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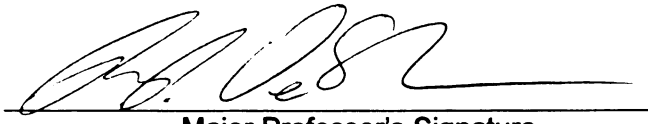

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ROAD TO FORGIVENESS: THE INFLUENCE OF INDIVIDUAL DIFFERENCES, APOLOGY AND PERSPECTIVE TAKING

By

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ABSTRACT

ROAD TO FORGIVENESS: THE INFLUENCE OF INDIVIDUAL DIFFERENCES, APOLOGY AND PERSPECTIVE TAKING

By

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The present study examined dispositional predictors (empathy, rumination and negative affectivity) and processual predictors (apology and perspective taking) of interpersonal forgiveness in the aftermath of a negative interpersonal event. Both the direct and moderating effects of individual difference variables were examined. Those high on trait empathetic concern and trait perspective taking were found to be less likely to engage in retaliatory behavior and more likely to forgive. Apology predicted self-reported forgiveness, such that those who received apology were more likely to forgive. The effect of apology on forgiveness was also found to be greater for those individuals who were low on trait perspective taking. The effect of the perspective-taking intervention on forgiveness was greater for those individuals who were high on trait empathetic concern. On the whole the results have practical organizational implications. Organizations/managers who seek to reduce retaliatory behavior and seek to encourage forgiveness should train and mentor employees in the art of apology giving. Perspective-taking training can also be designed to encourage employees to overcome negative thoughts and cognitions in the aftermath of a negative interpersonal event.

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INTRODUCTION

As organizational psychologists we need to understand not only the antecedents and consequences of injustice and transgressions at the workplace but also the mechanisms and dynamics through which damaged relationships can be restored. In today's workplace reports of offensive co-worker actions are becoming common. Jones and Burdette (1994) found that nearly 19% of employees reported having been betrayed by a colleague at work. In another study on 460 industrial workers, 7% of the employees reported being exposed to acts such as repeated ridicule, verbal abuse, gossip and harmful teasing on a weekly basis (Einarsen & Raknes, 1997). Offensive interpersonal experiences at the workplace may take various forms such as insulting remarks, repeated ridicule, harmful teasing, bullying, breach of trust and confidentiality, badgering or being ostracized by one or many fellow workers (Einarsen & Skogstad, 1996; Leymann, 1990; Tripp & Bies, 1997). These negative interpersonal workplace experiences present a serious threat to the well-being of organizations and their employees (Robinson & Bennett, 1995).

When employees are subjected to offensive acts they experience negative emotions like anger and resentment (Tripp & Bies, 1997). If these negative emotions are not handled constructively they may interfere with performance and productivity of people who need to work interdependently (Dutton, Ashford, Weirba, O'neill, & Hayes, 1997; Heimer, 1992). In today's business world it is becoming more and more important to be able to work interdependently and to co-operate with one's co-workers and team members. If the employees are unable to resolve their negative emotions in the aftermath of interpersonal conflict and continue to harbor negative cognitions of revenge and

avoidance, it can lead to breakdown of work relationships. Cropanzano, James, and Konovsky (1993) have argued that low organizational commitment is the consequence of negative affective experiences at work. Individuals who feel anger and resentment towards co-workers are more likely to have lower organizational commitment and increased turnover intentions (Cropanzano et al., 1993). In a longitudinal field study by Pelled and Xin (1999) it was found that negative mood states predicted subsequent turnover.

In a recent survey of the Canadian workforce, interpersonal conflict at work was ranked as the third most important source of work-related stress (Williams, 2003). Many other studies have shown that stress and negative interpersonal experiences at work are significant irritants for working people (Grandey, Tam, & Brauburger, 2002; Harvey & Keashly, 2003; Tannock, 2001). Frone (2000) found that interpersonal conflicts experienced at work accounted for lower job satisfaction and organizational commitment and an increased intention to leave the job for young workers. He also found that interpersonal conflict with coworkers is positively correlated with reports of negativity like depressed mood and somatic symptoms as well as decreased sense of self-esteem.

Research on interactional justice has shown that employees expect to be treated with respect, dignity and honesty by organizations/supervisors (Janssens, Sels, & Van den Brande, 2003; Kickul & Liao-Troth, 2003). Perceptions of interactional injustice play a crucial role in the determination of employees' emotions, work attitudes and behaviors (Cohen-Charash & Spector, 2001; Colquitt, Conlon, Wesson, Porter, & Yee Ng, 2001). When employees perceive interactional unfairness they are more likely to appraise the situation negatively, which in turn elicits negative emotions (Spector & Fox, 2002). Such

negative emotions can induce reactions such as job dissatisfaction, distress, and aggressive acts.

On the whole, research on adult workers has shown that negative interpersonal events at work are positively related to symptoms of stress and unfavorable work attitudes (e.g., Jex & Spector, 2002; Peters, Buunk, & Schaufeli, 1995; Spector, 1987; Spector, Dwyer, & Jex, 1988). This calls for attention to examine affective experiences at work and discover ways in which negative emotions can be reduced to prevent stress, unfavorable attitudes and withdrawal behaviors.

Response to Negative Work Events

Research has shown that people may respond to negative interpersonal experiences at work with a range of active, passive, direct, and indirect coping behaviors. Responses range from forgiveness to ignoring the event, avoiding the person who caused the negative event, threatening the person who caused the hostile situation, taking revenge or having revenge fantasies, private confrontation, doing nothing, social withdrawal, feuding, leaving the organization or taking sick days (Bies & Tripp, 1996; Keashly, 1994). Most of the above mentioned coping responses to negative events, except for forgiveness, involve some form of breakdown of co-operation after the negative event. People who choose to respond to negative events by avoiding the transgressor or taking revenge may be closing the door for future co-operation and relationship repair opportunities. On the contrary forgiveness opens the door towards reconciliation.

There is empirical support that forgiveness is an adaptive method of coping (e.g., Rasmussen & Lopez, 2000), and that it is related to psychological well-being (e.g.,

Mauger et al., 1992; Subkoviak et al., 1995; Witvliet, 2001). Studies on marital quality and relationship repair have found that forgiveness helps to restore relationship closeness and positive interactions following negative interpersonal transgressions (e.g., Fincham, 2000; McCullough, Rachal, Sandage, Worthington, Brown, & Hight, 1998). Gordon and Baucom (1999) found that partners who forgave their spouse for an interpersonal transgression had more adaptive marital functioning.

Forgiveness as an alternative response to negative interpersonal experiences at work has been largely ignored in management and psychological research (Kurzynsky, 1998). More research examining the antecedents of forgiveness is required. Understanding the factors that facilitate forgiveness can help organizations/managers better manage negative interpersonal situations at work.

The Present Study

The purpose of the present study is to examine and understand the variables that could facilitate forgiveness as a response to a negative interpersonal event. In this study I examine the influence of apology and perspective taking on forgiveness. I also examine the role of dispositional variables (characteristics of the victim) such as empathy, rumination and negative affectivity on forgiveness. This study does not advocate that forgiveness is the best response to all negative interpersonal experiences at work. Studying whether forgiveness is the most effective response would require studying the different relationship outcomes of forgiveness which is beyond the scope of this study.

In the next few pages I will review the literature on forgiveness including some of the conceptualizations of the forgiveness construct. I will then present a description of the variables and the hypotheses I plan to test, followed by my conceptual model.

Literature on Forgiveness

There is a large body of research in the area of workplace incivility, counter-productive behavior and revenge that seeks to understand employee's reactions to negative interpersonal events in the workplace. A majority of research in this area has focused on negative reactions like revenge, retaliation, aggressive behaviors, sabotage, theft, interpersonal violence etc (Bies & Tripp, 1996; Bies, Tripp, & Kramer, 1997; Folger & Cropanzano, 1998; Greenberg, 1990, 1993, 1997; Morrison, 1997; Robinson & Bennett, 1997; Robinson & Rousseau, 1994; Skarlicki & Folger, 1997; Skarlicki, Folger, & Tesluk, 1999; Wanberg, Bunce, & Gavin, 1999). Research studies have provided us with good insights about the antecedents of negative reactions such as revenge, retaliation, aggressive behaviors, sabotage, theft, interpersonal violence etc. However, only a few empirical studies have examined the antecedents and consequences of restorative coping responses like forgiveness in the workplace setting.

In the organizational behavior literature scholars have now begun to study forgiveness and related concepts in the workplace setting. Most of these studies have stemmed from a traditional justice perspective (Cropanzano et al, 2001; Folger & Cropanzano, 1998; Greenberg & Cropanzano, 2001 etc). Studies have looked at retribution and revenge (e.g., Aquino, Tripp, & Bies, 2001; Tripp, Bies, & Aquino, 2002) as a type of coping strategy to restore justice. There are other studies, like the qualitative study of workplace revenge done by Bies and Tripp (1996), which have uncovered forgiveness as a response by some employees to restore justice. Studies have also found that people have the capacity to choose forgiveness as a constructive alternative to

retaliation (Boon & Sulsky, 1997; McCullough, et al., 1998; McCullough, Worthington, & Rachal, 1997; Weiner, Graham, Peter, & Zmuidinas, 1991).

Some recent research studies have examined forgiveness in workplace relationships (Aquino, Grover, Goldman, & Folger, 2003; Bottom, Gibson, Daniels, & Murnighan, 2002; Bradfield & Aquino, 1999). Other studies have looked at forgiveness as a collective process in organizations (Bright, 2002). Although many theoretical frameworks and presuppositions related to the concept of forgiveness are now emerging, there is still a dearth of experimental and empirical studies. The present research seeks to fill in this gap by experimentally examining the factors that trigger and facilitate forgiveness.

Conceptualization of Forgiveness

There is an ongoing debate amongst forgiveness scholars regarding the definition of forgiveness (e.g., Enright & Coyle, 1998; McCullough, Pargament, & Thoresen, 2000b). However there is agreement amongst scholars on how forgiveness is different from other related concepts like pardoning, condoning, excusing and forgetting. Pardoning is considered different from forgiveness as it refers to sparing an offender from legal penalties, while forgiving a perpetrator of offense is independent of whether or not the judicial system acts against the offender. Similarly condoning and excusing are different from forgiveness as they imply that the victim accepts or justifies the offense. Forgiveness is also different from forgetting. Forgiveness does not require forgetting, as one need not have erased the memory of the offense in order to forgive (Cameron & Caza, 2002).

In the following paragraphs I present frequently used definitions of forgiveness given by forgiveness scholars.

Thompson and Shaken (2002) define workplace forgiveness as the process whereby an employee who perceives himself or herself to have been the target of an injurious offense deliberately attempts to (a) overcome negative emotions (e.g., resentment, anger, hostility) toward his or her offender and (b) refrain from causing the offender harm even when he or she believes it is justifiable to do so.

According to Al-Mabuk, Enright and Cardis (1995), forgiveness occurs when the injured person, "overcomes the negative affect, cognition, and behavior toward the injurer and substitutes more positive affect, cognition, and behavior toward him or her" (p. 427).

Enright and Coyle (1998), define forgiveness as "a willingness to abandon one's right to resentment, negative judgment and indifferent behavior towards one who unjustly hurt us, while fostering the undeserved qualities of compassion, generosity and even love toward him or her" (p. 140).

Worthington (1998), defines forgiveness as a motivation to reduce avoidance of and withdrawal from a person who has hurt us, as well as the anger, desire for revenge, and urge to retaliate against that person. Forgiveness also increases the pursuit of conciliation toward that person if moral norms can be re-established that are as good as, or even better than, they were before the hurt. (p. 108)

A review of the different definitions of forgiveness presented above indicates the lack of consensus on the definition of the construct. Common amongst all definitions is the idea that forgiveness is the letting go of the negative emotions (like anger and

resentment) and negative cognitions (of revenge and avoidance) towards the offender. There is disagreement on whether forgiveness involves developing positive emotions towards the transgressor. Preconditions for forgiveness are mentioned in some definitions but not in others (Macaskill, 2005). There is also disagreement about the role of reconciliation in forgiveness. Worthington (1998) and Hargrave and Sells (1997), include in their definitions positive affect, cognition and behavior towards the transgressor, while other researchers make a distinction between forgiveness and reconciliation (Enright & Coyle, 1998; Enright et al., 1998; McCullough, 2000). In some definitions such as the one by Hargrave and Sells (1997), forgiveness simply presents opportunities for relationship repair through trust building and reconciliation (Macaskill, 2005).

McCullough and Worthington (1995), conceptualize forgiveness as complex affective, cognitive, and behavioral phenomena. Different definitions of forgiveness emphasize one or more of the following aspects: the letting go of negative emotions (anger and resentment), the letting go of negative cognitions (desire or urge to take revenge), developing positive emotions (e.g. compassion) and the letting go of the desire to avoid, withdraw or/and retaliate against the transgressor (Worthington, 1998). Some researchers have also asserted that forgiveness presents opportunities for relationship repair through trust building and reconciliation (Hargrave, & Sells, 1997; Macaskill, 2005). Rye and Pargament (2002) have defined forgiveness as the letting go of negative affect, negative cognitions and negative behavior in response to considerable injustice.

Despite references to the behavioral indicators of forgiveness there have been very few empirical studies that have measured the behavioral aspects of forgiveness. Behavioral responses to negative interpersonal experiences that are characterized by

conciliation and compassion can be seen as indicators of forgiveness. Behavioral measures of forgiveness that report constructive and destructive behaviors towards the transgressor or an observation of the offended person's behavior towards the transgressor is a relatively unexplored but potent alternative approach to measuring forgiveness. Some studies have explored forgiveness in a mixed-motive game like prisoner's dilemma where forgiveness was operationalized as a co-operative move after the partner had defected/ made a competitive move (e.g., Axelrod, 1980a, 1980b). There are other ways in which one can use a behavioral measure as an indicator of forgiveness. For example in controlled lab settings, subjects can be given the opportunity to take revenge or express aggression towards a confederate who has insulted the subject. The actual revenge behaviors could be measured and used as an indicator of forgiveness.

