victims' post-transgression responses (PTRs) affect offenders' apologies, (2) to test the moderating role of PTR expression, and (3) to test the mediating roles of offenders' social pain and self-control on the moderated relation between victim PTRs and the apology process. Given the importance of apologies in repairing damaged relationships, it is important to better understand the interpersonal and intrapersonal factors that affect them.

Victim and Offender Post-Transgression Responses (PTRs)

Interpersonal transgressions jeopardize the success of relationships and may lead to their dissolution. However, people often want or need to maintain important social relationships despite conflict. As a result, victims and offenders have developed a number of post-transgression responses to serve their self-protective needs while maintaining their relationships (McCullough, 2008). Victims of transgressions, for instance, are often trying to deter offenders from committing future misdeeds, whereas offenders are trying to allay these concerns for victims. Thus, there can be considerable overlap between the interpersonal goals of victims and offenders following a transgression and the tools used to accomplish these goals. However, there

can also be discrepancies between victims' goals and the goals of transgressors which may be detrimental to the process of apologizing.

Victims' PTRs

Common PTRs for victims include offering forgiveness, harboring a grudge, and seeking revenge. Specifically, *forgiveness* is a motivated decision to let go of one's legitimate right to be angry or resentful toward an offender and to transform this negative sentiment into positive sentiment (Darby & Schlenker, 1982; McCullough, 2008; McCullough et al., 2000). Although forgiveness is generally believed to be adaptive as it has the ability to repair relationships, reduce negative affect, and improve physical and psychological well-being (Eaton & Struthers, 2006; Lawler et al., 2005), it can also be maladaptive as it can encourage future transgressions (Luchies & Finkel, 2011; McNulty, 2011). When victims of a transgression forgive too readily, it can give license rather than deterrence to offenders to continue transgressing (McNulty, 2011). Thus, despite the positive benefits of forgiveness, it can ironically backfire and have maladaptive consequences.

A *grudge* is a motivated decision to maintain negative feelings toward the offender which enables the victim to be vigilant against future transgressions (Witvliet, Ludwig, & Vander Laan, 2001). They usually involve rumination about the transgression and offender. Although research on grudge is relatively scant, it appears that such responses are employed by unforgiving victims who possess low levels of social power (Khoury, 2014) as they enable victims to regain a sense of control or the ability to "save face" when they are otherwise powerless (Baumeister, Exline, & Sommer, 1998; Witvliet, Ludwig, & Vander Laan, 2001). Grudges can also be adaptive as they enable victims to maintain a level of vigilance against future transgressions. They help protect victims from future transgressions by sending a signal to offenders and others that such offenses

will be met with harsh undesirable judgments, and they usually involve an element of public exposure of the transgression to others, amplifying such judgments (Exline & Baumeister, 2000). However, grudges are also maladaptive as they can facilitate estrangement, limit relationship repair, and adversely affect well-being (Witvliet, Ludwig, & Vander Laan 2001) leading to reductions in well-being and overall life satisfaction (Messias, Saini, Sinato, & Welch, 2010).

Revenge is a motivated decision to return harm for harm (McCullough, Pargament & Thoreson, 2000; McCullough, 2008). It sends a signal to the offender and others that transgressions will not be tolerated and future transgressions will be met with retaliatory consequences. Therefore, they can be adaptive as they deter future and repeat offenses. However, revenge also carries with it maladaptive consequences such as escalating the conflict (Kim & Smith, 1993), adverse psychological effects such as depression and negative affect (McCullough, Bellah, Kilpatrick, & Johnson, 2001), and adverse effects on an offender's health (Lawler et al., 2005) and quality of life (McCullough et al., 2001).

In sum, it is generally assumed that forgiving responses facilitate apologetic responses whereas unforgiving responses trigger non-apologetic responses. Despite this presupposition, victims' forgiving PTRs might have unanticipated maladaptive effects on offenders' apologies and unforgiving PTRs might have adaptive effects on offenders' apologies.

Offenders' PTRs

Like victims of offenses, offenders also have a number of PTRs available to them following transgressions, such as justifying, excusing, redirecting, diminishing, or denying their responsibility for their transgression. However, offenders also have a prosocial PTR in offering an apology for their wrongdoing. Apologizing is a process in which offenders acknowledge offenses, take responsibility for them, express remorse, say they are sorry, and offer a remedy

(Kirchhoff, Wagner, & Strack, 2012; Lazare, 2004; Sandage, Worthington, Hight, & Berry, 2000; Tavuchis, 1991). Apologies are prosocial and have social benefits. When victims receive an apology from offenders, they are more likely to forgive the offender and ultimately reconcile (Exline, Deshea, Holeman, 2007; McCullough, Pargament, & Thoreson, 2000). Furthermore, apologies lead to reductions in psychological aggression (Eaton & Struthers, 2006) and anger (Kirchhoff, Wagner, & Stack, 2012; Thomas & Miller, 2008).

Despite the benefits of apologizing, it is a difficult process to initiate and carry out because offenders often fear harsh judgments and retaliation from victims (Exline & Baumeister, 2000; Exline, Deshea, Holeman, 2007; Howell et al., 2012; Kiger, 2004; Struthers et al., 2008; Tavuchis, 1991). This suggests that victims can play an important role in promoting or preventing apologies from offenders as they can increase or decrease such concerns. As such, victims' PTRs are one interpersonal factor that has begun to attract researchers' attention in affecting offenders' apologies (Kelln & Ellard, 1999; Shnabel & Nadler, 2008; Struthers, Eaton, Shirvani, Georghiou, & Edell, 2008).

Much in the same way that offenders' PTRs can influence victims' PTRs (e.g., apology affecting forgiveness), victims' PTRs can also influence offenders' apologies (e.g., forgiveness affecting apology). In other words, victims' responses can play a large role in promoting or preventing apologies from offenders. For example, Kelln and Ellard (1999) demonstrated that the victims' response had an effect on the level of remedy from offenders, a key component to the apology process. When victims forgave, offenders were more compliant with the victims' requests for assistance. Conversely, when victims sought retribution, offenders were less likely to comply with requests for assistance. They argued that forgiveness created an imbalance in the relationship (i.e., a good for a harm), which motivated the offender to rebalance the relationship

by returning a good for a good. Similarly, Shnabel and Nadler (2008) have demonstrated that when victims offer offenders a message of *acceptance*, wherein they accept the transgression and the offender, it in turn makes the offender more willing to offer an apology. Lastly, Struthers et al. (2008) have demonstrated that if offenders were offered forgiveness, expressed indirectly, it facilitated apology relative to explicit expressions of forgiveness. It also showed a main effect for forgiveness on apology, relative to holding a grudge or not replying. In sum, this research suggests that victims' PTR responses can play a role in offenders' willingness to apologize. However, it is still unclear *when* and *why* specific victims' PTRs lead to an increase or decrease in offenders' apology.

Victims' PTR and Moderating Role of PTR Expression

As evidenced by Struthers et al. (2008), offenders' apologies can be affected by a function of the way the PTRs are expressed by the victim. Exline and Baumeister (2000) differentiated between direct and indirect expressions of victim PTRs. Operationally, direct expressions of PTRs acknowledge the response (e.g., forgiveness, grudge, and revenge) and the transgression. For example, direct forgiveness might include the following statement "I *forgive* you for *being late*"; it directly references the victim's PTR response (i.e., forgiveness) and acknowledges the transgression or wrongdoing (i.e., being late). In contrast, indirect expressions of PTRs do not reference the victim's response or acknowledge the transgression, but rather imply it. For example, an indirect forgiveness response might include the following statement "Hey, no worries, it's no big deal". Struthers and colleagues also showed that explicit expressions of forgiveness can backfire, producing fewer apologies from offenders. However, researchers do not know *why* victims' PTRs and PTR expression interact to produce differential effects on apologies.

Mediators: Social Pain & Self-Control

Social pain. One possible explanation for why victims' PTRs and PTR expression might interact to influence apologies is offenders' social pain. Operationally, social pain refers to a self-focused emotional response to being socially excluded or devalued by a person that one desires to be connected with. Social pain can manifest itself in self-focused negative emotions such as embarrassment, shame, and guilt (MacDonald & Leary, 2005). Like physical pain, it serves as an aversive signal that one may be, or has been, excluded or devalued by a person or group and motivates avoidant or approach behavior to act in ways to reduce the threat. Being excluded is an evolutionary disadvantage whereas being included is an evolutionary advantage because having strong social bonds and developing large social groups enables individuals to meet their basic needs for safety, survival, and gene-promotion (Baumeister & Leary, 1995; MacDonald & Leary, 2005). Social pain acts as a signal that one may be excluded and motivates individuals toward avoidant or approach behavior. People will be motivated to engage in avoidant behavior to reduce social pain, such as distancing themselves from, or devaluing the relationship of, those who exclude them. They can also be motivated toward approach behavior and work on reconciliatory behavior to be socially included (MacDonald & Leary, 1995). Research has shown that when individuals experience "hurt feelings" following a response from another person, they are more likely to exhibit *acquiescent* behavior, such as apologizing, crying, or conceding. The less social pain a person experiences, the more likely they are to respond with *invulnerable* behaviors, such as ignoring the response or laughing (Vangelisti & Crumley, 1998). Therefore, it seems reasonable to suggest that social pain may play a role in the apology process following transgressions, particularly if victims' PTRs can increase or decrease offenders feelings of exclusion or devaluation.