In the present study I define forgiveness as the lack of negative emotions (such as anger and resentment) and the lack of negative cognitions (such as the desire to take revenge and the desire to avoid the transgressor) in response to a negative interpersonal experience. This definition is in line with other definitions of forgiveness as it stresses on the "letting go" of negative emotions and cognitions towards the offender. This definition does not include reconciliation and the development of positive emotions towards the transgressor, as there is still an ongoing debate on whether positive emotions and reconciliation are necessary preconditions for forgiveness.

In recent years studies have attempted to identify the individual and situational factors associated with forgiveness (Ashton, Paunonen, Helmes, & Jackson, 1998; Barber, Maltby, & Macaskill, 2005; Berry & Worthington, 2001; Davenport, 1991; Enright, Gassin, & Wu, 1992; Kaplan, 1992; Maltby, Macaskill, & Day, 2001; Macaskill,

Maltby, & Day, 2002; Williams & Williams, 1993; Worthington et al., 2000a). Studies have also begun to explore relational and contextual factors like offender likeability, quality of the relationship and power distance between the transgressor and the victim as factors that may influence the ease with which forgiveness occurs (Enright & Coyle, 1998; Worthington, 1998; Worthington, Sandage, & Berry, 2000b). Some scholars are attempting to go beyond studying dispositional and contextual facilitators of forgiveness and have now begun to explore the role of interventions in facilitating forgiveness as a response to negative interpersonal experiences. Coyle and Enright (1998) in their review found that interventions can be effective in helping individuals overcome feeling of anger and resentment thus facilitating forgiveness. Wade, Worthington and Meyer (2005) in their recent handbook on forgiveness have meta-analyzed a variety of forgiveness-promoting group interventions in the literature and found that the treatment groups which received the interventions showed greater forgiveness than the control groups.

In the present study I examine the role of process variables like apology and perspective-taking on forgiveness. I also examine how dispositional variables (characteristics of the victim) like empathy, rumination and negative affectivity (trait & state) effect forgiveness. Finally, I'm interested in examining how these individual difference variables moderate the influence of apology and perspective-taking on forgiveness.

Factors that Influence Forgiveness

Apology

An apology conveys an admission of responsibility and regret on the part of the transgressor for the violation and its harm on the victim, and may also convey a desire to

reconcile and continue the relationship (Goffman, 1972; Lewicki & Bunker, 1996; Tedeschi & Norman, 1985). According to Greenberg (1990) apology is a key step in reducing distrust following a violation, because it conveys recognition of the injustice to the injured person, along with a desire to restore justice. Tomlinson, Dineen and Lewicki (2004) assert that an apology can act as a source of information for the victim to understand the nature of the violation and the transgressor. Apology has also been found to be a key variable that mitigates aggression from injured persons after a violation (Ohbuchi, Kameda & Agarie, 1989).

Literature on trust repair suggests that trust can be repaired successfully if the transgressor acknowledges and assumes some ownership of the offence that occurred (Lewicki & Bunker, 1996). Studies have found that victims experience more positive affect and may have favorable impressions of the transgressor after they receive an apology as opposed to receiving no apology (Ohbuchi et al., 1989). There can be many types of explanations that can be given by an offender after an offense. This could range from justification, excuse, denial or apology. Research has shown that the apology is perceived as the most trustworthy communication that results in resolving the conflict between the offender and the victim (Darby & Schlenker, 1982; Gonzales, Manning & Haugen, 1992, Takaku, 2000). I thus plan to test the following hypothesis in the present study:

Hypothesis 1: Apology will have a positive relationship with forgiveness.

Although the offender may offer apology, the influence of the apology on the victim's willingness to forgive may depend on certain individual difference variables (such as victim's tendency to empathize, ruminate or the victim's trait negative

affectivity) as well as the ability of the victim to take the perspective of the transgressor. In the present study I examine how perspective-taking can facilitate forgiveness.

Perspective-Taking

The existing conceptualizations of perspective taking defines perspective taking as the tendency to adopt the other's point of view in reacting to a given situation, attempting to see the situation from the other's perspective, and feeling and thinking as the other would feel and think (cf. Batson, 1987; Davis, 1983). There is evidence suggesting an important relationship between perspective taking and interpersonal problem solving. Studies that have trained individuals on perspective taking skills have found a positive effect of perspective-taking training on interpersonal problem solving (Elardo & Bradley, 1977; Rosen, 1974; Spivack & Shure 1974). Significant positive correlations have been found between these two constructs in a variety of populations (Affleck, 1975; Spivack, Platt, & Shure, 1976). In contrast, the inability or disinclination to take the other's perspective can act as an impediment to accommodative behavior and interpersonal problem solving. Limiting perspective to one's own point of view can yield relatively more defensive and angry emotions and attendant tendencies to retaliate rather than accommodate (Arriaga & Rusbult, 1998).Studies have shown that putting oneself in another person's shoes, in other words being able to take the perspective of the other is associated with a variety of prosocial behaviors, such as altruism, cooperation, and forgiveness (through the inhibition of destructive/aggressive reactions) (Arriaga & Rusbult, 1998; Batson, 1991, 1997; Batson, Batson, Todd, Brummett, Shaw, & Aldeguer, 1995; Batson, Early, & Salvarani, 1997; Davis, 1994; Regan & Totten, 1975).

In a recent study, Konstam, Chernoff, and Deveney (2001) found a positive relationship between empathetic concern, perspective taking and forgiveness. There is a dispositional view of empathy where in empathy is considered as a relatively stable trait or a general ability to perceive the feelings of other (Sawyer, 1975). Another view considers empathy as a cognitive-affective experience of perspective taking which may vary from situation to situation. It is the second view that forms the underlying assumption for interventions designed to enhance perspective taking (e.g., Goleman, 1996). Social psychologists often take this view in examining the effects of perspective-taking interventions on social processes.

In a unique study done by Takaku (2001), a perspective taking manipulation was tested wherein the researcher asked the victims to imagine how they would feel, think and behave if they were in the offender's position. The victims were also asked to think of a time when they were the offender and were asked to imagine how they felt, thought and behaved. The participants who received the perspective taking manipulation were found to experience benevolent emotional reactions and were more likely to forgive the transgressor than the participants in the control condition. Takaku (2001), asserts that such a perspective taking intervention not only induces empathy but also creates dissonance in the mind of the victim as they consciously or unconsciously become aware of their past where they had been an offender. This "dissonance-like" discomfort pushes the victim to empathize and to make more benevolent attributions which in turn facilitates forgiveness (Takaku, 2001). Arriaga and Rusbult (1998) found that in comparison with participants in the perspective-taking condition (a manipulation), participants in the no-perspective condition reported that they would experience more

negative emotional reactions, less positive emotional reactions, less relationship-enhancing attributions, and less constructive behavioral preferences in the aftermath of conflict.

In the present study I seek to test the influence of perspective taking on forgiveness. I propose the following hypothesis:

Hypothesis 2: Those high on perspective-taking will be more likely to forgive.

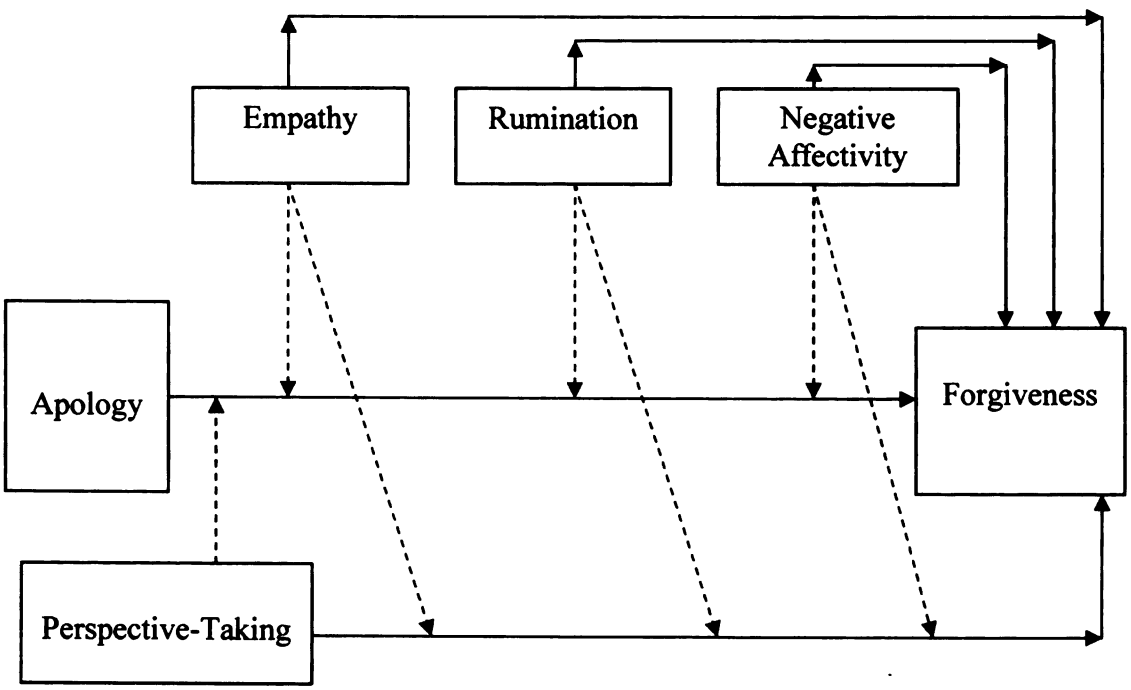
Perspective-taking has also been found to facilitate the influence of apology (Takaku, 2001). In the present study, I also hypothesize that forgiveness will be higher when both apology and perspective taking is high.

Hypothesis 3: Those who receive an apology and are high on perspective-taking will be more likely to forgive.

The hypotheses till now have primarily addressed the main effects of apology and perspective taking on forgiveness. In the present study I seek to examine both the direct and moderating effects of some dispositional variables. The three dispositional variables I examine in this study are: empathy, rumination and negative affectivity. One way in which we can understand the effectiveness of apology and perspective taking as facilitators of forgiveness is by examining how individual difference variables moderate this relationship. Moderating variables have both theoretical and practical implications. Theoretically, identifying and testing moderators helps to establish the boundary conditions for the main effects. Whetten (1989) stated that moderators answer the critical "who-where-when" questions needed for sound theory development. Campbell (1990) also noted that the goal of a research study is to not only test whether a hypothesized relationship is supported or rejected but to also test the conditions under which this

relationship holds. In the world of practice, people/organizations may decide to use apology and/or perspective taking intervention as a process manipulation in the aftermath of interpersonal conflict. In order to do so effectively, they would need to know when the manipulation is more likely to work and when it is least likely to work. I thus plan to examine the direct and moderating role of three dispositional variables (empathy, rumination and negative affectivity). The figure below is a graphical representation of the conceptual model.

Figure1: Conceptual Model



Dispositional Correlates of Forgiveness

The effectiveness of apology and perspective taking may depend on the extent to which the individual ruminates, empathizes and generally experiences negative emotions such as anger, scorn, revulsion, guilt, sense of rejection, self-dissatisfaction and to some extent sadness. Although I expect these individual difference variables to be somewhat

correlated with one another, they represent conceptually different aspects of an individual's disposition.

Empathy

Empathy is defined as the ability to view events from the perspective of others and to have a warm personal concern for them (Davis, 1983). People who are high on empathy tend to put themselves in the other person's position and demonstrate compassion for others by imagining how it must feel like to be in their position. Hoffman (1981) describes empathy as a trigger for a wide variety of generous and altruistic behaviors. Empathy for the offending partner has been found to predict many forms of prosocial phenomena, such as cooperation, altruism, and the inhibition of aggression towards the offender (Batson, 1990, 1991; Batson & Oleson, 1991; Eisenberg & Fabes, 1990; Eisenberg & Miller, 1987; Hoffman, 1981, 1990; Rusbult et al., 1991; Tangney, 1991). Forgiveness scholars assert that empathy enables the victim to separate the offender from the offence and to conceive of the different factors that could have influenced the offender's behavior (Coleman, 1998; Enright & Coyle, 1998).

In the last decade, studies on forgiveness and related constructs in social psychology have examined a variety of individual difference variables that could influence willingness to forgive particular transgressions or transgressors (McCullough, Worthington, & Rachal, 1997; McCullough et al., 1998; Zechmeister & Romero, 2002). The studies that have looked at the relationship between forgiveness and dispositional empathy have found mixed results. Macaskill et al., (2002) found empathy to be related to forgiving others but not to forgiving the self. Tangney, Fee, Reinsmith, Boone, and Lee (1999) found her forgiveness scale to be related to Davis's (1983) perspective-taking

and empathic-concern subscales of the Interpersonal Reactivity Inventory. Brose, Rye, and Lutz (2002) failed to find a significant correlation between their measure of forgivingness and their measure of empathy. In the present study I seek to examine the relationship between trait empathy and forgiveness. I thus hypothesize the following:

Hypothesis 4: Trait empathy will be positively correlated with forgiveness.

Forgiveness researchers assert that empathy competes with the emotion and cognition of unforgiveness and induces compassion which in turn reduces the negative valence of hurts and grudges (Konstam, Holmes & Levine, 2003; McCullough et al., 1997). In a study by McCullough and his associates they found that those who received an apology from the offender were more likely to report empathetic feeling towards the offender and were also more likely to forgive. McCullough et al (1997) posits that forgiveness is influenced by empathy and that apology can elicit empathy from the victim. In the present study I thus hypothesize (See Appendix 1 for a graphical representation of the proposed relationship) that apology will interact with empathy in determining forgiveness such that apology will have a greater influence on forgiveness for those people who are low on empathy.