In this thesis I argue that victims' PTRs and PTR expression will interact to differentially influence apologies because of their effect on offenders' social pain. Specifically, victim PTRs and PTR expressions that lead to apologies will do so because they elicit more social pain which motivates approach behavior. In turn, victim PTRs leading to more social pain will trigger reparative action and a greater willingness to apologize.

Self-control. Another mechanism that may explain the relation between victims' PTRs and offenders' apologies is the extent to which offenders are able to exert self-control. Self-control refers to the ability to resist and control impulses that, in the short term, feel good or are easy, but violate social norms and proper behavior that carry with them negative long-term consequences (Baumeister, Vohs, & Tice, 2007; Hagger, Wood, Stiff, & Chyzarantis, 2010). Because apologizing is a taxing process that poses personal and social risks, offenders often resist engaging in this process (Howell et al., 2012; Kiger, 2004; Tavuchis, 1991). Given this, it seems reasonable that individuals would need self-control to overcome not apologizing. In other words, resistance to, or lack of, an apology may result from self-control failure.

The Resource Model of Self-Control. In their resource model of self-control, Baumeister and colleagues argue that self-control draws on a limited and global resource of energy (Baumeister, Vohs, & Tice, 2007; Hagger, et al., 2010). Self-control failure results when resources for self-control become depleted after a period of exertion, leaving fewer resources available for subsequent acts of self-control. If apologies are expected following a transgression (Goffman, 1955) and support the long-term goal of relationship maintenance, then offenders may need self-control resources to overcome the desire to not apologize.

In this thesis, I argue that the process of apologizing requires self-control. Given that offenders resist offering apologies (Shneider, 2000; Tavuchis, 1991) and apologies can be a

taxing and risky process that may not alter harsh judgments or acts of revenge, offenders may need to exercise self-control to offer an apology. It is hypothesized that offenders' self-control resources that facilitate apologies will be affected by victims' post-transgression responses. Specifically, grudges and revenge will deplete offenders' self-control because they consume valuable resources needed to resist the desire to not apologize following a transgression. Given that grudges and revenge are threatening to offenders, they require more cognitive capacity to manage. Moreover, it is also predicted that the way victims' PTRs are expressed (i.e., directly vs. indirectly) will further deplete self-control resources because they require cognitive capacity to interpret.

Predictions

It is predicted that victims' PTRs will interact with PTR expression to produce differential effects on apology, mediated by social pain and self-control. Specifically, it is predicted that indirect expressions of forgiveness will produce more apology relative to direct expressions, similar to Struthers et al. (2008). Conversely, direct expressions of grudge and revenge relative to their indirect expression counterparts will lead to more apology. Thus, indirect forgiveness and direct grudge and revenge should lead to the highest levels of apology, with the effect being mediated by high levels of social pain and self-control.

Present Research

Although Struthers et al. (2008) have shown that PTR expression partially moderates the relation between victims' PTRs and offenders' apologies, researchers do not know if PTR expression moderates all PTRs and *why* this is the case. Thus, the purpose of this Thesis is to address this gap in the empirical literature by: (1) testing how different victims' PTRs, namely forgiveness, grudge, and revenge, affect offenders' apologies, (2) extending the moderating

variable of PTR expression to victims' grudges and revenge; and (3) testing the mediating role of social pain and self-control within the victim PTR x PTR expression → apology relation.

Hypothesis 1

A main effect for victims' PTRs on offenders' apologies is predicted such that victims who forgive offenders relative to harboring a grudge or seeking revenge will be more likely to facilitate apology.

Hypothesis 2

An interaction effect between victims' PTRs and PTR expression on apology is expected. Specifically, indirect expressions of forgiveness and direct expressions of grudge and revenge are predicted to lead to more apology compared to direct expressions of forgiveness and indirect expressions of grudge and revenge.

Hypothesis 3

The interaction effect between victims' PTRs and PTR expression on apology will be mediated by social pain and self-control, such that those responses leading to more apology will be a result of more social pain and self-control.

Method

Design

This study used a 3 (victim PTR: forgive, grudge, revenge) x 2 (PTR expression: direct and indirect) between group design. Both the independent variable (victim PTR) and moderating variable (PTR expression) were manipulated and participants were randomly assigned to conditions.

Participants

Participants for this study were a sample of York University undergraduate students recruited from the Undergraduate Research Participant Pool (URPP). Based on a power analysis to attain 80% power with a medium effect (Cohen's $d = 0.50$), a 0.05 alpha, and 2 df, 216 participants were tested in this study. Although 216 participants completed the study, 19 participants did not complete the questionnaire items or incorrectly completed the reaction timed tests, and were dropped from subsequent analyses. Therefore, the total sample size for this study was 197. The sample had a mean age of 19.88 ($SD = 2.99$) with a minimum age of 17 and a maximum age of 43 years (range = 26) (54.82% female, 45.18% male). The sample was diverse in ethnicity (25.38% Caucasian, 24.37% South Asian, 18.27% Black, 23% East Asian, 8.63% Middle Eastern, 4.06% Latin American, and 7.62% who identified as 'Other'/'Don't know', 7.62%), and religion (41.12% Christian, 16.75% Muslim, 12.18% Atheist, 7.61% None, 6.09% Hindu, 4.06% Jewish, and 12.18% Other). Participants were moderately high in religiosity, on a 7-point scale from 1 (*not at all*) to 7 (*very much so*). Each participant received credit toward their introductory psychology course grade in exchange for their participation.

Materials and Procedures

The study was conducted in a laboratory. The researcher introduced himself as a graduate student in psychology running this study as part of a larger program of research directed by a faculty member. The researcher then explained that everything for the study would take place on the computer directly in-front of them. They then explained to the participant that the study was on virtual teams and one-way communication.

“This is a study on virtual teams and one-way communication. Virtual teams are groups or teams of people who work together online, but never meet in person. We're interested

in virtual teams because a large part of the workforce uses virtual teams these days as we become more and more globalized; I'm sure you've heard the phrase "telecommuting" to work before. To explore virtual teams today, you will be forming a virtual team with a partner. Your partner is another participant who is much like yourself, a first-year psychology student, and is in a similar lab to this one. They are receiving the same instructions that you are and are seated at a similar table, using the exact same computer application. In order to examine how virtual teams work together, you and your partner will be competing against another two person virtual team in a game of Boggle [Boggle Instructions]. Those partners are also receiving the same instructions you have now and are separated from one another. This study will also be exploring one-way communication.

One-way communication is when only one person can communicate at a time, and the receiver must wait for a response. This is a lot like e-mail, which I'm sure you're used to, where the communication is one-way, and the respondents don't reply in real-time like Text Message or WhatsApp, but rather one-way at a time.

Additionally, if you are successful in today's game with your partner, you will be eligible for a grand-cash prize, but you may be asked to come back at a later date to participate in this study again. It's often hard to get participants to come back to the study so we offer cash prizes if you're successful to come back again as added incentive. This is also good because you're already familiar with the study and you also have an opportunity to gain additional URPP credits."

After asking the participant if they understood the instructions and the participant responded in the affirmative, the researcher told them to wait while they called the other researcher in the

other lab who was ostensibly giving the same instructions to their partner. The researcher then left the room but left the door open. They sat down in the computer chair, picked up the receiver of the telephone, and ensured that they audibly hit buttons on the telephone. In reality, they were holding the tone-button down to ensure that the line was not active. They then pretended to speak to the other researcher, and told them they had just given their participant the instructions and were ready to begin, and asked if they their partner was ready to begin as well. The researcher then pretended to engage in “small-talk” with the other researcher in an effort to make the phone call sound genuine, let out a friendly laugh at the end, and signed off with “Okay, I’ll talk to you soon” and hung-up the phone. The researcher then took a moment to write on a piece of paper. Following this, the researcher went back into the room with the participant and told them they got off the phone with the other researcher and that their partner was also ready to begin and get started. They then asked the participant if they had any last minute questions. If they responded in the negative, the researcher pressed “run” in MediaLab (Empirisoft, 2012), stepped outside and shut the door to the room, and let the experiment run its course. During this part of the study, participants answered pre-screen questions such as demographics, completed the Boggle game, received the false-feedback, and received the ostensible victim response by PTR expression from their partner.

Transgression and false-feedback. Through a computer-programmed application, the participants were led to believe they would be engaging in a team-based Boggle game with a “partner”. In reality, the computer-programmed application was programmed to send responses to the participants, ostensibly as their partner. The participants were led to believe that their partner and they formed a dyadic team that was competing against another dyadic team situated in another lab within the same building; the second dyadic team was fictional. The computer-

programmed application was rigged so that the participant and their partner lost the boggle game because of the participants' poor play. Participants were then provided false feedback about their poor personal performance which caused their team to lose. Participants received a message summarizing each team player's score clearly indicating they were responsible for the loss. Additionally, the participant received a message reading: *"Your individual score places you in the **bottom 40%** of all Boggle players competing in this study. Mike's [their partner] individual score places him in the **top 5%** of all Boggle players competing in this study. Due to this loss, both you and Mike are now out of the competition for the grand prize of \$200"*.

Independent variables. Two independent variables were manipulated: victims' PTR (forgive, grudge, revenge) and PTR expression (direct and indirect). Following the transgression by the participant, the computer-application delivered direct and indirect expressions of victims' PTR statements via computer message to the participant, ostensibly from their partner. They were instructed that their partner would deliver the first message as they scored higher in the game.

Forgiveness. Following the transgression by the participant, the computer application delivered the indirect and direct expressions of the forgiveness PTR responses to participants via computer message. **Indirect forgiveness** *"By the way... Oh well, no worries. It could happen to anyone"* and **direct forgiveness** *"By the way... Your scores pretty much lost me the game and winning the \$200... Oh well, no worries. I forgive you"*.

Grudge. Following the transgression by the participant, the computer application delivered the indirect and direct expressions of the grudge PTR response to participants via a computer message. **Indirect grudge** *"By the way... This will be a tough one to let go of"* and

direct grudge condition the confederate will say, *“By the way... Your scores pretty much lost me the game and winning the \$200... I’m definitely holding a grudge against you”*.

Revenge. Following the transgression by the participant, the computer application delivered the indirect and direct expressions of the revenge PTR response to participants via computer message. **Indirect revenge** *“By the way... I’ll be keeping all those ballots for myself”* and **direct revenge** *“By the way... Your scores pretty much lost me the game and winning the \$200... I’m not going to give you any of those ballots as revenge”*.

Following the response by their partner, they were prompted to get the researcher to load the next part of the experiment. The researcher then went into the room with a neutral expression and tone, and explained the basic procedure of the Stroop test to ensure participants were paying attention and not using their cell phones.

Self-control. Self-control was assessed using a Stroop test (Stroop, 1935) which has been shown to be a reliable and valid dependent measure of self-control strength (c.f., Hagger et al., 2010). The Stroop test is a reaction-time test that presents participants with words of colors presented in congruently and incongruently matched colored ink relative to the words semantic meaning. It requires participants to correctly identify the color of the ink used rather than read the word color. Overriding the initial impulse to read the word and say the color of the ink requires self-control. Self-control deficits are represented by longer latencies for participants to correctly identify the color of the ink and errors made. The test procedure followed guidelines indicated by MacLeod (2005). Participants were instructed to press one of four buttons in which the keys had been overlaid with four colors: red, blue, green, and orange (keys used: ‘z’, ‘x’, ‘.’ and ‘/’). They were instructed to select the color key that matched the ink color of the words presented. They were also instructed to respond as quickly as possible while avoiding errors. The

test began with a practice block that contained 20 trials consisting of “XXXXX” in one of the four colored inks to get participants familiar with the task and acclimated to the controls. In total, there were six critical blocks, each with 12 trials for a total of 72 trials. The first three critical blocks (36 trials) were “congruent” blocks; the ink color matched its semantic meaning to establish a baseline measure of participants’ reaction times. The last 3 critical blocks were “incongruent” blocks, where the ink color of the word was different than its semantic meaning. The state self-control composite variable was created using the difference scores (Δ -scores) between the incongruent and congruent blocks of the Stroop task; lower scores are indicative of quicker reaction times. As reaction times are measured in milliseconds, scores are usually negative which provides counter-intuitive directions when examining means and figures. Thus, we multiplied all scores by -1 to produce positive difference scores, such that quicker reaction times were indicative of higher self-control and more self-control resources.

The researcher then loaded the Stroop test via Direct RT (Empirisoft, 2012), and Direct RT and Media Labs computer-application guided the participant throughout the rest of the study, including the Stroop test, the IAT, and the self-report questionnaire containing the mediator and dependent variable items.

Social pain. Social pain was measured using a 7-item self-report measure assessing self-focused emotions associated with social pain, such as embarrassment, guilt, shame, and threat/stress, r range = .44 to .74, $M = 3.47$, $SD = 1.30$, $\alpha = .88$. Embarrassment item was “*I feel embarrassed for losing the Boggle game and prize for my partner*”. Shame and guilt items were adapted to our current study from The State Shame and Guilt Scale (Marschall, Saftner, & Tangney, 1994). The guilt item was “*I cannot stop thinking about what I have done to my partner*” and the shame items included: “*I feel bad about something I have done*” and “*I feel a*

little humiliated for losing the Boggle game and prize for my partner". Lastly, the threat/stress items were *"I feel threatened by my partner for losing the Boggle game and his or her prize"* and *"I feel stressed for losing the Boggle game and prize for my partner"*.

Implicit apology. An apology implicit association task (IAT) was created and used to assess implicit apology (Greenwald, McGhee, & Schwartz, 2005). The apology IAT is a reaction time measure that assesses the strength of the association between the participant and apologetic vs. non-apologetic concepts. In accordance with IAT procedures, participants completed four critical blocks. In the first block, participants were instructed to categorize two words (apologetic vs. non-apologetic) along with six apologetic words (e.g., apology, repair, sorry) and six non-apologetic words (e.g., stubborn, rigid, pride). In the second block, participants categorized two words (self vs. other) along with four self-pronouns (e.g., I, me, mine) and four other pronouns (e.g., them, their, other). In the third block, participants had to categorize two-sets of two word combinations (apologetic + self vs. non-apologetic + other) with pairs of corresponding apologetic words and self-pronouns (e.g., mine + apologetic, I + sorry) and pairs of non-apologetic words and other pronouns (e.g., stubborn + they, their + rigid). In the final block, these four words were reversed (apologetic + other vs. nonapologetic + self). All blocks required the participant to use 'e' and 'i' keys to correctly categorize the words with their corresponding family. When participants made correct responses they were presented with a blank screen for 1000 ms before the start of the next trial. When the participants made incorrect responses they were presented with a red "X" in the center of the screen until they hit the correct key. IAT scores were calculated as the difference scores (Δ -scores) of the critical blocks. The composite variable was created using the difference scores (Δ -scores) of the critical blocks multiplying

them by -1, such that higher scores on the IAT reflect greater facilitation of responses when the apology and self-concepts share the same key, and therefore, greater levels of implicit apology.

Explicit apology. Explicit apology was measured using four self-report items. The participants used a 7-point scale to indicate the extent to which they strongly agreed or disagreed with the critical items, r range = .23 to .78, $M = 4.87$, $SD = 1.20$, $\alpha = .76$. Items included, reconcile: “*If my partner was willing to play another game of Boggle, I would like to*”, sorry: “*I am sorry for what happened*” and two apology items: “*I feel like apologizing to my partner*” and “*I want to apologize to my partner*”.

Manipulation Checks

To assess whether or not individuals perceived the experimental manipulation of victims’ PTR, we included three single-items embedded within the self-report questionnaire (i.e., one-item per PTR response) asking whether or not their partner forgave them, held a grudge, or sought revenge against them as a result of losing the boggle game. A manipulation check to assess if participants felt they committed a transgression, how responsible they were, and how much they were to blame was also included. Items were, “*I am responsible for what happened between my partner and I*”, “*The main cause of what happened was something that was controllable by me*”, “*I am at fault for what happened between my partner and I*”, “*I had control over what happened between my partner and I*”, “*I feel accountable for what happened*”, “*It was important for me to have won the game and helped my partner win \$200*”, “*I think I am to blame for what happened*”, and “*I feel concerned for my partner*”.

Following completion, the participant notified the researcher they were finished. The researcher then debriefed them and thanked them for their time and distributed their bonus credit.

Results

Variable Construction

In addition to the variables listed, based on positive inter-item correlations and acceptable levels of internal consistency, composite variables were created by averaging the item scores for the following: event impact, r range = .36 to .68, $M = 4.84$, $SD = 0.96$, $\alpha = .75$; trait apology, r range = .42 to .49, $M = 4.62$, $SD = 1.18$, $\alpha = .64$; and trait self-control r range = .31 to .61, $M = 4.07$, $SD = 0.92$, $\alpha = .84$. The zero order correlations between all key variables and descriptive statistics are reported in Table 1 and Table 2, respectively.

Manipulation Checks

The manipulations were confirmed next: impact of the event and victim PTR. The first manipulation examined concerned the participants' perception regarding the impact of the event. A 2-way victim PTR (3) by PTR expression (2) ANOVA was conducted on the impact manipulation check variable. No significant main effects for victim PTR, $F(2,191) = 0.45$, $p = 0.50$, $\eta^2 = 0.002$, PTR expression, $F(2,191) = 0.76$, $p = 0.46$, $\eta^2 = 0.007$, or interaction effect, $F(2,191) = 1.14$, $p = 0.32$, $\eta^2 = 0.011$, was found. As anticipated, there were no significant differences in participants' perception of the impact of the event. All participants perceived the transgression as having a negative impact on them, $M = 4.83$, $SD = 1.51$.

The extent to which the participants in the different PTR conditions perceived the victim's response as such was tested next. One way PTR ANOVAs were examined on each of the PTR manipulation check measures. A significant PTR ANOVA was found for the forgiveness manipulation check, $F(2, 191) = 141.06$, $p < 0.001$, $\eta^2 = 0.59$, the grudge manipulation check, $F(2, 191) = 56.87$, $p < 0.001$, $\eta^2 = 0.37$, and the revenge manipulation check, $F(2, 191) = 52.70$, $p < 0.001$, $\eta^2 = 0.35$. Participants perceived the manipulation of

Table 1
Zero Order Pearson Correlations, Means, & Standard Deviations

Scale	Trait Apology	Trait SC	State SC	Social Pain	Apology IAT	Apology
Trait Apology	---	0.60*	-0.09	-0.24*	0.10	-0.03
Trait SC		---	-0.07	-0.25*	0.01	0.01
State SC			---	0.16*	-0.08	0.08
Social Pain				---	0.03	0.52*
Apology (IAT)					---	0.01
Apology						---

* = $p < 0.05$

Table 2
Means, & Standard Deviations

Scale	<i>M</i>	<i>SD</i>	α
Trait Apology	4.62	1.19	.64
Trait SC	4.07	0.93	.84
State SC	80.96	103.36	---
Social Pain	3.47	1.30	.88
Apology IAT	168.05	196.64	---
Apology	168.05	1.20	.76

victims' PTR as intended for forgiveness and revenge; however, participants had trouble discerning between grudge and revenge for the grudge manipulation. See Table 3 for the means and standard deviations of the manipulation check variables as a function of the victim PTR for the different PTR conditions perceived.