Hypothesis 5: The relationship between apology and forgiveness will be moderated by empathy.

Empathy can be viewed from a dispositional point of view as a relatively stable trait or a general ability to perceive the feelings of other (Sawyer, 1975). Empathy can also be viewed as a cognitive-affective experience of perspective taking in a given situation. The perspective-taking intervention in this study seeks to induce such a cognitive-affective experience of perspective taking. The perspective taking manipulation

seeks to increase empathizing on the part of the victim. Thus similar to the effect of apology, perspective taking is also likely to interact with trait empathy in determining forgiveness such that perspective-taking will have a greater influence on forgiveness for those people who are low on trait empathy. I thus propose the following moderating hypothesis:

Hypothesis 6: The relationship between perspective-taking and forgiveness will be moderated by empathy.

Rumination

The word rumination actually comes from the word "rumen" which was used to refer to the particular way in which cows eat, where in they bring the partially digested food back into their mouths to chew over more thoroughly. Over the years the word rumination has gone beyond its original meaning and now connotes the practice of dwelling over a negative idea/event and bringing it back to mind repeatedly. Rumination can be seen as the act of mulling over negative things.

Nolen-Hoeksema (1994) defined rumination as "the chronic, passive focus on one's negative emotions". The consequence of ruminating could lead to individuals isolating themselves or obsessively thinking about their hurt rather than engaging in problem-focused coping activities. Such individuals end up spending more time worrying about the consequences of their own distress (Bringle, 1996). According to Nolen-Hoeksema (1994) rumination reinforces "greater access to unhappy memories, enhanced sensitivity to negative information about one's current situation, [and] the probability of making negative interpretations."

Research studies on the psychological correlates of interpersonal forgiveness have found that people tend to be more forgiving to the extent that they avoid ruminating about the offence. McCullough et al., (2001) found that college student's rumination about interpersonal offence is linked to vengefulness (opposite of forgiveness). Emmons (1992) also found that beliefs about vengeance were positively correlated with three measures of rumination—the Padua Inventory (Sanavio, 1988), the Maudsley Obsessional Thinking Inventory (Hodgson & Rachman, 1977), and the Rehearsal Scale of the Emotional Control Questionnaire (Roger & Nesshoever, 1987).

Rumination can be measured as a trait (tendency to ruminate) or state (state of ruminating). At the trait level of analysis, trait rumination can be conceptualized as the tendency to repeatedly focus on the negative things in one's life. It is the tendency of the individual to repetitively recall negative events/experiences and to re-enact the episodes in their minds. Trait rumination manifests itself as repetitive cognitions about negative things (lack of forgiveness) which are primarily automatic and are counterproductive to adaptive behavior. A person high on trait rumination may dwell over the injustice caused by a negative event which can lead to fantasies of revenge. Barber, Maltby and Macaskill (2005) found that anger memories which were the result of rumination were important factors in dealing with revenge thoughts. Berry and Worthington (2005) assert that rumination about interpersonal hurts and offenses is a crucial factor in establishing and maintaining negative emotions such as hostility and anger and is negatively correlated with forgivingness.

The present study differs from other studies done in the area, in terms of correlating trait rumination with forgiveness in response to an actual offence. Most of the

earlier studies have explored the relationship between rumination and trait forgivingness or the relationship between rumination and beliefs about vengeance. Expecting a negative correlation between rumination and forgiveness as a response is based on the idea that there is an inherent conflict between revenge and forgiveness, wherein contemplating about one course of action may suppress awareness of the other alternative. Thus the more one ruminates about negative events the less likely one is to consider forgiveness as a response and vice versa. This reasoning follows directly from what psychologists and laypeople have long known about humans: the more we fix our attention on one thing the harder it gets to focus on the alternative (Fiske, 1989). Thus rumination can create barriers to the consideration of forgiveness as a response. A person who is high on rumination is likely to spend more time worrying about their own distress and obsessively thinking about their hurt rather than engaging in problem-focused coping activities. Such a tendency to ruminate can compete with forgiveness as response.

In the present study trait rumination is defined as the "tendency of an individual to passively and chronically focus on negative events/emotions and to mentally reconstruct negative stressful experiences". I propose the following hypotheses:

Hypothesis 7: There will be negative relationship between trait rumination and forgiveness.

The act of mulling over negative things and the lack of suppression of negative emotions is characteristic of a person high on rumination. Such a tendency to repetitively recall negative events/experiences and to compulsively re-enact the episodes in one's mind is likely to interfere with a person's ability to take the perspective of the other person and to even take into account any explanation (apology) provided by the offender.

I thus propose that rumination will interact with both apology and perspective taking intervention in a way that apology and perspective-taking will be less effective in influencing forgiveness for those individuals who are high on rumination. I thus propose the following moderating hypotheses:

Hypothesis 8: The relationship between apology and forgiveness will be moderated by trait rumination.

Hypothesis 9: The relationship between perspective-taking and forgiveness will be moderated by trait rumination.

See Appendix 2 for a graphical representation of the proposed relationships.

Negative Affectivity

Watson and Clark (1984) defined negative affectivity (NA) as a higher level personality variable that describes the extent to which individuals experience negative emotions like anger, hostility, fear and anxiety. Negative Affectivity is measured in terms of the intensity and frequency with which an individual experiences these distressing negative emotions. People who are high on negative affectivity tend to be distressed and have a negative sense of self (Watson & Clark, 1984). Negative affectivity as a construct is more than just anxiety and neuroticism, it is encompassing of affective states like anger, scorn, revulsion, guilt, sense of rejection, self-dissatisfaction and to some extent sadness (Watson & Clark, 1984).

Studies that have contrasted individuals high and low on negative affectivity have found that individuals high on negative affectivity tend to experience negative emotions and moods across situations (Watson & Clark, 1984). This is one reason why negative affectivity is often conceptualized as a disposition and is measured at the trait level.

People high on negative affectivity are sensitive to even minor frustrations and failures in their everyday life which is evident in their likelihood, magnitude and duration of experiencing negative emotions/moods.

Bies, Tripp, and Kramer (1997) pointed out that individuals high on negative affectivity tend to over scrutinize social interactions and information negatively, thus showing hyper-vigilance. In over scrutinizing interactions they look for hidden sinister plans that others may have to hurt them. When such individuals are faced with identity threats they tend to react with hostile and aggressive actions (Baumeister, Smart & Boden, 1996). Since these individuals have a heightened sensitivity to identity threats they may react with hostility more than individuals who are low on NA in the same situation. Thus it is likely that people who are high on NA may be less likely to forgive than those who are low on NA. The workplace aggression literature as well as the social psychology literature has shown that individuals high on NA are more likely to respond with hostility and tend to exhibit aggressive attributional styles towards others. Skarlicki, Folger, and Tesluk (1999) found a positive relationship between NA and organizational retaliatory behaviors when employees perceived injustice at work. Negative affectivity in general has been associated with retaliatory and aggressive behavior (e.g., Eyesenck & Gudjonsson, 1989; Heaven, 1996).

Considering that forgiveness requires an individual to willingly abandon negative emotions, cognitions and behavior towards the offender, individuals high on NA may find it difficult to give up their desire to react in hostile manner and may not forgive. In the present study "Negative Affectivity" is defined in accordance with the definition given by Watson and Clark (1984). Negative Affectivity is defined as the extent to which

an individual experiences negative emotions like anger, hostility, fear and anxiety, across time and situations". I propose the following hypothesis:

Hypothesis 10: There will be a negative relationship between negative affectivity and forgiveness.

Apart from testing the above hypotheses about how trait negative affectivity influences forgiveness as a response, I also seek to examine the relationship between state affectivity and forgiveness. Although there is sufficient evidence in the literature that points to the fact that trait negative affectivity influences people to experience negative emotions across situation and different stimuli, I plan to test whether trait negative affectivity has a significant association with forgiveness after controlling for state negative affectivity.

Hypothesis 11: Trait negative affectivity will have a significant relationship with forgiveness even after controlling for state negative affectivity.

A person who is high on trait negative affectivity is likely to be over sensitive to transgressions. Trait negative affectivity of an individual can interfere with their ability to take the perspective of others and may influence the effect of apology, as these people tend to be hyper vigilant and often process information negatively. People who are high on trait negative affectivity are likely to interpret an apology as an excuse, as such people have a tendency to over scrutinize interactions and have a tendency to look for hidden sinister plans that others may have to hurt them.

I thus propose that trait negative affectivity will interact with apology and perspective taking intervention in a way that apology and perspective taking intervention will have a weak influence on forgiveness for those individuals who are high on trait

negative affectivity. On the other hand for those individuals low on trait negative affectivity, apology and perspective taking is likely to have stronger influence on forgiveness.

Hypothesis 12: The relationship between apology and forgiveness will be moderated by negative affectivity.

Hypothesis 13: The relationship between perspective taking and forgiveness will be moderated by negative affectivity.

See Appendix 3 for a graphical representation of the proposed interaction relationships.

METHOD

I conducted a laboratory experiment to examine the influence of apology and perspective taking intervention on forgiveness. I also examined the direct and moderating roles of dispositional variables (victim characteristics) like empathy, rumination and negative affectivity. Participants in the study played the prisoner's dilemma game with a confederate in a controlled experimental setting. A 2 (apology vs. no apology) X 2 (perspective-taking intervention vs. control intervention) between subjects design was used.

Participants

The final sample for this study consisted of 125 students from a large Mid-Western University. The sample size was appropriate to detect medium size effects. Power analysis specified for a medium effect size of 0.50 and an alpha of 0.05 indicated a sample size of 80 for sufficient power. In order to detect small size effects one would have to collect data on a much larger sample. I collected data on a sample of 143 subjects as I had anticipated invalid and incomplete responses. After screening the data of 143 subjects for inappropriate responding I was left with 125 subjects (screening procedure to be described later). The average age of subjects was 19 years; 85% of the sample was within the age range of 18-20 years. Seventy-three percent of the sample was female. The average GPA was 3.3. Regarding the ethnicity breakdown, this sample was 87% Caucasian, 7% African American, 4% Hispanic and 2% other. In terms of marital status, 96% were single (never married) and 4% were married.

Task: Prisoner's Dilemma Game

The prisoner's dilemma game is one of the many mixed-motive games that exist in the literature. There are many ways of designing a prisoner's dilemma game. In the context of the present study the subject and the confederate played four rounds of the prisoner's dilemma game wherein they were required to choose between making a co-operative move or a non co-operative move. The confederates were told to defect (non co-operative move) on the third round of the prisoner's dilemma game.

In every round of the prisoner's dilemma game the subject was asked to choose between "UP" (Cooperative Move) or "DOWN" (A defection). At the same time, the confederate made a choice between "RIGHT" (Cooperative move) or "LEFT" (A defection). The choices were made in such a way that when the subject made his/her choice they did not know what the confederate's choice was. The subject knew their partner's (confederate's) choice only after both the people in the game had finalized their choices. Points were displayed on the screen after each round in a 2x2 matrix with value-neutral labels for their choices. Table 1 below indicates the scoring rules for this game. UP-RIGHT indicates the payoff for mutual cooperation which yielded 24 points for each player; DOWN-LEFT indicates the punishment for mutual defection which yielded 12 points for each. DOWN-RIGHT gave 30 points to Player A and 6 points to player B while UP-LEFT yielded the reverse. The scoring matrix is as follows:

Table 1

Symmetric 2x2 Prisoner's Dilemma with payoffs

	Player A Up	Player A Down

Table 1 (cont'd).

Player B Right	A- 24 point B- 24 point	A- 30 points B- 6 points
Player B Left	A – 6 points B – 30 points	A- 12 points B- 12 points

Rationale for using the prisoner's dilemma game

Mixed-motive games like the prisoner's dilemma game provide an experimentally controlled environment to test behavior. Prisoner's dilemma game has been used as a model to study different kinds of interpersonal interactions, including those between individuals working together within an organization (Kramer et al. 1996). Axelrod (1980a, 1980b) explored forgiveness in a mixed-motive game (Prisoner's Dilemma Game) where he operationalized forgiveness as a co-operative move after the partner had defected/offended by making a competitive move. In the present study I did not operationalize forgiveness as a response on the game as there could be other strategic reason why subjects would choose a particular move on the prisoner's dilemma game. In the present study the prisoner's dilemma game was set up to enable experimental control over the offence (i.e. the defection in the prisoner's dilemma game).

Experimental Design

A 2 (apology vs. no apology) X 2 (perspective-taking intervention vs. control intervention) between subjects design was used (see Table 2).

Table 2

2 X 2 Experimental Design

		Apology Treatment	
		Yes	No
Perspective-Taking Treatment	Yes	Group A	Group B
	No	Group C	Control Group

Description of the Conditions

The experimental conditions in this study resulted from the 2 × 2 design described above in Table 2. I manipulated two variables in this study. One was apology and the other was a perspective taking. The subjects in the different experimental groups received the manipulations in the following way:

Apology Condition: In the apology condition (Group A & C), the subjects received an apology communication from the confederate. The apology message was sent during the break which followed the third round of the prisoner's dilemma game where the confederate had defected. The message read as follows, "I'm sorry. I really screwed up. I was being selfish. I shouldn't have done that" (See Appendix 4). The subjects in the apology condition did not receive the perspective taking training intervention but they were required to complete a control training module on study habits (See Appendix 5). This control intervention (study habits) was given to match the groups and to ensure that the groups did not differ in any meaningful way other than the intended manipulation.

Perspective Taking Condition: In the perspective taking condition (Group A & B) the subjects received a communication that said, "Your partner did not utilize the communication option". The subjects in the perspective taking condition continued to do

the irrelevant (filler) task (see Appendix 6) during the break as they had already received the perspective-taking intervention prior to the prisoner's dilemma game. The perspective-taking intervention was designed as a short training module wherein the subjects were given a scenario and were asked to imagine how the offender would feel, think and behave. They were also asked to imagine a time when they had been the offender and to imagine how they felt, thought and behaved. The perspective taking intervention was designed to induce empathy and to encourage reappraisal of a situation from the others point of view. The intervention also stressed the importance of taking different perspectives (See Appendix 7 for the training module).

Apology + Perspective Taking Condition: The subjects in the apology + perspective taking condition (Group A) received the apology communication from the confederate. The subjects in this condition also received the perspective-taking training prior to the prisoner's dilemma game.

Control Group: The control group (Group D) received a communication that said, "Your partner did not utilize the communication option". The subjects in the control group were required to complete the irrelevant (filler) survey during the break and did not receive an apology. The subjects in the control group did not receive the perspective taking training intervention however they did receive the short training module on study habits (See Appendix 5 for the control training module). This control intervention (study habits) was given to match the groups and to ensure that the groups did not differ in any meaningful way other than the intended manipulation.

Procedure

The procedure (in terms of steps in the experiment) is presented below in a tabular form in Table 3.

Table 3

Tabular Representation of the Procedure

STEPS	*DESCRIPTION*
1. Online Consent & Survey	- The subjects gave their informed consent online and completed the dispositional measures (empathy, rumination, and negative/positive affectivity) 3 days prior to the lab session.
2. At the Lab	- All the subjects filled out a state measure of positive/negative affectivity as soon as they came into the lab. - All the subjects received a short training module. The perspective taking intervention and the control group intervention were given to the appropriate groups. - They received information about the prisoner's dilemma game (playing rules, scoring and the reward procedure etc). They also received the manipulation for future interaction (in terms of the information about the future group task). - The subjects and confederates were seated in a room where they received the co-operation prime.
Prisoner's Dilemma Game Design	
3. First Three Rounds	- First round: Subject (Co-operated); Confederate (Co-operated) - Second round: Subject (Co-operated); Confederate (Co-operated) - Third round: Subject (Co-operated); Confederate (Defected) - Break
4. Break Activities	- The subjects filled out a state measure of positive/negative affectivity. - The subjects completed a filler weather survey during the break. - The subjects in the apology conditions received an apology communication from the confederate. - The subjects were given the option of making one communication via their computers to their game partner.
5. Fourth Round	- Fourth round: Subject (?); Confederate (Co-operated)
6. Dependent Variable Measures	- Forgiveness Scale - Open-Ended Questions

Table 3 (cont'd).

7. Hot Sauce Task	- After the subjects completed the self-report measure of forgiveness they were given the hot sauce task (behavioral measure of forgiveness)
8. Debriefing	- Finally the subjects were debriefed.

Detailed Description of the Procedure

Recruitment: To experimentally control the defection in the prisoner's dilemma game setup I recruited 5 confederates. The confederates were extensively trained to participate in the experiment sessions and to deliver the treatment to the experimental groups. I personally ran all the session as an experimenter. The advertisement for this study was put up on the Human Participant Research website. Participation in the experiment was strictly voluntary and confidentiality of responses was assured to the participants. The participants were presented with the informed consent form online. Those students who agreed to participate (by electronically signing the online informed consent form) were randomly divided into four groups. The first group was the apology experimental group. The second group was the perspective-taking group and the third group was the apology + perspective-taking interaction group. Finally the fourth group was the pure control group.

Online Measures: All the subjects filled out a set of online measures (See Appendix 8, 9 and 10). The online measures included measures of trait empathy, trait rumination and trait positive/negative affectivity and other socio demographic variables. All the participants were required to finish the online questionnaires at least 3 days before they came for the laboratory session. This three day requirement had been established to ensure that the items from the dispositional pre-measures were not fresh in the

participant's memory and to avoid any priming effect regarding the researcher's hypotheses.

At the laboratory: The participants who signed up for the lab session were randomly assigned to one of the four experimental groups. All the subjects filled out a state measure of positive/negative affectivity once they come to the lab (See appendix 11). The reason I asked them to fill out a state measure at this point was to obtain their initial base level of affect before they played the prisoner's dilemma game. The subjects in the perspective taking group and the apology-perspective group got the perspective taking intervention before they engaged in the prisoner's dilemma game. The subjects in all the other conditions received similar but irrelevant control training module on studying habits.

Expectation of future interaction manipulation: The subjects were told that they would be playing several rounds of a game with their game partner. They were also told that after they finished playing several rounds of the game with their partner they would do a group task where they would be required to interact with their game partner in person; work on a task as a team. The reason all the participants were given this information was to create an expectation for future interaction. The intention was to simulate an experimental context that was similar to the reality to which I would like to generalize. Employees in today's workplace are required to work in teams. Employees at times have to work interdependently with co-workers, with whom they have had previous negative interpersonal experiences. Even after a conflict where in an employee may have offended the other employee, there is often an expectation for future interaction. The manipulation in this study helped to create such an expectation for future interaction. The manipulation

helped in making the experimental context more similar to the real world context of workplace interactions.

Information on how to play the prisoner's dilemma game and the incentive plan: Prior to the prisoner's dilemma game, participants (subjects along with the confederates) received training on the game and scoring rules. The subjects were told the scoring procedure for every possible move on the game. They were also told that points from every move would be accumulated to determine their individual final score. Following this explanation, participants were asked to answer comprehension questions. The comprehension questions were designed to accomplish two aims: first, to ensure that participants understood the game and knew what they were required to do in every round; second, to give participants the assurance that their counterpart (game partner) understood the game.

The participants were told that the top 25 scorers (out of a total of 100 players) would be selected and only one person would be chosen at random (from the 25 top scorers) to receive the $25 Amazon gift certificate. The reason for giving this incentive was to increase the salience of the outcome of the game for the individual subjects. This information was designed to serve as an incentive for the subjects to accumulate as many points as possible. The incentive did not necessarily put the subjects in direct competition with each other. The winners were selected at random, minimizing the chances of the game to induce an overly competitive mind-set. Furthermore, terms such as *cooperation, competition,* and *opponent* were excluded from the instructions.

Co-operation Prime: After describing the technical aspects (rules and incentive) of the game to the participants, I gave them the co-operation prime. The subject and the

confederate received a tutorial text on their computer screen priming them to co-operate in the prisoner's dilemma game. The tutorial presented the different game scenarios to the subjects. The subjects were told that the best strategy was to co-operate as it would ensure maximum points to both players (See Appendix 12 for the cooperation tutorial). I used a standardized tutorial on co-operation developed by Murningham (1991). This cooperation priming text describes the benefits of cooperating in a prisoner's dilemma game. It has been found to be effective in yielding uniform initial co-operation in many versions of the prisoner's dilemma game.

Steps in the Prisoner's Dilemma Game: The subjects were introduced to their game partners face to face. The confederates were seated far away from the subjects in such a way that the subjects could not see the confederate's computer screen. The subjects were told that they would play several rounds of the game with the same game partner. However, they were not told exactly how many rounds they would play. On the contrary the experimenter and the confederate knew exactly how many rounds of the prisoner's dilemma game would be played. The participants played four rounds of the prisoner's dilemma game with a break in between the 3rd and the 4th round. Before every round the subjects were required to answer two questions regarding their prediction and confidence about their partner's next move (See Appendix 13). These questions tapped into the kind of expectations (in terms of moves) the subjects had with reference to their game partners. The confederate co-operated on the first two rounds and defected on the third round. After the confederate defected I stopped the prisoner's dilemma game for a break. I then measured the subject's current state of affect using the state positive/negative affectivity measure.

During the break the subjects filled out a state measure of positive/negative affectivity and then responded to a filler weather survey on their computers. Before the subjects began the weather survey they were told that they could send one message to their game partner. The computers in the lab had a built-in messaging system which enabled them to make that one communication. The timing was programmed to be such that before the subjects could send a message, the subjects in the apology group and the apology-perspective-taking (interaction) group received the apology message from the confederate. The perspective taking experimental group and the control group continued to fill out the weather survey during the break and received a neutral communication that said that their game partner chose not to utilize the communication option.

After the break, the confederate and the subject played the fourth (last) round of the prisoner's dilemma game. This time also the subjects were unaware of the total number of prisoner's dilemma rounds they would be playing. However the experiment was designed in such a way that the fourth round of the prisoner's dilemma game was the last round. All the moves made by the subjects and confederates were recorded. After the last round of the prisoner's dilemma game the subjects were given the forgiveness measure (See Appendix 14). Before the subjects received the forgiveness scale they were asked the following questions, "Did your game partner co-operate on all the rounds of the game?". All the subjects who answered "No" to this question were automatically given the forgiveness measure. Before they got the forgiveness measure, a small information box told them that the next set of questions was chosen based on their response to the last item. This was done to ensure that the subjects believed that the defection was random and not planned by the experimenter. After the subjects filled out the forgiveness scale

they also answered some open-ended questions (See Appendix 15) asking them about how they felt, and what their thoughts were about their game partner.

Measuring Forgiveness: The dependent variable

Forgiveness was measured using a self-report scale (See Appendix 14). The scale measured the extent to which the subjects let go of their negative emotions like anger and resentment and cognitions of revenge and avoidance. The forgiveness scale consisted of items that had been adapted from the Transgression-Related Interpersonal Motivations Inventory (McCullough et al., 1998). The TRIM as a measure of forgiveness has been used in many research studies on interpersonal forgiveness. The TRIM was originally designed for assessing forgiveness within relatively close relationships. Some of the items from the TRIM were not relevant and appropriate for examining forgiveness in response to offences committed by relative strangers and were thus excluded from the scale. To make the forgiveness measure more relevant to the context of this study I modified some of the TRIM items as well as added some items that tapped into feelings of anger, resentment and hostility towards the offender. I also used items from the avoidance and retribution subscales of TRIM to measure participant's cognitions to seek revenge against and to avoid their transgressors. The avoidance and revenge subscales have been shown to have high internal consistency (alpha = .85), moderate test-retest stability (8-week test-retest rs = approx.50), and evidence of convergent and discriminant validity (McCullough et al., 1998, 2003). Respondents were required to indicate their level of agreement or disagreement with each statement on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Negative items were reverse scored so that higher scores indicated higher levels of forgiveness.

Open-Ended Measure: After the subjects finished answering the forgiveness scale they were given a short open-ended questionnaire assessing their perceptions of the game and how they felt toward their game partner. The open ended survey consisted of questions such as, "If you chose UP in the last round please tell us what motivated you to make that choice?"; "If you chose DOWN in the last round please tell us what motivated you to make that choice?"; "What were you thoughts about your partner during the break?" "What are your thoughts about your partner now?" "What were your feelings like towards your partner during the break?"; "What are your feelings like towards your partner now?"; "Would you like to work with your partner in a future group task? Why?"

Behavioral Measure: I also used a behavioral measure of forgiveness, where in the subjects were put in a situation where they had the option to overtly take revenge and aggress towards their game partners. Those who choose not to take revenge were considered to be high on forgiveness. Described below is the hot sauce task which I used as a measure of revenge and aggression towards the confederate (game partner).

Hot Sauce Task: A behavioral measure of forgiveness (lack of revenge and aggression)

Rationale behind the Hot Sauce Task: The hot sauce task provides us with a behavioral measure of forgiveness (lack of revenge and aggression). It provides the subjects with an opportunity to aggress against a target person by choosing an amount of extremely spicy sauce to be allocated to the target person to consume (revenge). The hot sauce measure has certain advantages and can be used as a supplementary measure along with a self-report measure of forgiveness. The hot sauce measure is easily quantifiable and also gives us data in terms of behavioral response as opposed to what the subject reports he/she will do in a self-report measure. The hot sauce measure also has ecological validity as a

measure of revenge and aggression, in that spicy food has been recently utilized in real world acts of revenge and media portrayals of aggression (Lieberman, Solomon, Greenberg & McGregor, 1999). Social psychology experiments have tested the validity of the hot sauce task as a measure of revenge and aggression. Lieberman et al (1999), manipulated subjects in a way that offended them and found that subjects had a tendency to allocate more hot sauce to the confederates who threatened their worldview (manipulation to increase aggression) as opposed to confederates who were consistent with the subject's worldview.

Procedure for the Hot Sauce Task: After the subjects finished playing the last round of the prisoner's dilemma game they were asked to fill out some measures (forgiveness scale and open-ended questions). After they had filled out the measures they were told that the study they had signed up was complete. The experimenter reminded them of the fact that the study got over earlier than anticipated. The subjects were told that they could use the extra time (based on the credits offered) to participate in another unrelated study that was being done by a colleague in the cognitive psychology department. The subjects were told that they had the option to not participate if they didn't want to, but that their credits would be affected. One hundred percent of the subjects participated in the second study. Once the subjects agreed to help out with the other study, the experimenter described to them the personality and taste-preference study.

The experimenter explained to the subjects that different types of foods (dry, sweet, spicy etc) were being examined in this study. They were also told that on the particular day the study was specifically examining spicy foods. The subjects were told the relevance of the personality and taste-preference study, along with a lot of

information about the work being done by the colleague. This was done to remove any suspicion that the two studies were related.