Main Analyses

Before beginning the main analysis, the extent to which participants' trait apology and trait self-control varied across the different conditions was examined. A significant PTR by PTR expression interaction was found on both trait apology, $F(2, 191) = 3.38, p = 0.03, \eta^2 = 0.034$, and trait self-control, $F(2, 191) = 3.47, p = 0.03, \eta^2 = 0.035$. Thus, trait apology and trait self-control were included as covariates in the main analysis.

To test the prediction that the effect of victims' PTR on offenders' social pain, self-control, and apology (both implicit and explicit) would be moderated by the way the PTR was expressed, a series of PTR by PTR expression ANCOVAs were run on the mechanisms and dependent variables. As predicted, a significant victim PTR by PTR expression interaction was found for social pain $F(2, 189) = 6.11, p = 0.002, \eta^2 = 0.06$, and explicit apology, $F(2, 189) = 3.50, p = 0.03, \eta^2 = 0.03$. However, only a marginally significant interaction was found for self-control, $F(2, 189) = 2.91, p = 0.056, \eta^2 = 0.029$, and no significant interaction was found for implicit apology $F(2, 189) = 0.13, p = 0.87, \eta^2 = 0.001$. Given that the independent variables had no significant interaction effect on implicit apology, no further follow up tests were conducted on that dependent variable. However, because the interaction was marginally significant, $p = 0.056$, on the self-control mechanism variable, and significant on the social pain and explicit apology variables, $p < 0.05$, planned simple multiple comparisons of the simple effects were

tested on the social pain, self-control, and explicit apology variables (See Tables 4-6 and Figures 1-3 for the adjusted means of each variable).

Multiple comparisons of the simple effects using one-tailed tests were conducted to confirm the specific directional hypotheses (Bakker & Wicherts, 2011). First, the simple comparisons of PTRs at each level of PTR expression on social pain were tested. This analysis revealed that offenders who received direct forgiveness felt significantly less social pain than direct grudge, $t(59) = 2.88, p < 0.001$, and direct revenge, $t(53) = 3.53, p < 0.001$; however social pain for those who experienced direct grudge and direct revenge did not differ, $t(61) = 0.68, p = 0.25$, similar to those who received victim PTRs expressed indirectly, $ps > 0.12$. Simple comparisons for PTR expression at the different levels of PTR was such that indirect forgiveness elicited more social pain than being forgiven directly, $t(63) = -2.77, p < 0.01$. Conversely, when expressed in a direct way, revenge created more social pain than when expressed indirectly, $t(63) = -1.97, p = 0.024$, but there were no differences on social pain for grudge when expressed either directly or indirectly, $t(65) = -0.83, p = 0.20$.

To assess the simple comparisons among the independent variables on the self-control mediator, planned multiple comparisons using one-tail tests were conducted next. This analysis demonstrated a significant simple comparison between the victim PTR conditions at each level of PTR expression: people who received indirect forgiveness had greater self-control than experiencing indirect grudge, $t(58) = 1.78, p = 0.038$, and indirect revenge, $t(65) = 1.90, p = 0.029$, but there were no effects for self-control for the direct expressions of victim PTRs, $ps > 0.08$. Additionally, examining PTR expression at each level of PTR revealed those who received direct revenge and direct grudge had more self-control resources than their indirect counterparts, $t(62) = -2.51, p < 0.001$, and, $t(60) = -1.60, p = 0.054$ (marginally significant), respectively.

Table 3
Means of PTR Response Manipulation Checks

	Forgive		Grudge		Revenge	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Forgiveness MC	6.03	0.91	2.85	1.50	3.24	1.35
Grudge MC	2.41	1.22	4.73	1.95	4.58	1.40
Revenge MC	1.86	1.05	3.20	1.62	4.38	1.85

However, there were no effects for self-control when forgiveness was expressed either indirectly or directly, $t(61) = -0.79$, $p = 0.21$.

Lastly, planned simple multiple comparisons on the explicit apology dependent variable showed that those who received indirect forgiveness subsequently apologized more than those receiving indirect grudge, $t(63) = -1.93$, $p = 0.027$, or indirect revenge, $t(65) = -1.89$, $p = 0.03$. Those who experienced direct grudge were more likely to apologize than people who received direct forgiveness, $t(63) = 1.62$, $p = 0.05$, but there were no differences for apology between direct revenge and direct forgiveness, or direct revenge and direct grudge, $ps > 0.16$. Furthermore, a simple comparison between PTR expressions at each level of PTR showed that those who received indirect forgiveness demonstrated more apology than those who received direct forgiveness, $t(62) = -2.08$, $p = 0.019$, but PTR expression did not affect differences on apology for the other PTRs, $ps > 0.07$.

Moderated-Mediation Analyses

Using Hayes (2012) process analysis, the moderated-mediated effect (Muller, Judd, & Yzerbyt, 2005) between victim PTR and PTR expression on apology with social pain and self-control as the mediators was tested. Moderated mediation, or condition indirect effects, occurs when the treatment effect of an independent variable, in this case victim PTRs, on an outcome variable, (e.g., apology), via a mediator, (e.g., social pain or self-control), differs depending on levels of a moderator variable, (e.g., PTR expression). Because there were no statistical differences between grudge and revenge for the mediated effect, both conditions were collapsed into a single *unforgiveness* condition and recoded our PTR response independent variable into 2 levels (i.e., forgiving vs. unforgiving) for these analyses. In addition to the ANCOVA from the main analyses, Hayes' (2012) process analysis showed a significant relation between victims'

PTR and PTR expression on apology through the indirect effect of social pain. Specifically, the indirect effect (i.e., the mediating effect) of social pain was a significant mediator of victim PTR and PTR expression on apology, $effect = -0.67$, $boot SE = 0.19$, $95\% C.I. [-1.09, -0.32]$, using a 1000 bootstrap sample to generate the bias corrected bootstrap confidence intervals (See Figure 4). The self-control variable as a mediator was non-significant however, $effect = 0.01$, $boot SE = 0.05$, $95\% C.I. [-0.09, 0.15]$ and was discounted as a viable mediator within this relationship.

Further examination of the conditioned mediated effect of victim PTR on apology at different levels of PTR expression revealed that social pain mediated the relationship between victim PTR and apology, but only when PTR expression was direct, $effect = 0.52$, $boot SE = 0.14$, $95\% C.I. [0.28, 0.80]$ (See Figure 5). The mediated effect was non-significant when PTR expressions were indirect, $effect = -0.15$, $boot SE = 0.13$, $95\% C.I. [-0.43, 0.10]$ (See Figure 6). In other words, when the PTR response was expressed directly, the more unforgiving the PTR response, the more social pain offenders experienced, $b = 0.91$, $t = 3.40$, $p = 0.001$. In turn, the more offenders experienced social pain, the more likely they were to apologize, $b = 0.49$, $t = 5.64$, $p < 0.001$.

When expressed directly, people who were forgiven exhibited less social pain which translated into less apology. Additionally, although non-significant, the indirect expressions still showed effects in the predicted direction. When expressed indirectly, forgiveness led to more social pain $b = -.32$, $t = -1.23$, $p = .223$, which led to more apology, $b = .47$, $t = 6.41$, $p < 0.001$. Likewise, when expressed indirectly, unforgiveness triggered less social pain, which led to less apology.

Lastly, examination of the conditioned mediated effect of PTR expression at different levels of victim PTR demonstrated that social pain mediated the relationship between social pain and apology, but only when victims' PTR was forgiveness, $effect = 0.44$, $boot SE = 0.14$, $95\% C.I. [0.18, 0.73]$ (See Figure 7). When offenders received a victim PTR response of forgiveness

from their partner that was expressed indirectly rather than directly, they experienced more social pain $b = .23, t = 3.76, p < 0.001$, which in turn prompted them to apologize, $b = .18, t = 2.67, p < 0.01$.

General Discussion

Building on the apology-forgiveness literature, this thesis sought to augment the scholarly literature by examining the effects of forgiving and unforgiving responses, expressed in direct and indirect ways, on apology. Specifically, this thesis aimed to investigate the causal role of victims' PTRs and PTR expression on apology and test two mechanisms for these effects. This research replicated previous results demonstrating that PTR responses and their expression do interact to promote or prevent apologies, lending support to previous research. Using advanced statistical techniques, this research also demonstrated that these effects were mediated by social pain. That is, victims' PTR and PTR expression interacted to produce differential effects on participants' social pain, which in turn accounted for the effect on apology. When offenders experienced a direct unforgiving PTR response, it increased their feelings of social pain, and prompted them to apologize more. Likewise, being directly forgiven led offenders to be less likely to experience social pain and less likely to apologize. Lastly, being indirectly forgiven led to higher levels of social pain, accounting for higher levels of apology relative to direct forgiveness.