The subjects were told that they were required to prepare a sample of hot sauce that would be entirely consumed by their game partners who would then have to rate the sample on spicyness. Before the subjects actually prepared the sample of hot sauce they were given false feedback about their game partner's low tolerance for spicy foods. After the subjects had received the false feedback, the experimenter gave them the hot sauce tray that had a 12-oz Styrofoam cup with a lid, two plastic teaspoons, a 10-oz bottle of hot sauce and a cup of water. To ensure that the participants were aware of the intensity of the sauce, they were instructed to taste a sample of the sauce prior to allocating it to the target person. They were told that the cup of water had been provided to them to eliminate any discomfort that might be caused in their tasting the hot sauce. The fact that I gave them the cup of water to remove the discomfort reinforced the notion that consuming the hot sauce was going to be a noxious experience for their game partners. The subjects were asked to put any quantity of hot sauce (any amount they desire) into the Styrofoam cup using the plastic spoon and to seal it with the lid. The subjects were also told that neither the experimenter nor the game partner would know how much hot sauce had been poured into the cup and that the game partner would have to consume the whole amount and then rate it.

The experimenter gave the hot sauce tray (apparatus for preparing the sample) to the subjects and left the room. After the subjects were done preparing the sample, the experimenter collected the covered cups. The subjects were also given a one item

measure that tapped into their tolerance for spicy food. This measure was given to gather data on the individual's level of spice tolerance.

The main unit of measurement for this behavioral measure of forgiveness (lack of revenge and aggression) was the weight of the sauce-filled Styrofoam cup minus the weight of the empty Styrofoam cup. The weight was taken in milligrams on a sensitive calibrated gram scale. The hot sauce used in this study was specially prepared to be hot (using a standardized recipe) and to be of an even consistency so that it could be allocated in amounts (volume) greater than a drop or two.

Once the subjects had completed the hot sauce task, they were given manipulation check questions, officially debriefed and were allowed to leave the lab.

Manipulation Checks

Perspective Taking: To check if the subjects in the experimental group got the perspective taking manipulation, they were asked to respond to some questions after completing the hot sauce task. The questions were as following, "Did you receive a short task and training on perspective taking?" To also assess if the subjects paid attention and completed their task during the training, I also asked them the following set of questions, (a) "Did you complete the task you were asked to do during the training?" (b) "While doing the task where you were asked to imagine a time when you were an offender, did you try to imagine how you thought, felt, and behaved?"; (c) "While doing the task did you try to imagine how you would feel, think and behave if you were the classmate in the scenario"; (d) "While doing the task did you try to imagine how the classmate would think, feel, and behave?"

Apology: After the subjects had completed the hot sauce task, they also responded to the following set of questions: "Did your game partner make a non-cooperative move (defection) on the game?"; "Did you receive a communication of apology from your game partner?". If they answered yes to both these questions, they were asked to rate the quality of the apology on the following dimensions: sincerity, honesty, degree of expressed remorse, degree of expressed need for reconciliation and authenticity (See Appendix 16 for more details).

Negative Affectivity: To check if the defection by the confederate had led to elevated levels of negative emotions (like anger and hostility), I administered a state measure of positive/negative affectivity (See Appendix 11) to the subjects right after the defection during the break.

Other Measures

The measurement of the dependent variable of forgiveness has already been described in detail earlier. Described below are the other measures that were used in this experimental study. A description of each measure follows:

Demographics. The demographics are presented in Appendix 17. They included gender, age, race/ethnicity, marital status, college GPA and major.

Empathy: For the purpose of this study I used three of the four subscales (i.e., Perspective Taking Scale, Personal Distress Scale and the Empathic Concern Scale) of the Interpersonal Reactivity Index (IRI; Davis, 1983). These subscales have been previously used to measure trait empathy (dispositional empathy). The three subscales I used included: a) EC- empathic concern (feelings of warmth and compassion for others), b) PD- personal distress (feelings of anxiety and distress when observing other peoples'

negative experiences), and c) PT -perspective taking (ability to adopt the perspectives of other people). Internal consistencies of the IRI subscales have been found to range from .71 to .77. Respondents were required to rate the 21 items on a 1–5 Likert-type scale (1 = Does not describe me well, 5 = Describes me well). The sample items is as following, "I sometimes try to understand my friends better by imagining how things look from their perspective (PT)"; "I often have tender, concerned feelings for people less fortunate than me (EC)".

Rumination: Rumination was measured by using items adapted from the Impact of Events Scale (IES; Horowitz, Wilner, & Alvarez, 1979). The IES is a 15-item self-report measure that assesses the frequency of negative intrusive content (thoughts, images, affect) and attempts to suppress this content. Internal consistency of the scale has been shown to range from 0.78 to 0.96. The IES items had been adapted in the present study to measure rumination tendencies about negative experiences in general as opposed to specific life events. Sample items are as following: "I think about negative experiences even when I don't mean to"; "I have dreams about negative experiences"; "Pictures about negative experiences keep popping into my mind".

Trait Negative Affectivity: The Positive Affectivity-Negative Affectivity Scale (PANAS) (Watson, Clark & Tellegen, 1988) was used to measure trait negative and positive affectivity. The instrument consisted of ten words describing negative emotions. The items were averaged to produce a scale score. The participants were asked to make global rating of the extent to which they felt each emotion on a five point scale ranging from `very slightly' (=1) to `extremely' (=5). The trait and state distinction was made in terms of the time frame specified in the instructions. Burke and colleagues (1993) argue that the

longer the time frame, the more the respondents rating will exhibit trait-like stability. Internal consistency reliabilities of the PANAS have been shown to be good with alpha reliabilities for the positive scale ranging from .86 to .90 and for the negative scale from .84 to .87 for various time point measures. This suggests that there is little variation in internal consistency across the different time point measures.

State 1- Negative Affectivity: A state measure of negative affectivity was given to the subjects at the beginning of the experiment (before they played the prisoner's dilemma game). The state 1- Negative Affectivity instrument consisted of ten words describing negative emotions. The items were averaged to produce a scale score. The participants were asked to make rating of the extent to which they felt each emotion (at that very moment) on a five point scale ranging from `very slightly' (=1) to `extremely' (=5).

State 2- Negative Affectivity: A state measure of negative affectivity was also given to the subjects, right after the third round of the prisoner's dilemma game (right after the confederate had defected on the game). The state 2- Negative Affectivity instrument consisted of ten words describing negative emotions. The items were averaged to produce a scale score. The participants were asked to make rating of the extent to which they felt each emotion (at that very moment) on a five point scale ranging from `very slightly' (=1) to `extremely' (=5).

Pilot Testing and Contingency Plans

I ran two pilot laboratory sessions before I began to formally collect data for this study. The co-operation priming text used to prime the subjects to co-operate in the first three game rounds worked successfully (100% success rate) in both the pilot sessions. I also collected some qualitative data from the subjects to check if the defection by the

confederate was perceived as an offence/violation of an expectation. The subjects believed that their game partners (the confederates) in the room were other undergraduate students who had signed up for the experiment. On interviewing a small subset of the subjects regarding the game, it was evident that the subjects were angry and upset at their game partners for cheating on the game.

Although I gave a potent and previously tested co-operation prime to the subjects before they actually played the prisoner's dilemma game there were 14 subjects who defected during the first three rounds of the game. The idea behind this experimental design was to build an expectation of co-operation between the subject and the confederate and to have control over the offence (defection by the confederate). If the subject defected in any one of the first three rounds of the prisoner's dilemma game, the intended design underwent a change. In those cases the confederate became the victim and the subject in turn became the offender. I therefore decided to remove the 14 subjects from the final sample.

Data Screening Procedure

The data from 143 subjects was screened to identify inappropriate responses. All subjects who had less than 60% data were removed leaving data for 139 subjects. In order for the design to be meaningful I required that all subjects cooperate in the first three rounds of the prisoner's dilemma game. So I further cleaned the data by searching for subjects who had defected before the confederate had defected on the prisoner's dilemma game. I removed the data of 14 subjects who had defected before the confederate. After cleaning the data I was left with a sample of 125 subjects.

RESULTS

The present study examined the influence of apology and perspective taking on forgiveness. It also examined the direct influence of stable dispositions such as empathy, rumination and negative affectivity on forgiveness. Finally the study examined how these individual difference variables moderated the influence of apology and perspective-taking on forgiveness. Analysis of variance (ANOVA) was used to test the main effects of apology and perspective taking on forgiveness. Multiple regression was used to test the relationship between the individual difference variables and forgiveness. Finally analysis of covariance (ANCOVA) was used to test the moderating role of individual difference variables on the influence of apology and perspective taking on forgiveness.

Scale Development

I ran several analyses to examine the psychometric properties of the scales. I conducted principal component analyses to determine the structure of items within a scale. I also conducted reliability analyses to determine the internal consistency of the items in the scales.

Negative Affectivity Measure: The Positive Affectivity-Negative Affectivity Scale (PANAS) (Watson, Clark & Tellegen, 1988) is an established and well evaluated scale in the literature. Two broad, general factors labeled as positive affectivity and negative affectivity have been identified and consistently found across diverse samples and time frames (Almagor & Ben-Porath, 1989; Watson, Clark & Tellegen, 1984). Internal consistency reliabilities of the PANAS have been shown to be good with alpha reliabilities for the positive scale ranging from .86 to .90 and for the negative scale from

.84 to .87 for various time point measures. In the present study the reliability for the negative affectivity scale was .83.

Other than the standardized PANAS scale, the self-report scales used in the present study have not been well evaluated in the literature. Thus I examined the psychometric properties of the following scales:

Forgiveness Self-Report Measure. First, I conducted an exploratory principal component analysis with all 16 forgiveness items. Seven items were discarded based on their low component loadings and high cross loadings. In discarding the items I analyzed the content of the items and ensured that the final measure of forgiveness comprised of items that covered the full breath of the construct. Once the poor items were discarded I ran another principal component analysis to examine the component structure of the measure.

A single component emerged which accounted for 55% of the variance. The single component had an Eigenvalue of 4.99 (55.48% variance accounted) while the second component had an Eigenvalue of .92 (10.17% variance accounted). Based on the Kaiser's criterion and an analysis of the scree plot, the single component solution was retained to form a unidimensional measure of forgiveness. The component loadings for the scale ranged from .60 to .83. The component matrix for this measure is presented in Table 4 below:

Table 4

The Component Matrix for the Unidimensional Forgiveness Scale

Items	Forgiveness
Item 1	.82

Table 4 (cont'd).

Item 2	.82
Item 3	.80
Item 4	.78
Item 5	.78
Item 6	.73
Item 7	.72
Item 8	.63
Item 9	.60

Note: Extraction Method: Principal Component Analysis.

The alpha for the forgiveness measure was .90. For the final set of items please see Appendix 14.

Trait Rumination Measure. I conducted an exploratory principal component analysis with the 15 rumination items. Four items were discarded based on their low component loadings and high cross loadings. In discarding the items I analyzed the content of the items and ensured that the final measure of rumination comprised of items that covered the full breath of the construct. Once the poor items were discarded I ran another principal component analysis to examine the component structure of the measure. Two strong components emerged that in total accounted for 55% of the variance. The first component had an Eigenvalue of 4.04 (36.68% variance accounted); the second component had an Eigenvalue of 1.97 (17.91% variance accounted) and the third

component had an Eigenvalue of .91 (8.28% variance accounted). Based on the Kaiser's criterion and an analysis of the scree plot, the two component solution was retained to form two subscales of trait rumination. I analyzed the item content to label the two components. The first component was labeled as "negative content" (as it consisted of items measuring the frequency of negative thoughts and emotions) and the second component was labeled as "suppression" (as it consisted of items that measured attempts to suppress negative thoughts).

The component loadings for the first component ranged from .60 to .81 and the component loadings for the second component ranged from .66 to .87. Correlation between the two components was .22. The pattern matrix displaying the component loadings for the two components is presented in Table 5.

Table 5

The Pattern Matrix for Two Subscales of Trait Rumination

	Negative	
Items	Content	Suppression
Item 1	.81	
Item 2	.79	
Item 3	.77	
Item 4	.77	
Item 5	.66	
Item 6	.66	
Item 7	.60	
Item 1		.87

Table 5 (cont'd).

Item 2	.72
Item 3	.69
Item 4	.66

Note: Extraction Method was Principal Component Analysis; Rotation Method was Oblimin with Kaiser Normalization. Rotation converged in 3 iterations.

The alpha for the negative content component was .85 and for the suppression component was .71. For the final set of items in the two subscales see Appendix 9.

Trait Empathy Measure. Similar to the earlier analyses I first conducted an exploratory principal component analysis with the 21 empathy rumination items. Ten items were discarded based on their low component loadings and high cross loadings. In discarding the items I analyzed the content of the items and ensured that the final measure of empathy comprised of items that covered the full breath of the construct. Once the poor items were discarded I ran another principal component analysis to examine the component structure of the measure. Two strong components emerged that in total accounted for 48.33% of the variance. The first component had an Eigenvalue of 3.61 (32.85% variance accounted); the second component had an Eigenvalue of 1.70 (15.48% variance accounted) and the third component had an Eigenvalue of 1.01 (9.18% variance accounted). Based on the Kaiser's criterion and an analysis of the scree plot, the analysis suggested a three component solution. However, based on a conceptual analysis

of the items in the third component I decided to retain the two component solution which formed the two subscales of trait empathy.

I then ran another principal component analysis where in I forced a two component solution. The two components in total accounted for 48.33% of the variance. I analyzed the item content to label the two components. The first component was labeled as "Perspective Taking" (as it consisted of items measuring the extent to which people were able to take the perspective of others) and the second component was labeled as "Empathetic Concern" (as it consisted of items that measured the extent to which people were able to empathize and feel compassion for others). The component loadings for the first component ranged from .60 to .79 and the component loadings for the second component ranged from .55 to .72. Correlation between the two components was .29. The pattern matrix for the two subscales is presented in Table 6 below:

Table 6

The Pattern Matrix for Two Subscales of Trait Empathy

	Perspective Taking	Empathetic Concern
Item 1	.79	
Item 2	.76	
Item 3	.76	
Item 4	.69	
Item 5	.65	
Item 6	.60	
Item 1		.72
Item 2		.70
Item 3		.65

Table 6 (cont'd).

Item 4	.59
Item 5	.55

Note: Extraction Method was Principal Component Analysis; Rotation Method - Oblimin with Kaiser Normalization. Rotation converged in 3 iterations.

The alpha for the first subscale was .81 and for the second subscale was .65. For final set of items in the two subscales see Appendix 8.

Attribution Measure. The exploratory principal component analysis with the 4 attribution items revealed a clean one component structure solution. The single component had an Eigenvalue of 2.45 and accounted for 61.12% of the variance, while the second component had an Eigenvalue of .72 and accounted for 17.92% of the variance. Based on the Kaiser's criterion and an analysis of the scree plot, the single component was retained to form a unidimensional measure of attribution. The component loadings for the scale ranged from .66 to .86. The component matrix for this measure is presented in Table 7 below:

Table 7

The Component Matrix for the Unidimensional Attribution Scale

Items	Attribution
Item 1	.86
Item 2	.81
Item 3	.78
Item 4	.66

Note: Extraction Method: Principal Component Analysis.

The alpha for the attribution scale was .77. For the final set of items see Appendix 18.

Quality of Apology Measure. The exploratory principal component analysis with all the five apology quality items revealed a clean one component structure solution. The single component had an Eigenvalue of 3.75 and accounted for 75.95% of the variance, while the second component had an Eigenvalue of .57 and accounted for 11.32% of the variance. Based on the Kaiser's criterion and an analysis of the scree plot, the single component was retained to form a unidimensional measure of apology quality. The component loadings for the scale ranged from .74 to .93. The component matrix for this measure is presented in Table 8 below:

Table 8

The Component Matrix for the Unidimensional Apology Quality Scale

Items	Apology Quality
Sincerity	.93
Honesty	.93
Remorse	.86
Reconciliation	.74
Authenticity	.86

Note: Extraction Method: Principal Component Analysis.

The alpha for the apology quality scale was .92. For the final set of items please see appendix 16.

Summary. The psychometric analyses resulted in the formation of the following scales:

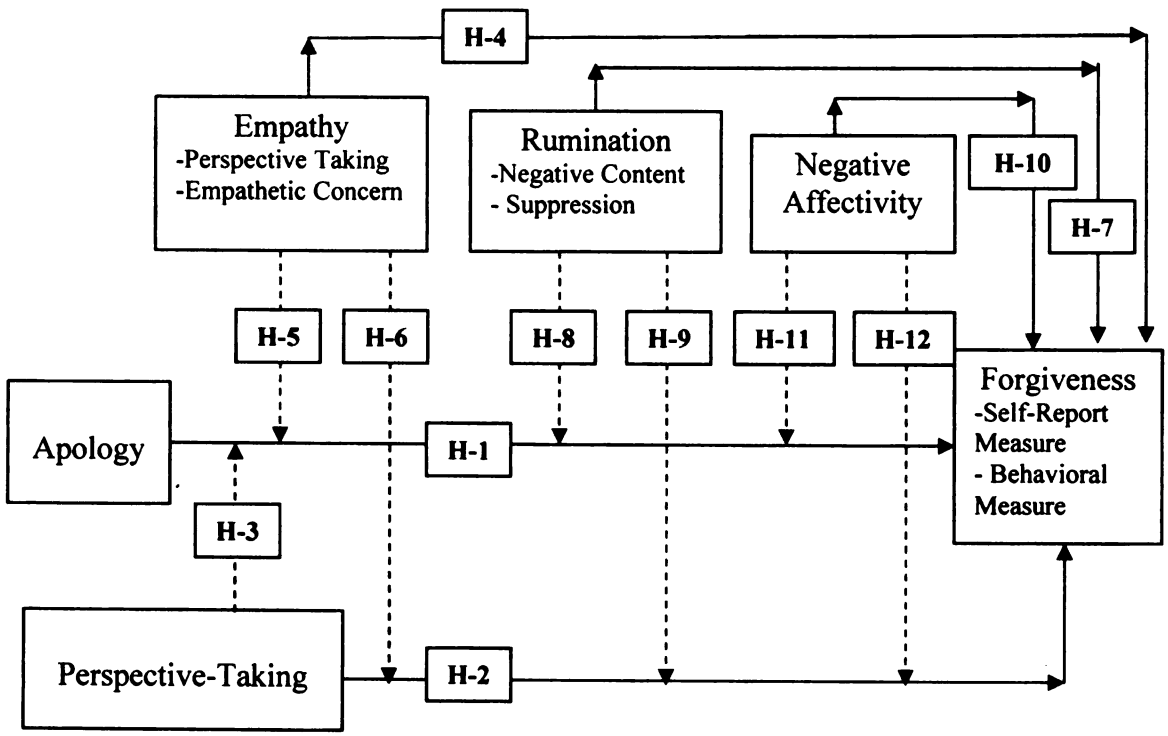
1. Unidimensional self-report measures of forgiveness, attribution and apology quality

2. Two subscales of trait rumination and trait empathy

Since I found two components within the broader trait measures of empathy and rumination, the hypotheses below will be tested for both the components separately. In this study I have also used two different ways of measuring forgiveness: through a self-report scale and through a behavioral measure. Since I used two different ways of measuring forgiveness, the hypotheses will be tested separately for the two kinds of dependent variables. Below is a graphic representation of the hypotheses tested.

Figure 2

Hypotheses Tested



Descriptive Statistics

The means, standard deviations and intercorrelations for all the variables in the study are presented in Table 9. A five point response scale was used for all the variables except for the demographics, spice tolerance (10 point scale) and behavioral measure of forgiveness (milligrams of hot sauce). Apart from the two state measures of negative affectivity, the standard deviation values (above .50) for most variables indicate an appropriate amount of variance in the measured variables. One possible explanation for the low standard deviation of state 1-negative affectivity might be the similarity of experimental context. The "State 1 Negative Affectivity" measure was given to all subjects at the beginning of the experimental session (before they played the prisoner's dilemma game). All the subjects had received similar information and instructions about the experiment and thus can be expected to experience similar emotions at the beginning of the experimental session. The "State 2 Negative Affectivity" measure was administered right after the defection on the prisoner's dilemma game. The low standard deviation of State 2-negative affectivity can be seen as an indicator of the strong situation that was created as a result of the offence (defection on the prisoner's dilemma game).

The mean for trait negative affectivity was below neutral. The means for the rumination subscales were close to the neutral point. The means for the empathy subscales on the other hand were above neutral. The means and standard deviations for the individual difference variables were consistent with my expectations (in the expected direction) given the probability of socially desirable responding in self-report measures of personal attributes. The mean for forgiveness (self-reported) was slightly higher than expected. This could be due to the nature of the construct being measured and once again

the likelihood of socially desirable responding. However the standard deviation for forgiveness (self-reported) indicates appropriate variance thus rendering the construct worthy of examination. The behavioral measure of forgiveness had a high standard deviation indicating that there was a lot of variance in the amount of hot sauce allocated to the confederates. The mean and standard deviations for the behavioral measure of forgiveness is slightly surprising given the fact that revenge is not a socially desirable action. The high amount of variance on this measure can be interpreted as a sign of the effectiveness of the research design in creating an environment that allowed individuals to express their desire for retaliation.

There are interesting correlation patterns between the independent variables (experimental manipulations and individual difference variables) and the dependent variable of forgiveness (self report and behavioral). The self-report measure of forgiveness was significantly correlated with the behavioral measure of forgiveness (r = -.28), such that those who were high on forgiveness (self-report) were less likely to engage in retaliatory behaviors. Positive attributions towards the offender was significantly and positively correlated (r = .72) with self-reported forgiveness and negatively correlated (r = -.22) with retaliatory behaviors. Trait empathetic concern and trait perspective taking were significantly correlated (r = -.22; r = -.18) with the behavioral measure but not with the self-report measure of forgiveness. State negative affectivity (state 2 – right after the defection) predicted self-reported forgiveness (r = -.28) but did not predict the behavioral measure of forgiveness. Apology (r = .19) and quality of apology (r = .41) were both significantly correlated with self-reported forgiveness but not with the behavioral measure of forgiveness. Those who received an apology were more likely to forgive.

Those who rated the quality of apology to be high were more likely to forgive than those who rated the apology low on quality. The correlation patterns are insightful as they indicate differential antecedents for the two measures of forgiveness. These results will be analyzed in greater detail in this section and will be discussed later in the discussion section.

Trait negative affectivity was significantly and positively correlated with negative rumination (r = .46). This can be expected as the two constructs tap into the frequency of negative emotions (negative affectivity) and thoughts (rumination). The second aspect of rumination which was measured as the suppression of negative content was not significantly correlated with trait negative affectivity. These correlations indicate that trait rumination is similar to negative affectivity but has a distinct suppression component that is different from trait negative affectivity. As expected, the intercorrelations between negative affectivity and trait empathy were non-significant; indicating discriminant validity for the two constructs.

Gender was positively and significantly correlated with trait empathetic concern (r = .34) and trait negative affectivity (r = .20), such that women were higher on trait empathetic concern and trait negative affectivity. Gender was also negatively correlated (r = -.23) with the behavioral measure of forgiveness, such that males were more likely to retaliate than females. It is a possibility that the correlation between gender and the behavioral measure is through the effect of trait empathy, as trait empathetic concern is significantly correlated with gender (r = .20) and the behavioral measure (r = -.22).

Table 9
Indicating the Means, Standard Deviations, Intercorrelations and Alphas for all the Scales

	Variables	Mean	SD	1	2	3	4	5	6	7
1	Forgiveness Self Report	4.36	.63	***.90***						
2	Behavioral Measure	28.65	47.48	-.28**	-					
3	Trait Negative Affectivity	2.00	.57	-.13	-.02	***.83***				
4	Trait Empathetic Concern	3.95	.58	.08	-.22*	.08	***.65***			
5	Trait Perspective Taking	3.44	.71	.16	-.18*	-.14	.34**	***.81***		
6	Negative Rumination	2.74	.78	-.11	-.02	.46**	.11	.04	***.85***	
7	Suppression Rumination	2.62	.64	-.04	-.02	.12	-.11	.01	.22*	***.71***
8	State 1- Negative Affectivity	1.46	.45	-.08	.05	.34**	-.05	-.10	.12	.14
9	State 2- Negative Affectivity	1.43	.40	-.28**	.16	.34**	.07	-.12	.15	.09
10	Perspective Taking	.49	.5	.16	-.04	-.14	.28**	.10	.01	-.18*
11	Apology	.49	.5	.19*	.01	-.10	-.21*	-.08	-.04	-.13
12	Quality of Apology	3.63	1.04	.41**	-.14	-.15	.06	-.13	-.09	.01
13	Positive Attribution	4.33	.63	.72**	-.22*	-.11	.10	.04	-.10	-.04
14	Tolerance for Spicy Foods	5.06	2.70	.11	.07	-.03	-.07	.02	.04	-.01
15	Gender	.73	.45	.03	-.23**	.20*	.34**	.15	.11	.04
16	Age	19.23	1.58	-.04	.03	.04	-.15	.05	.14	.01
17	Race	.87	.34	-.15	.03	-.09	-.03	-.12	.01	.09
18	Marital Status	.04	.20	-.05	-.02	-.01	-.07	-.02	-.11	-.10
19	GPA	3.32	.52	-.04	.00	-.02	.12	-.16	-.05	.08

Note: * Signifies p<.05; ** signifies p<.01; N was 125 for all variables except for apology and perspective taking (experimental manipulations); apology and perspective taking group each had 61 subjects; Gender: 0-Male; 1- Female; Marital Status: 0-Single, 1-Married; Race: 1-White, 0-Minorities.

Table 9 (cont'd).

	Variables	Mean	SD	8	9	10	11	12	13	14
8	State 1- Negative Affectivity	1.46	.45	***.81***						
9	State 2- Negative Affectivity	1.43	.40	.70**	***.76***					
10	Perspective Taking	.49	.50	-.14	-.16	-				
11	Apology	.49	.50	.12	.01	-.06	-			
12	Quality of Apology	3.63	1.04	-.06	-.20	.12	-.02	***.91***		
13	Positive Attribution	4.33	.63	-.03	-.20*	.17	.15	.34**	*.77*	
14	Tolerance for Spicy Foods	5.06	2.70	-.10	-.04	.00	.17	-.13	.03	-
15	Gender	.73	.45	.15	.14	.02	-.05	.10	.02	-.10
16	Age	19.23	1.58	.00	-.06	-.02	.09	-.18	-.02	.09
17	Race	.87	.34	.12	.15	-.01	-.01	.02	-.14	-.06
18	Marital Status	.04	.20	.10	.02	-.04	-.04	.03	-.14	-.09
19	GPA	3.32	.52	-.01	.01	.04	-.08	.18	-.01	-.14

Note: * Signifies p<.05; ** signifies p<.01; N was 125 for all variables except for apology and perspective taking (experimental manipulations); apology and perspective taking group each had 61 subjects; Gender: 0-Male; 1- Female; Marital Status: 0-Single, 1-Married; Race: 1-White, 0-Minorities.

Table 9 (cont'd).

	Variables	Mean	SD	15	16	17	18	19
15	Gender	.73	.45	-				
16	Age	19.23	1.58	.00	-			
17	Race	.87	.34	-.08	-.25**	-		
18	Marital Status	.04	.20	-.06	.44**	-.17	-	
19	GPA	3.32	.52	-.12	-.40**	.39**	-.20*	-

Note: * Signifies p<.05; ** signifies p<.01; N was 125 for all variables except for apology and perspective taking (experimental manipulations); apology and perspective taking group each had 61 subjects; Gender: 0-Male; 1- Female; Marital Status: 0-Single, 1-Married; Race: 1-White, 0-Minorities.