This research extends the forgiveness-apology literature by helping to explain *why* victims' PTRs and PTR expression influence offenders' willingness to apologize. Furthermore, this research augments our understanding of when social pain will lead to approach-oriented behavior such as apologizing. Research demonstrates that social pain can lead to approach

Table 4
Adjusted Means of PTR Response x Expression on Social Pain

	Direct	Indirect
	<i>M</i>	<i>M</i>
Forgive	2.81	3.66
Grudge	3.70	3.44
Revenge	3.91	3.30

Figure 1
Adjusted Means of PTR Response x Expression on Social Pain

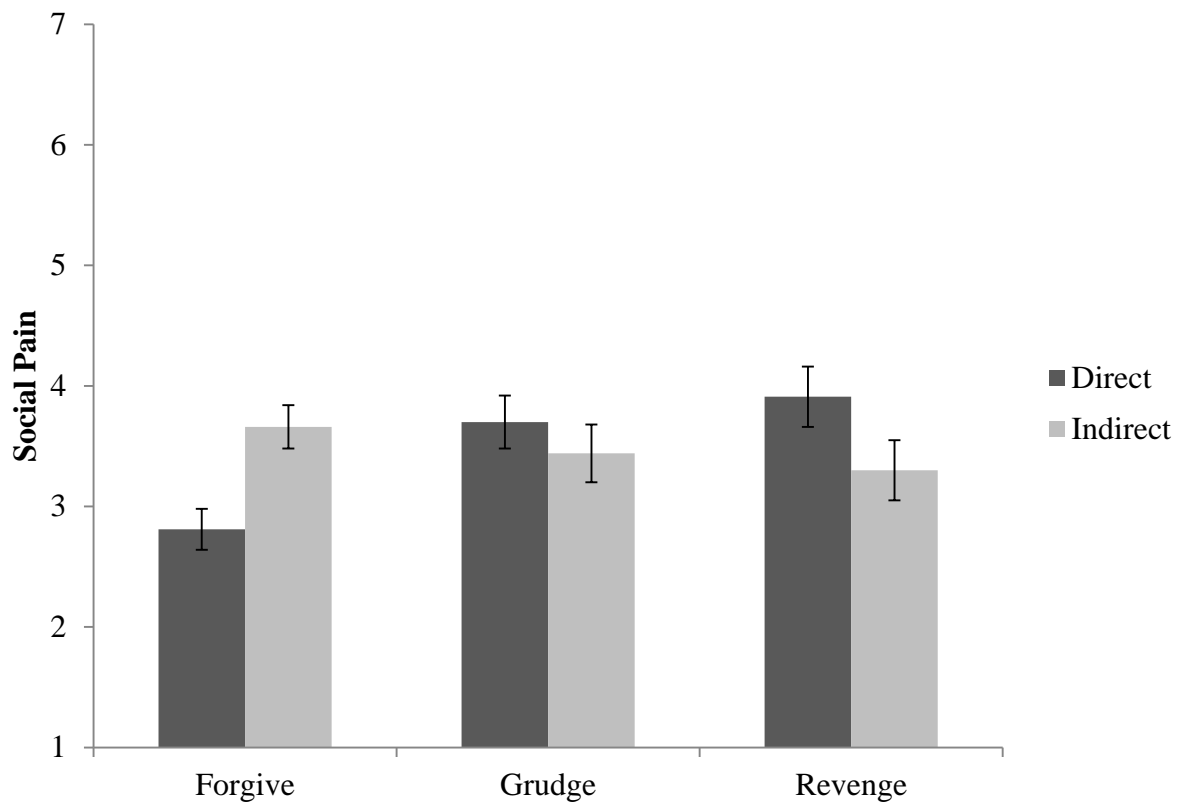


Table 5

Adjusted Means of PTR Response x Expression on State Self-Control (Stroop Test)

	Direct	Indirect
	<i>M</i>	<i>M</i>
Forgive	78.08	98.16
Grudge	94.55	53.27
Revenge	114.71	50.70

Figure 2

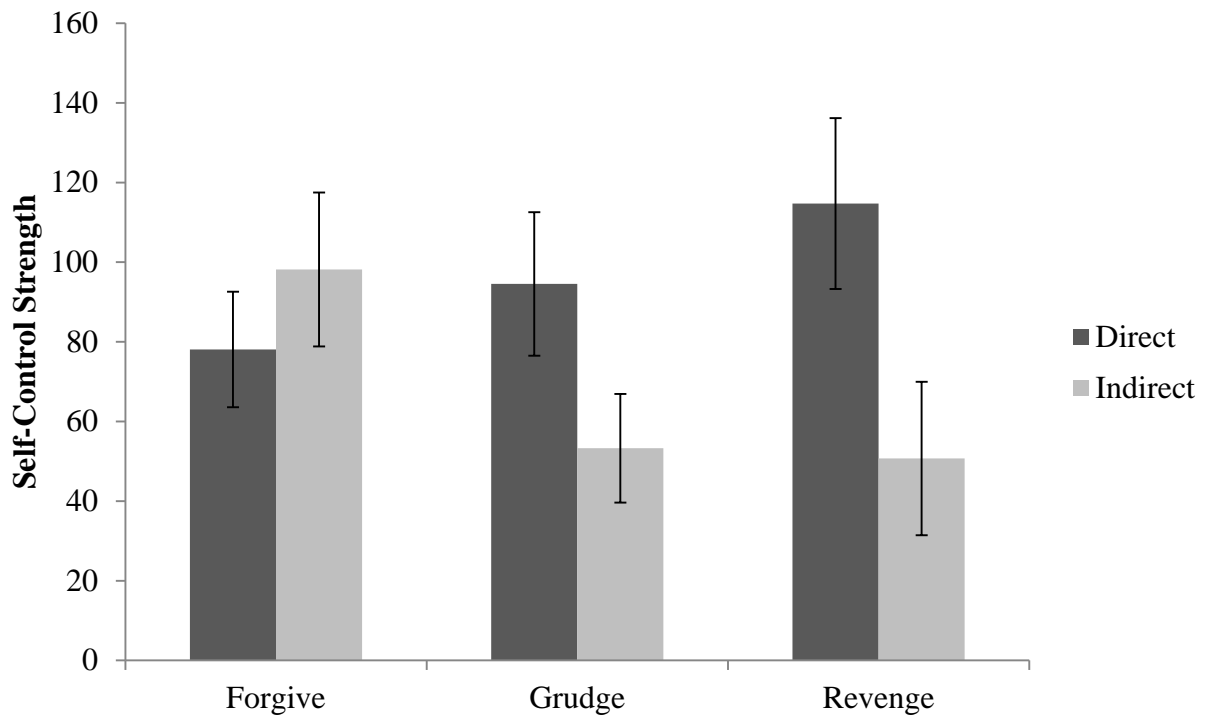
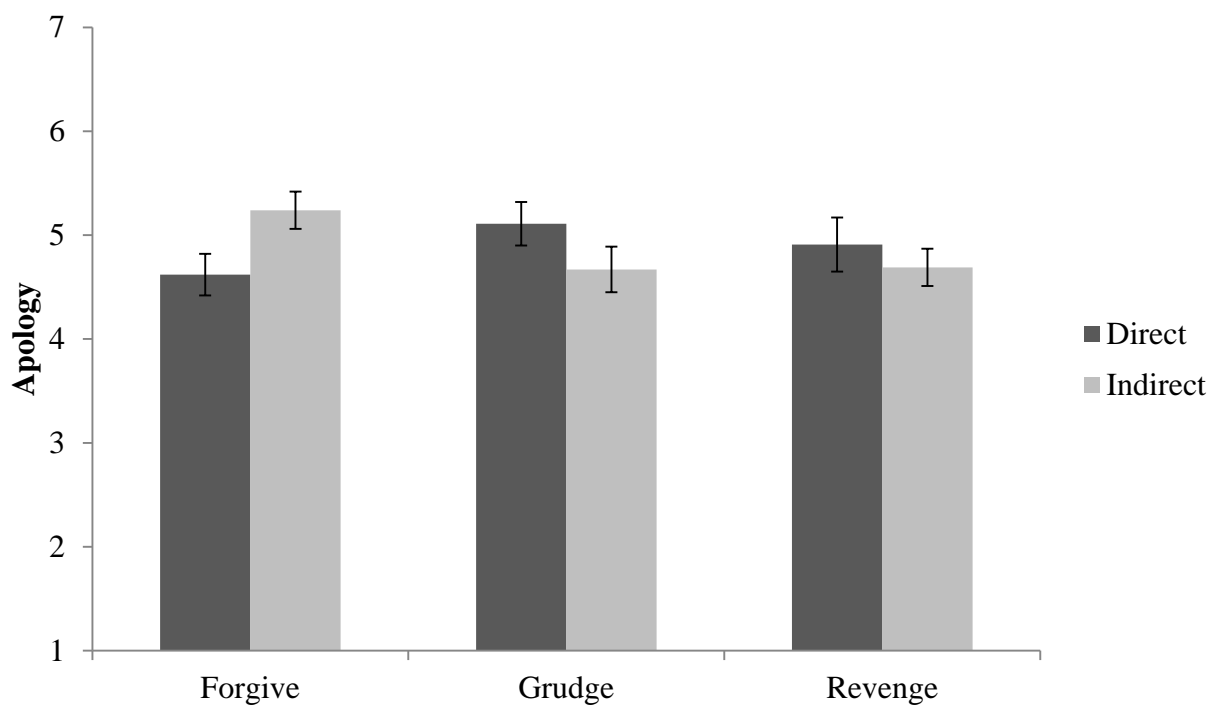
Adjusted Means of PTR Response x Expression on State Self-Control (Stroop Test)