Manipulation Checks

Perspective Taking. To check if the subjects in the experimental group got the perspective taking manipulation, they were asked to respond to five manipulation check questions after completing the hot sauce task. All the subjects who were suppose to receive the perspective taking intervention actually stated that they received the intervention and reported completing it according to the given instructions. The table below summarizes the response for the five questions in terms of number of people.

Table 10

Manipulation Check Questions for the Perspective Taking Intervention

Questions	Experimental Groups Yes	Control Group No
Did you receive a short task and training on perspective taking?	61	64
Did you complete the task you were asked to do during the training?	61	64
While doing the task where you were asked to imagine a time when you were an offender, did you try to imagine how you thought, felt, and behaved?	61	64
While doing the task did you try to imagine how you would feel,	61	64

Table 10 (cont'd).

think and behave if you were the classmate in the scenario?	61	64
While doing the task did you try to imagine how the classmate would think, feel, and behave?	61	64

Apology. After the subjects completed the experiment they were asked to respond to another set of manipulation check questions. Table 11 summarizes the manipulation check data. All the subjects who were in the apology and interaction condition reported having received an apology communication from their game partners.

Table 11

Manipulation Check Questions for Apology Manipulation

Questions	Experimental Groups Yes	Control Group No
Did your game partner make a non-cooperative move (defection) on the game?	125	0
Did you receive a communication of apology from your game partner?	61	64

Expectation of Cooperation. For the design to work it was important for the subjects to develop an expectation for co-operation which would then be violated by a defection. To examine if the first three rounds of the prisoner's dilemma game actually created an expectation of co-operation I measured the subject's expectation regarding their game partner's move before every round of the game. I also measured their confidence (in percentage) in their expectation regarding their game partner's next move. Table 12 below presents the results for the four rounds of the prisoner's dilemma game.

Table 12

Indicates the Number of Subjects, Expected Move and the Confidence in Expectation

	N	Expected Move	Confidence in Expected Move
Round 1	114	Cooperation	82%
	10	Non-Cooperation	60%
Round 2	124	Cooperation	85%
	1	Non-Cooperation	100%
Round 3	119	Cooperation	90%
	3	Non-Cooperation	75%
Round 4	94	Cooperation	66%
	30	Non-Cooperation	57%

The results in Table 12 indicate that with every round (till the 3rd round) the subject's confidence in their expectation of a cooperative move by their game partner increased (from 82% to 90%). The number of subjects who expected a cooperative move from their game partner also increased. These results indicate that the subjects over time developed an expectation of cooperation. After the third round of the prisoner's dilemma game (where the confederate defected) the expectation for cooperation dropped. Out of the 125 subjects only 94 subjects expected their game partner to cooperate and they had only 66% confidence in their expectation.

Perception of Transgression. To examine if the subjects perceived the defection as a transgression or violation of an expectation I also collected qualitative responses from the subjects. The subjects responded to open-ended questions regarding their thoughts and feelings about the moves made by the confederate. Below are some quotes from the subjects:

- "I was a little annoyed and thought she was a little selfish. I thought that it was tricky to get me to think she would pick right every time."
- "I thought they were going to choose right."
- "I was a little upset with them for choosing LEFT...a little shocked."

To test whether the defection actually made the subjects angry and hostile, I measured their emotional state (level of anger and hostility) before the game and compared it to their emotional state after the offence. The mean ratings for the emotion "Upset" increased from 1.50 to 1.73 after the defection. The mean rating for the emotion "Hostile" also increased from 1.24 to 1.49. The increase in mean rating for the two emotions was not statistically significant; however they were in the expected direction.

Hypothesis Testing

Influence of Apology and Perspective-Taking on Forgiveness

Hypothesis 1: Apology will have a positive relationship with forgiveness.

Hypothesis 2: Those who receive the perspective-taking intervention will be more likely to forgive than those who did not receive the perspective-taking intervention.

Hypothesis 3: Those who receive an apology and the perspective-taking intervention will be more likely to forgive than those who receive only an apology.

Self-Reported Forgiveness

To test the first three hypotheses I ran a factorial ANOVA model. The 31 participants in the control condition had mean forgiveness score of 4.10 (SD = .77); the 33 participants in the apology condition had mean forgiveness score of 4.42 (SD = .51); the 33 participants in the perspective-taking intervention condition had mean forgiveness score of 4.38 (SD = .58) and the 28 participants in the interaction (apology X perspective

taking) condition had mean forgiveness score of 4.56 (*SD* = .56). The factorial ANOVA model yielded a significant main effect for apology ($F(1,124) = 5.32$; $p < .05$; $R^2 = .04$), such that those who received an apology had significantly higher forgiveness scores than those who did not receive an apology. The main effect of perspective-taking intervention ($R^2 = .03$) was close to significant, $F(1, 124) = 3.74$, $p = .055$, such that those who received the perspective-taking intervention had higher forgiveness than those who did not receive a perspective-taking intervention. However, the interaction effect was non-significant ($F(1, 124) = .38$; n.s.; $R^2 = .00$).

In summary hypothesis 1 was supported where in those who received an apology forgave the transgressor more than those who did not receive an apology. Hypotheses 2 and 3 were not supported.

Behavioral Measure of Forgiveness

To test the first three hypotheses I ran a factorial ANOVA model. The 31 participants in the control condition had mean forgiveness score of 32.01 (*SD* = 57.77); the 33 participants in the apology condition had mean forgiveness score of 29.12 (*SD* = 47.45); the 33 participants in the perspective-taking intervention condition had mean forgiveness score of 24.67 (*SD* = 34.10) and the 28 participants in the interaction condition had mean forgiveness score of 29.07 (*SD* = 50.67). The factorial ANOVA model yielded non-significant main effects for both apology ($F(1,124) = .01$, n.s.; $R^2 = .00$) and perspective taking intervention ($F(1,124) = .18$, n.s.; $R^2 = .00$). The interaction effect ($R^2 = .00$) was also non-significant, $F(1, 124) = .18$, n.s..

In summary hypothesis 1, 2 and 3 were not supported. Although these results are non-significant they are interesting as they indicate a difference in the antecedents of self-

reported forgiveness and a behavioral measure of forgiveness. Apology predicted self-reported forgiveness but did not predict behavioral forgiveness which was primarily a measure of revenge. These results will be discussed in more detail in the discussion section.

Dispositional Predictors of Forgiveness

Hypothesis 4a: Trait empathetic concern will be positively correlated to forgiveness.

Hypothesis 4b: Trait perspective taking will be positively correlated to forgiveness.

Hypothesis 7a: There will be negative relationship between trait rumination (Negative Content) and forgiveness.

Hypothesis 7b: There will be negative relationship between trait rumination (Suppression) and forgiveness.

Hypothesis 10: There will be a negative relationship between negative affectivity and forgiveness.

Hypothesis 11: Trait negative affectivity will have a significant relationship with forgiveness even after controlling for state negative affectivity.

Self-Reported Forgiveness

The zero-order correlation between the dispositional predictors and forgiveness is presented in Table 9. To test the relationship between the individual difference variables (empathy, rumination and negative affectivity) and forgiveness, I ran separate regression models. The percentage of variance explained (R square) along with the unstandardized coefficients (B) and significance levels are reported in Table 13. Linear regression results indicate that the individual differences variables like trait empathy (empathetic concern

and perspective taking subscales), trait rumination (negative content and suppression subscales), and trait negative are non-significant predictors of forgiveness.

Table 13

Unstandardized Regression Weights and R Square for Dispositional Predictors of Forgiveness (self-report and behavioral measure)

Dispositional Correlates	Self-Report Forgiveness		Behavioral Measure of Forgiveness	
	R^2	B	R^2	B
Trait Negative Affectivity	.02	-.14	.00	-1.52
Empathy Subscales				
Empathetic Concern	.01	.09	.05	-17.87*
Perspective Taking	.03	.14	.03	-12.28*
Rumination Subscales				
Negative Content	.01	-.01	.00	-1.27
Suppression	.00	-.04	.00	-1.08

Note: * denotes significance ($p <= .05$)

Behavioral Measure of Forgiveness

Trait rumination and Negative affectivity were found to be non-significant predictors of behavioral forgiveness. However the two subscales of trait empathy (empathetic concern and perspective taking subscales) were found to be significant predictors of forgiveness (behavioral measure).

In summary hypothesis 7a, 7b and 10 were not supported for either measures of forgiveness. Hypothesis 4a and 4b were not supported when self-reported forgiveness was the dependent variable but were supported when the behavioral measure of forgiveness was the dependent variable. Those who were high on trait empathetic concern and trait perspective taking were less likely to take overt revenge (behavioral

forgiveness); while trait empathetic concern and trait perspective taking did not predict self-reported forgiveness. Once again these finding indicate interesting differences in the prediction of self-reported forgiveness versus behavioral forgiveness.

To test hypothesis 11, I developed a stepwise regression model, wherein I entered state-2 negative affectivity in the first step and then added trait negative affectivity in the second step. Results indicated that state-2 negative affectivity (after the offence) accounted for 8% (R^2 = .08; p <= .05) of the variance in forgiveness (self report) scores and 3% (R^2 = .03 *n.s.*) of the variance in forgiveness (behavioral measure) scores. After controlling for state-2 negative affectivity, trait negative affectivity did not account for any additional variance in forgiveness scores and was not a significant predictor of forgiveness (self-report B = -.04 and behavioral B = -6.72 respectively). The results indicate that state-2 negative affectivity was a significant predictor of both self reported and behavioral forgiveness (B = -.42 and B = 21.99 respectively). Hypothesis 11a and 11b were not supported in the present study however, the results indicate that the negative emotions experienced by the victim immediately following the offence are predictive of forgiveness (self-reported and behavioral).

Moderating Hypotheses for Self-Report and Behavioral Measure of Forgiveness

Hypothesis 5a: The relationship between apology and forgiveness will be moderated by trait empathetic concern.

Hypothesis 5b: The relationship between apology and forgiveness will be moderated by trait perspective taking.

Hypothesis 6a: The relationship between perspective-taking and forgiveness will be moderated by trait empathetic concern.

Hypothesis 6b: The relationship between perspective-taking and forgiveness will be moderated by trait perspective taking.

Hypothesis 8a: The relationship between apology and forgiveness will be moderated by trait negative content.

Hypothesis 8b: The relationship between apology and forgiveness will be moderated by trait suppression.

Hypothesis 9a: The relationship between perspective-taking and forgiveness will be moderated by trait negative content.

Hypothesis 9b: The relationship between perspective-taking and forgiveness will be moderated by trait suppression.

Hypothesis 12: The relationship between apology and forgiveness will be moderated by negative affectivity.

Hypothesis 13: The relationship between perspective taking and forgiveness will be moderated by negative affectivity.

To test the above mentioned moderating hypotheses I ran separate ANCOVA models for each hypothesis. The F value, along with the R square change and the significance level for each interaction term is reported in Table 15. The main effects are not reported in this table as they have already been reported earlier. Out of the ten interactions hypothesized, only two were significant. None of the moderating hypotheses were significant when the dependent variable was the behavioral measure of forgiveness. Hypothesis 5b was supported for self-reported forgiveness. The interaction between trait perspective taking and apology was significant, $F(1,124) = 10.76, p < .01$, indicating that the effect of apology on forgiveness was greater for those individuals who were low on

trait perspective taking. The significant interaction effect is graphically represented in Figure 4. Hypothesis 6a was also supported for self-reported forgiveness. The interaction between trait empathetic concern and perspective-taking intervention was significant, $F(1,124) = 3.85, p < .05$, indicating that the effect of the perspective-taking intervention on forgiveness was greater for those individuals who were high on trait empathetic concern. The significant interaction effect is graphically represented in Figure 5. Although the interaction proposed in hypothesis 6a was significant, the results indicated a direction opposite to my proposed rationale. The rationale behind the hypothesized interaction was that the influence of perspective-taking intervention would be greater for those who were low on trait empathetic concern however the results indicated that perspective-taking intervention had a stronger influence for those who were high on trait empathetic concern. The results will be discussed in more detail in the discussion section.

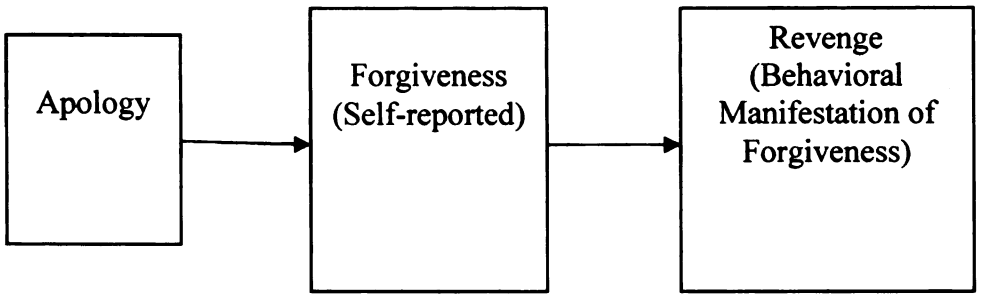
Additional Exploratory Analyses

Mediational Analyses

In the present study apology was found to be significantly correlated with self-reported forgiveness but was not predictive of revenge behaviors. As an exploratory analysis I tested if self reported forgiveness mediated the relationship between apology and the retaliatory behaviors (behavioral manifestation of forgiveness). The theory of planned behavior (Ajzen and Fishbein, 1980) provides a theoretical framework for why self-reported forgiveness could act as a mediator between apology and retaliatory behaviors. The theory of planned behavior (TPB) proposes that the best predictors of actual behaviors are the proximal behavior specific cognitive antecedents. In the present study although I did not measure other TPB related constructs like perceived behavior

control and subjective norms, I did measure the subject's emotional state and cognitive intentions to take revenge (through the self-report forgiveness measure). The exploratory mediational analyses tests whether apology influences the subject's emotions and cognitive intentions to take revenge and, whether those emotions and cognitions in turn predict retaliatory behaviors (refer to figure 3 for the mediational model).