Table 6
Adjusted Means of PTR Response and Expression on Apology

	Direct	Indirect
	<i>M</i>	<i>M</i>
Forgive	4.62	5.24
Grudge	5.11	4.67
Revenge	4.91	4.69

Figure 3
Adjusted Means of PTR Responses and Expression on Apology



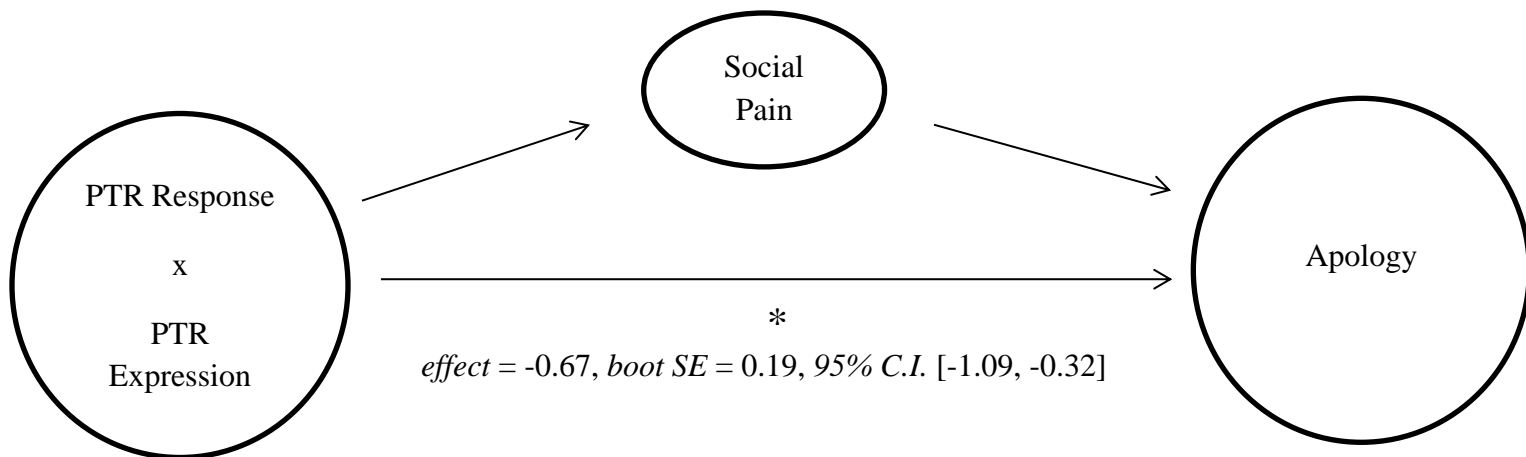
behavior or avoidant behavior to reduce the threat of social rejection (MacDonald & Leary, 2005). Prior research suggests that those who receive messages from another person resulting in hurt feelings are more likely to respond with apologetic behavior (Vangelisti & Crumley, 1998). The results of this thesis corroborate prior research, shedding light on when people with social pain are motivated to approach, particularly within the context of receiving responses from others resulting in social pain.

Moreover, this research also helps us understand the experience of the offender following a transgression and what motivates them to apologize. Although the forgiveness-apology relation has been researched extensively, the majority has focused on the victims' point of view and what motivates them to apologize. These findings help us understand how this relation works from the point of view of the offender, their experience, and the process they may go through in deciding to offer an apology or not.

It was also found that the effect among victim PTR and PTR expression on apology was not mediated by self-control. Specifically, PTR responses had a marginally significant effect on participants' self-control in the predicted direction, where victims' PTR by PTR expressions that led to less apology also consumed more self-control resources. However, in turn, offenders' self-control strength did not account for any effect on apology. One explanation for these findings may be found in the Affect Model of Control (Inzlicht, Bartholow, & Hirsh, 2013). This model argues that conflict is an initiator of self-control, as self-control is required to motivate corrective action to eliminate conflict and generate desired end-states. To that end, negative affect acts as a signal that conflict exists and the current state is not in-line with desired end-states, thus initiating and recruiting self-control to act in ways to work toward resolving the conflict. However, this model suggests that self-control is only successfully activated by negative

Figure 4

Moderated-Mediated Analysis of PTR x Expressions, Social Pain, and Apology (Hayes, 2012)



affective states such as social pain “to the extent that people are open, curious, and accepting of it” (Inzlicht & Legault, 2014, p. 3). That is, self-control is only initiated once people are aware of, and open to, their negative emotions such as social pain as it acts as a cue that conflict exists and needs rectifying and enacts self-control. Therefore, one possibility why self-control did not mediate the PTR by PTR expression effects on apology may be because self-control was assessed immediately after the manipulation of the experimental conditions followed by social pain, suggesting that participants may not have had adequate time to become aware of their social pain before completing the self-control task. It is also possible that self-control is not an adequate explanation for the effect of victims’ PTRs and PTR expression on apology; however, it is too soon in this program of research to make this conclusion.

Limitations and Future Research

This research had a number of limitations. First, the grudge manipulation was difficult for participants to differentiate from revenge. Further research on this topic should make a greater effort to create a more meaningful grudge response manipulation so that participants perceive these responses as they are intended. Because grudge theory and research currently lags behind research on forgiveness and revenge, it is difficult to clearly conceptualize and manipulate grudges in the lab. This research suggests that grudges and revenge trigger similar responses and so the distinction and manipulations of grudges may be moot.

Another avenue for future research is exploring mechanisms for the effects of victims’ PTR responses and PTR expression on apology. First, the findings that social pain led to the relationship between social pain and approach or avoidant behavior is moderated. Future research should investigate *when* or under what boundary conditions social pain may lead to

Figure 5
Significant Moderated-Mediation Analysis of PTR x Direct Expressions, Social Pain, and Apology (Hayes, 2012)

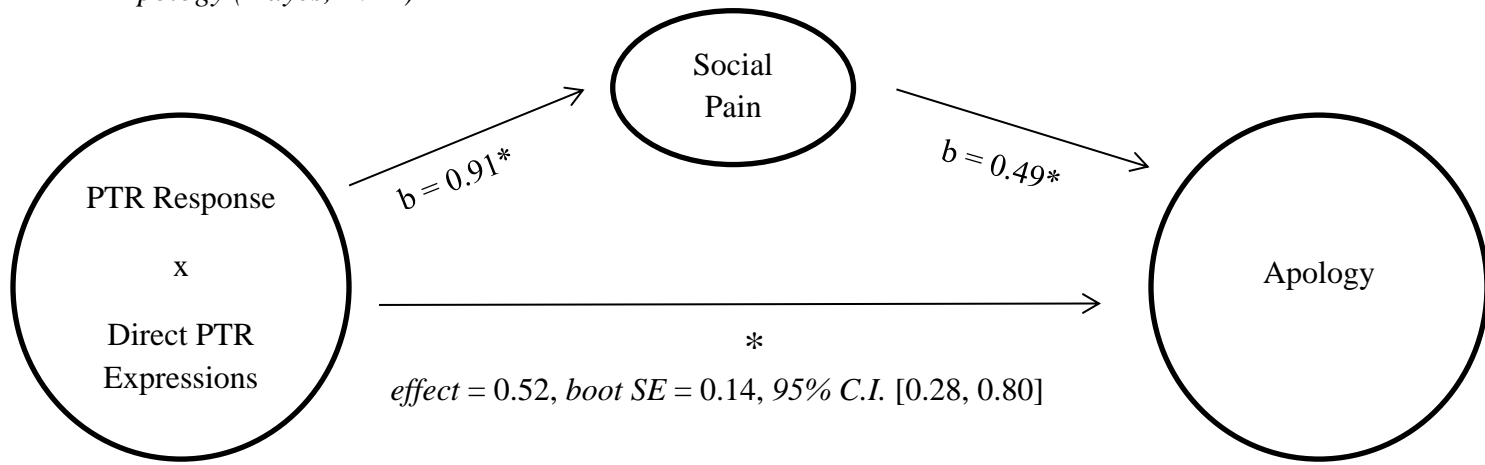


Figure 6
Non-significant Moderated-Mediation Analysis of PTR x Indirect Expressions, Social Pain, and Apology (Hayes, 2012)

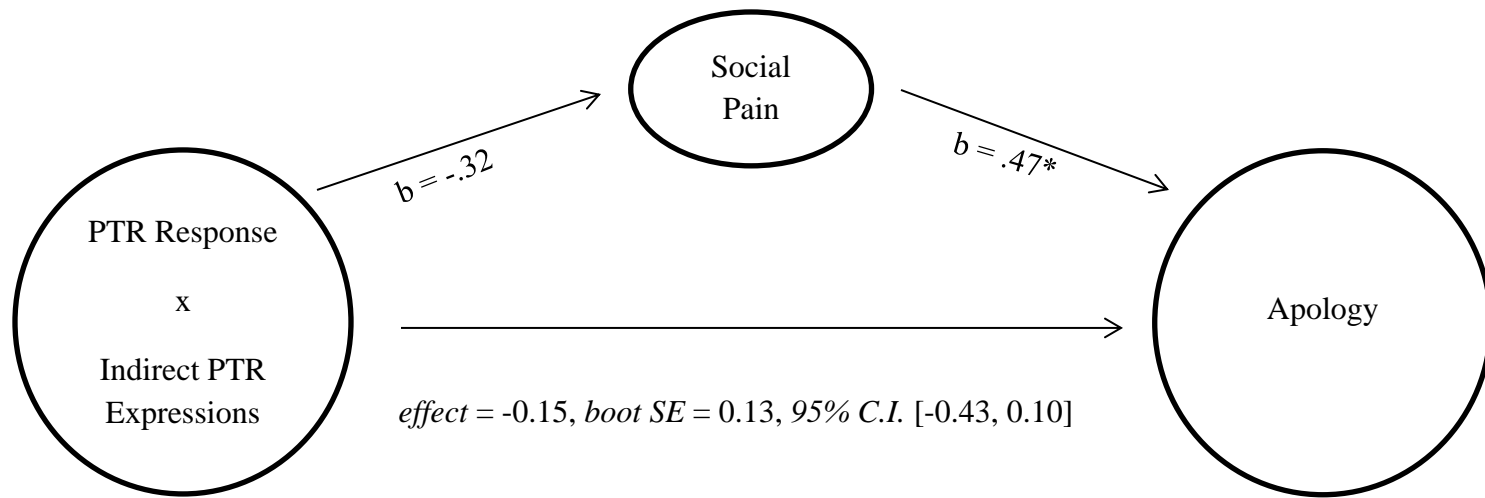
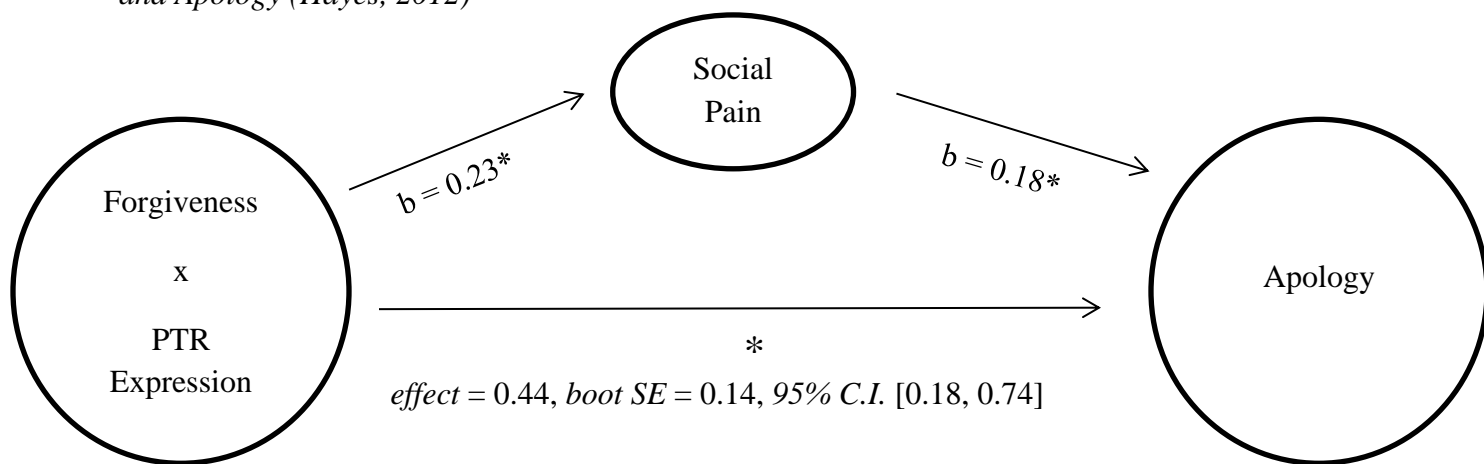


Figure 7
Significant Moderated-Mediation Analysis of PTR Forgiveness x PTR Expression, Social Pain, and Apology (Hayes, 2012)



approach or avoidant behavior, particularly within the context of reparative action and apologies.

Furthermore, it is too soon to dismiss self-control as a mediator. Follow up research can include more diverse ways of measuring self-control strength or can incorporate new theories of self-control, such as the Affect Alarm Model of Control or the recently proposed process model of self-control (c.f. Inzlicht & Legault, 2014; Inzlicht & Shmeichel, 2012; Inzlicht, Shmeichel, & McRae, 2014). For instance, guided by the Affect Alarm Model of Self-Control, future studies can ask participants about their social pain prior to the self-control task, giving participant's time to process their negative affect and initiate self-control more strongly. Alternatively, participants may be given more time before beginning the self-control task (but not enough to rest and replenish self-control) to allow participants more time to process the events and become more in tune with their negative affect. Further, a more important avenue for future research is first demonstrating that the apology process requires self-control. This may be done by first depleting individuals using a reliable self-control task and then determining if this has an effect on subsequent apology levels following a transgression.

Conclusion

Social relationships are fundamentally important, yet our social world is rife with transgressions and interpersonal conflict. Unfortunately, such events have the ability to wound important relationships, necessitating the need for ways to overcome conflict and reconcile. One avenue for reconciliation is through the process of apology. This research suggests that one way people can be pushed-away from offering an apology following transgressions is by what victims say and how they say it. This research is also beginning to show why victims' post-transgression responses influence transgressors' apologies.

References

- Bakker, M. & Wicherts, J. M. (2011). The (mis)reporting of statistical results in psychology journals. *Behavior Research Methods*, 43(3), 666-678.
- Baumeister, R. F., DeWall, C. N., & Twenge, J. M. (2005). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology*, 88(4), 589-604.
- Baumeister, R. F., Exline, J. J., & Sommer, K. L. (1998). The victim role, grudge theory, and two dimensions of forgiveness. In E.L. Worthington (Ed.), *Dimensions of forgiveness: Psychological research and theological perspective* (pp. 79 – 106). Philadelphia: Templeton Foundation Press.
- Baumeister, R. F. & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, 7, 1-15.
- Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1993). When ego threats lead to self-regulation failure: Negative consequences of high self-esteem. *Journal of Personality and Social Psychology*, 64(1), 141-156. doi:<http://dx.doi.org/10.1037/0022-3514.64.1.141>
- Baumeister, R. F. & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as fundamental human motivation. *Psychological Bulletin*, 117(3), 497-529.
- Baumeister, R. F., Vohs, K. D., & Tice, D. M. (2007). The strength model of self-control. *Current Directions in Psychological Science*, 16(6), 351-355.
- Braithwaite, S. R., Selby, E. A., & Fincham, F. D. (2011). Forgiveness and relationship satisfaction: Mediating mechanisms. *Journal of Family Psychology*, 25(4), 551-559. doi:<http://dx.doi.org/10.1037/a0024526>

- Darby, B. W., & Schlenker, B. R. (1982). Children's reactions to apologies. *Journal of Personality and Social Psychology*, *43*(4), 742-753.
- Denson, T. F., Dewall, C. N., & Finkel, E. J. (2012). Self-control and aggression. *Current Directions in Psychological Science*, *21*, 20-25.
- DeWall, C. N., Baumeister, R. F., Gailliot, M. T., & Maner, J. K. (2008). Depletion makes the heart grow less helpful: Helping as a function of self-regulatory energy and genetic relatedness. *Personality and Social Psychology Bulletin*, *34*, 1663-1676.
- DeWall, C. N., Finkel, E. J., & Denson, T. F. (2011). Self-control inhibits aggression. *Social and Personality Psychology Compass*, *5*(7), 458-472. doi:<http://dx.doi.org/10.1111/j.1751-9004.2011.00363.x>
- Eaton, J., & Struthers, C. W. (2006). The reduction of psychological aggression across varied interpersonal contexts through repentance and forgiveness. *Aggressive Behavior*, *32*(3), 195-206.
- Empirisoft. (2012). MediaLab & DirectRT (Version 2012) [Computer Software]. New York, NY: Empirisoft Corporation.
- Exline, J. J., & Baumeister, R. F. (2000). Expressive forgiveness and repentance: Benefits and barriers. In M. E. McCullough, K. I. Pargament, & C.E. Thoreson (Eds.), *The psychology of forgiveness* (pp. 133-155). New York: Guilford.
- Exline, J. J., Deshea, L., & Holeman, V. T. (2007). Is apology worth the risk? Predictors, outcomes, and ways to avoid regret. *Journal of Social and Clinical Psychology*, *26*(4), 479-504.

- Finkel, E. J., & Campbell, W. K. (2001). Self-control and accommodation in close relationships: An interdependence analysis. *Journal of Personality and Social Psychology, 81*, 263–277.
- Finkel, E. J. & Fitzsimons, G. M. (2011). The effects of social relationships on self-regulation. In K.D. Vohs, & R.F. Baumeister (Eds.), *Handbook of self-regulation: Research, theory, and applications* (2nd ed., pp 390-406). New York: Guilford Press
- Fitzsimons, G. M., & Finkel, E. J. (2010). Interpersonal influences on self-regulation. *Current Directions in Psychological Science, 19*(2), 101-105.
- Gailliot, M. T., Schmeichel, B. J., & Baumeister, R. F. (2006). Self-regulatory processes defend against the threat of death: Effects of self-control depletion and trait self-control on thoughts and fears of dying. *Journal of Personality and Social Psychology, 91*(1), 49-62.
doi:<http://dx.doi.org/10.1037/0022-3514.91.1.49>
- Goffman, E. (1955). On face-work: An analysis of ritual elements in social interaction. *Journal for the Study of Interpersonal Processes, 18*, 213-231.
- Goffman, E. (1971). *Relations in public: Microstudies of the public order*. New York: Basic Books.
- Greco, V. & Roger, D. (2003). Uncertainty, stress, and health, *Personality and Individual Differences, 34*(6), 1057-1068.
- Hagger, M. S., Wood, C., Stiff, C., & Chatzisarantis, N. L. D. (2010). Ego depletion and the strength model of self-control: A meta-analysis. *Psychological Bulletin, 136*(4), 495-525.

- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper]. Retrieved from <http://www.afhayes.com/public/process2012.pdf>
- Howell, A. J., Dopko, R. L., Turowski, J. B., & Buro, K. (2012). The disposition to apologize. *Personality and Individual Differences, 51*, 509-514.
- Howell, A. J., Turowski, J. B., Buro, K. (2012). Guilt, empathy, and apology. *Personality and Individual Differences, 53*, 917-922.
- Inzlicht, M., Bartholow, B. D., & Hirsh, J. B. (2013). Is negative affect essential for self-control? Toward an affect alarm model of self-control. *Unpublished Manuscript*. University of Toronto
- Inzlicht, M., & Kang, S. K. (2010). Stereotype threat spillover: How coping with threats to social identity affects aggression, eating, decision making, and attention. *Journal of Personality and Social Psychology, 99*(3), 467-481.
- Inzlicht, M., & Legault, L. (2014). No pain, no gain: How distress underlies effective self-control (and unites diverse social psychological phenomena). Manuscript submitted for publication.
- Inzlicht, M., & Schmeichel, B. J. (2012). What is ego depletion? Toward a mechanistic revision of the resource model of self-control. *Perspectives on Psychological Science, 7*, 450-463. doi:10.1177/1745691612454134
- Inzlicht, M., Shmeichel, B. J., & McCrae, C. N. (2014). Why self-control seems (but may not be) limited. *Trends in Cognitive Science, 18*(3), 127-133.

- Kachadourian, L. K., Fincham, F., & Davila, J. (2004). The tendency to forgive in dating and married couples: The role of attachment and relationship satisfaction. *Personal Relationships, 11*(3), 373-393. doi:<http://dx.doi.org/10.1111/j.1475-6811.2004.00088.x>
- Khoury, C. (2014). *The effects of power and assurance of no future transgressions on post-transgression responses*. (Doctoral dissertation).
- Kim, P. H., Dirks, K. T., & Cooper, C. D. (2009). The repair of trust: A dynamic bilateral perspective and multilevel conceptualization. *Academy of Management Review, 34*, 401–422.
- Kim, S. H., & Smith, R. H. (1993). Revenge and conflict escalation. *Negotiation Journal, 9*, 37-43.
- Kirchhoff, J., Wagner, U., & Strack, M. (2012). Apologies: Words of magic? The role of verbal components, anger reduction, and offence severity. *Peace and Conflict: Journal of Peace Psychology, 18*(2), 109-130. doi:<http://dx.doi.org/10.1037/a0028092>
- Lazare, A. (2004). *On apology*. New York: Oxford University Press.
- Lawler, K. A., Younger, J. W., Piferi, R. L., Jobe, R. L., Edmondson, K. A., & Jones, W. H. (2005). The unique effects of forgiveness on health: An exploration of pathways. *Journal of Behavioral Medicine, 28*, 157-167
- Leunissen, J. M., De Cremer, D., & Reinders Folmer, C. P. (2012). An instrumental perspective on apologizing in bargaining: The importance of forgiveness to apologize. *Journal of Economic Psychology, 33*, 215-222.

- Loseman, A., & van, d. B. (2012). A self-regulation hypothesis of coping with an unjust world: Ego-depletion and self-affirmation as underlying aspects of blaming of innocent victims. *Social Justice Research, 25*(1), 1-13. doi:<http://dx.doi.org/10.1007/s11211-012-0152-0>
- Luchies, L. B., & Finkel, E. J. (2011). The doormat effect: On the dangers of resolving conflict via unilateral forgiveness. In J.P. Forgas, A.W. Kruglanski, & K.D. Williams, (Eds.), *The psychology of social conflict and aggression* (pp. 217-230). New York: Psychology Press.
- Maio, G. R., Thomas, G., Fincham, F. D., & Carnelley, K. B. (2008). Unraveling the role of forgiveness in family relationships. *Journal of Personality and Social Psychology, 94*(2), 307-319. doi:<http://dx.doi.org/10.1037/0022-3514.94.2.307>
- MacDonald, G. & Leary, M. R. (2005). Why does social exclusion hurt? The relationship between social and physical pain, *Psychological Bulletin, 131*(2), 202-223.
- MacLeod, C. M. (1991). Half a century of research on the Stroop effect: An integrative review. *Psychological Bulletin, 109*(2), 163-203.
- Maszk, P., Eisenberg, N. G., & Guthrie, I. K. (1999). Relations of children's social status to their emotionality and regulation: A short-term longitudinal study. *Merrill-Palmer Quarterly, 45*, 468-492.
- McCullough, M. E. (2008). *Beyond Revenge*. San Francisco: Jossey-Bass
- McCullough, M. E., Bellah, C. G., Kilpatrick, S. D., & Johnson, J. L. (2001). Vengefulness: Relationships with forgiveness, rumination, well-being, and the big five. *Personality and Social Psychology Bulletin, 27*, 601-610.

- McCullough, M. E., Kurzban, R., & Tabak, B. A. (2011). Evolved mechanisms for revenge and forgiveness. In P. R. Shaver, & M. Mikulincer (Eds.), (pp. 221-239). Washington, DC, US: American Psychological Association.
- McCullough, M. E., Pargament, K. I. & Thoreson, C. E. (2000). *Forgiveness: Theory, research, and practice* (Eds.), New York, NY, US: Guilford Press.
- McNulty, J. K. (2011). The dark side of forgiveness: The tendency to forgive predicts continued psychological and physical aggression in marriage. *Personality and Social Psychology Bulletin*, 37(6), 770-783.
- Messias, E., Saini, A., Sinato, P., & Welch, S. (2010). Bearing grudges and physical health: Relationship to smoking, cardiovascular health and ulcers. *Social Psychiatry and Psychiatric Epidemiology*, 45(2), 183-187. doi:10.1007/s00127-009-0054-0
- Monat, A., Averill, J. R., & Lazarus, R. S.(1972). Anticipatory stress and coping reactions under various conditions of uncertainty, *Journal of Personality and Social Psychology*, 24(2), 237-253. doi:10.1037/h0033297
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89(6), 852-863.
- Muraven, M., & Baumeister, R. F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, 126(2), 247-259.
doi:http://dx.doi.org/10.1037/0033-2909.126.2.247
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist*, 55(1), 56-67.

- Pronk, T. M., Karremans, J. C., Overbeek, G., Vermulst, A. A., & Wigboldus, D. H. J. (2010). What it takes to forgive: When and why executive functioning facilitates forgiveness. *Journal of Personality and Social Psychology, 98*, 119–131.
- Sandage, S. J., Worthington, E. L., Hight, T. L., & Berry, J. W. (2000). Seeking forgiveness: Theoretical context and an initial empirical study. *Journal of Psychology and Theology, 28*(1), 21-35.
- Stroop, J. R. (1935). Studies of interference in serial verbal reactions. *Journal of Experimental Psychology, 18*(6), 643-662. doi:<http://dx.doi.org/10.1037/h0054651>
- Struthers, C. W., Eaton, J., Shirvani, N., Georghiou, M., & Edell, E. (2008). The effect of preemptive forgiveness and a transgressor's responsibility on shame, motivation to reconcile, and repentance. *Basic and Applied Social Psychology, 30*(2), 130-141. doi:<http://dx.doi.org/10.1080/01973530802209178>
- Struthers, C.W., Khoury, C., Guilfoyle, J.R., Phills, C., van Monsjou, E., & Marjanovic, Z. (in progress). The effects of victims' post-transgression reactions on apologies.
- Tavuchis, N. (1991). *Mea culpa: A sociology of apology and reconciliation*. Stanford, CA: Stanford University Press.
- Thomas, R. L., & Millar, M. G. (2008). The impact of failing to give an apology and the need-for-cognition on anger. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues, 27*(2), 126-134.
- Twenge, J. M., Baumeister, R. F., Tice, D. M., & Stucke, T. S. (2001). If you can't join them, beat them: Effects of social exclusion on aggressive behavior. *Journal of Personality and Social Psychology, 81*, 1058–1069.

- Vangelisti, A. L., & Crumley, L. P. (1998). Reactions to messages that hurt: The influence of relational contexts. *Communication Monographs*, *65*, 173–196.
- Vohs, K. D., Baumeister, R. F., Schmeichel, B. J., Twenge, J. M., Nelson, N. M., & Tice, D. M. (2008). Making choices impairs subsequent self-control: A limited resource account of decision making, self-regulation, and active initiative. *Journal of Personality and Social Psychology*, *94* (5), 883 – 898.
- Witvliet, C. V., Ludwig, T. E., & Vander Laan, Kelly L. (2001). Granting forgiveness or harboring grudges: Implications for emotion, physiology, and health. *Psychological Science*, *12*(2), 117-123. doi:10.1111/1467-9280.00320
- Xu, H., Bègue, L., & Bushman, B. J. (2012). Too fatigued to care: Ego-depletion, guilt, and prosocial behaviour. *Journal of Experimental Social Psychology*, *48*, 1183-1186.