Figure 3: *Mediational Model*



Meditational analysis helps us to indentify and explicate the process (explanatory mediating variable) underlying the relationship between an independent variable and a dependent variable. Over the years statisticians and psychologists have been using regression analysis to test for mediation following the steps outlined by Baron and Kenny (1986).More recently the Baron and Kenny (1986) method has been criticized for low power, Type I error, not being able to address suppression effects, and not addressing the central question of whether the indirect effect is significantly different from zero and in

Table 14

ANCOVA Results for the Moderating Hypotheses

		Forgiveness (Self-Report)		Forgiveness (Behavioral)	
	Interaction Terms	F	ΔR^2	F	ΔR^2
H5a	Apology X Empathetic Concern	1.95	.02	.17	.00
H5b	Apology X Perspective Taking	10.76**	.08	.04	.00
H6a	Perspective Taking X Empathetic Concern	3.85*	.03	1.70	.01
H6b	Perspective Taking X Perspective Taking	.33	.00	.02	.00

Trait Rumination Moderating the Effects of Apology and Perspective Taking Intervention

	Interaction Terms	F	ΔR^2	F	ΔR^2
H8a	Apology X Negative Content	.00	.00	.45	.00
H8b	Apology X Suppression	1.06	.01	.27	.00
H9a	Perspective Taking X Negative Content	.88	.01	.35	.00
H9b	Perspective Taking X Suppression	1.23	.01	.14	.00

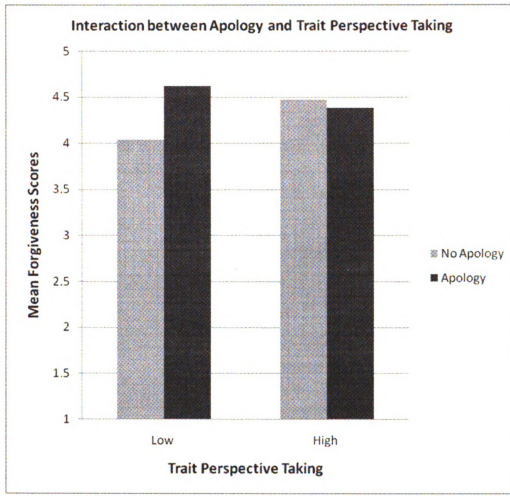
Trait Negative Affectivity Moderating the Effects of Apology and Perspective Taking

	Interaction Terms	F	ΔR^2	F	ΔR^2
H12	Apology X Negative Affectivity	.00	.00	2.44	.02
H13	Perspective Taking X Negative Affectivity	1.02	.01	1.01	.01

Note: * Denotes p<= .05; ** denotes p<= .01. Degree of freedom for the above analyses was *df (1, 124).*

Figure 4

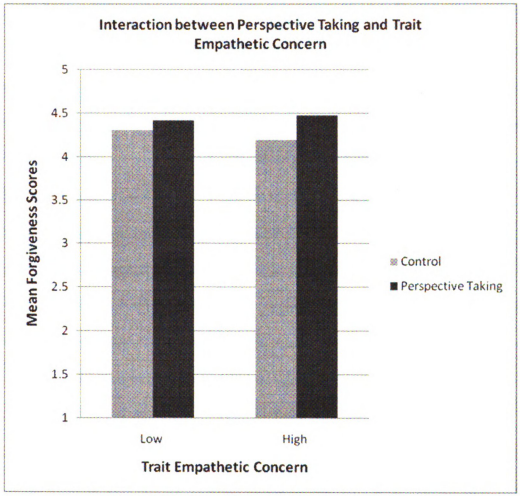
Interaction between Trait Perspective Taking and Apology in Predicting Forgiveness (self-report)



Note: In this graph the high and low trait perspective taking groups are constructed using a median split

Figure 5

Interaction between Trait Empathetic Concern and Perspective Taking Intervention in Predicting Forgiveness (self-report)



Note: In this graph the high and low trait perspective taking groups are constructed using a median split

the expected direction (see MacKinnnon, Lockwood, Hoffman, & West, 2002, Preacher & Hayes, 2004, Shrout & Bolger, 2002 for more detailed information). Bootstrapping has been suggested as the best method of testing meditation and the significance of indirect effects. Bootstrapping overcomes the limitations of statistical methods that make assumptions about the shape of sampling distributions, such as normality. It involves repeated randomly sampling of observations with replacement from the data set and computing of the statistic of interest in each resample. Over many bootstrap resamples, an empirical approximation of the sampling distribution of the statistic can be generated and used for hypothesis testing. In the present study I used a macro created by Preacher and Hayes that calculates bootstrapping directly within SPSS.

Apology---→ Self Reported Forgiveness ---→ Revenge

The zero-order correlations between the initial, mediator and outcome variables are presented in Table 9. The results from this study indicate that there is no significant zero order correlation between apology (initial variable) and revenge (outcome variable). Traditionally the mediational approach required that there be a significant relation between the initial and outcome variables before one can test for mediation (Baron & Kenny, 1986). However, recently in a discussion on mediational analyses, Kenny et al have argued that a significant relation between the initial and outcome variables is not required to test mediation. According to them the relation between the initial and outcome variables is implied if relations between the initial and mediating variables as well as between the mediating and outcome variables are significant.

The bootstrapping results indicated that apology significantly predicted self reported forgiveness scores, ($B = .24$, $R^2 = .04$, $t(123) = 2.20$, $p < .05$). The standard error

for the effect was .11. Self reported forgiveness also significantly predicted revenge (B = -.22.42, R^2 = .08, t(122) = -3.35, $p < .01$). The standard error for the effect was 6.68. The bootstrap results (on 1000 resamples) indicated a significant indirect affect of apology on revenge through the mediational variable of self-reported forgiveness (B = -5.45, R^2 = .08, $p < .05$). The standard error for the indirect effect was 4.08.

Quality of Apology. In the present study apology had a significant and direct effect on forgiveness (self report). I also tested if quality of apology moderated this relationship by running an ANCOVA model. The interaction between apology and quality of apology was non-significant ($F(1, 63) = .01$, *n.s*). I also tested if quality of apology moderated the relationship between apology and behavioral forgiveness. The interaction was once again non-significant ($F(1, 63) = .00$, *n.s*). Thus one can conclude that the effects of apology on forgiveness (self-reported) is significant irrespective of the perceived quality of the apology communication.

Attribution. In the present study I also measured the kind of attributions subjects made towards the confederate who had defected on the prisoner's dilemma game. I tested the extent to which forgiveness (self-reported) predicted the attributions people made about the confederate. Regression results indicated that forgiveness (self-reported) was a significant predictor of the kind of positive attributions people made (B = .72; R^2 = .52, $p < .01$)). This result suggests that those who are low on forgiveness tend to make negative attributions towards the transgressor and vice versa.

Positive attribution towards the confederate was measured before the subject's were presented with the hot sauce task (behavioral measure of forgiveness). To test if positive attributions influenced the behavioral manifestation of forgiveness, I tested the

extent to which positive attributions negatively predicted the amount of hot sauce given to the confederates. Regression result indicated that positive attribution was a significant and positive predictor of behavioral forgiveness (lack of revenge or smaller amount of hot sauce allocated), ($B = -16.49$; $R^2 = .05$, $p < .01$). This indicates that those people who are low on positive attributions (i.e. they make negative attributions) towards the transgressor are more likely to take overt revenge.

Spice Tolerance. To ensure that the amount of hot sauce allocated by the subjects was a function of the subject's level of forgiveness and not a function of their level of spice tolerance, I tested the relationships between forgiveness and amount of hot sauce allocated by controlling for spice tolerance. I ran a stepwise regression wherein I put tolerance for spicy food in the first step and forgiveness (self-reported) in the second step. Forgiveness (self-reported) was found to be a significant predictor of the amount of hot sauce allocated (behavioral forgiveness) even after controlling for the subject's tolerance for spicy food, ($B = -21.80$; $\Delta R^2 = .08$, $p < .01$).

DISCUSSION

Hypothesized Relationships

The focus of the present study was to understand and examine characteristics of the victim and process variables that may facilitate forgiveness as a response to a negative interpersonal event. I had hypothesized that stable attributes like trait empathy, trait rumination and trait negative affectivity would be significantly related to forgiveness. I had also hypothesized that apology and perspective-taking intervention would be positively related to forgiveness. Finally I had hypothesized interactions between individual difference variables and process variables such that the effectiveness of the apology and perspective taking intervention on forgiveness would be moderated by the characteristics of the victim.

Summary of Findings

The results indicated that apology was a significant predictor of self-reported forgiveness. Exploratory mediational analyses indicated a significant indirect effect of apology on behavioral forgiveness through the mediational variable of self-reported forgiveness. Perspective-taking intervention bordered significance ($p = .06$), as a predictor of self-reported forgiveness. None of the individual difference variables were significantly correlated with self-reported forgiveness; trait empathetic concern and trait perspective taking were positively and significantly correlated with behavioral forgiveness. The interaction between trait perspective taking and apology was significant, indicating that the effect of apology on forgiveness was greater for those individuals who were low on trait perspective taking. Finally the interaction between trait empathetic concern and perspective-taking intervention was also significant, indicating that the effect

of the perspective-taking intervention was greater for those individuals who were high on trait empathetic concern.

The discussion that follows reviews the findings from this study in greater detail and presents both theoretical and practical implications of the findings. A number of directions for future research are also suggested.

Role of Apology

Apology was found to be a significant predictor of self-reported forgiveness. This finding reinforces the notion that in short-term interactions an apology (post offence) is effective in facilitating forgiveness as opposed to no apology (Bottom, Gibson, Daniels & Murnigham, 2002). Although other studies have looked at the effects of apology on forgiveness, there have not been empirical studies that have done so in a context where the victim experienced an offence in real time. Many of the past studies have used retrospective reports or have given vignettes to subjects who are then asked to reports their thoughts, feelings and probable behaviors. The present study is unique as I created an actual expectation for co-operation which was violated (real offence) by the transgressor. In the context of a real offence, apology was found to predict forgiveness.

In the present study I designed a simple apology communication that gave the victim more information about the transgressor. The message conveyed responsibility and ownership of the offensive act, regret on the part of the transgressor and acknowledgement of the transgressor's own selfishness. Such an apology communication has the potential to influence the subsequent reactions from the victim by providing the victim with information about the wrongdoer's sense of guilt and intention (Mehlman and Synder, 1985).

Social psychologists have studied and found a variety of social rituals in groups and cultures that are aimed at rebuilding damaged relationships (Boehm, 1984; Koch et al, 1977). Most of these rituals involve some degree of vulnerability on the part of the transgressor, wherein the transgressor usually acknowledges the harmful act and expresses remorse following a wrongful act. Impression management research has also shown that such acts of acknowledgment and apology mitigates punishment (Schwartz et al, 1978). The results from this study support the past results from social psychology experiments, impression management and interactional justice research that assert that explanations increase positive reactions towards the target and are effective in reestablishing co-operative relationships.

In this study I did not manipulate the levels of apology. The apology communication was simple and did not even include an offer of restitution, an overt request for forgiveness, a promise, or an explanation. I merely looked at the influence of a simple three sentence apology communication, and found a significant effect on forgiveness. It is important to note that something as simple as a plain apology can have such a significant influence on the likelihood of the victim to forgive the transgressor. Robinson (1996) asserts that the usefulness or effectiveness of social accounts/ explanations depends on whether they are perceived by others as trustworthy and sincere or deceitful and insincere. In this study I found that perceived apology quality (sincerity, authenticity, honesty) did not moderate the relationship between apology and forgiveness. However quality of apology had a direct effect on self-reported forgiveness, such that those who rated the apology quality as high were more likely to forgive. One explanation for why the perceived quality of apology did not moderate the relationship between

apology and forgiveness could be the nature of the offence. In the experimental context of the present study the subject and confederate had no prior interactional history and the offense severity was relatively low. In such a scenario it is possible that the subjects were not expecting a very high quality apology and therefore the apology quality did not moderate the relationship between apology and forgiveness. It could be that in situations where the offender and victim have a long history and the offense severity is high, the quality of apology will play a significant role as a moderator.

Future research should look at the types of explanation and the influence of relationship variables like past history, severity of the offence on the effectiveness of different types of explanations. Research should also look into how admission of intent (like saying "that was selfish of me") influences victims with varying levels of past history. Research on trust repair and rebuilding cooperation has found that denying intent (external explanations) actually reduces negative reactions in long term relationships while taking responsibility for the harmful act is more advantageous in short-term relationships (Shapiro et. al, 1994; Bies et al, 1988). Finally, research might explore how culture (regional culture/organizational culture and local workplace norms) influences the role of apology on forgiveness.

Studies in the interactional justice literature have looked at the psychological impact of different types of explanations on the emotional and attitudinal reactions of the target victim. However fewer studies have explicitly tried to look at the influence of explanations on the subsequent behavior of the victim. In the present study apology was not significantly correlated with the behavioral measure of forgiveness (the lack of revenge behaviors). The fact that apology was a significant predictor of self reported

forgiveness (consisting of both the emotional and cognitive components of forgiveness) but was not a significant predictor of actual forgiveness behaviors is interesting. In order to further explore these relationships, I conducted a mediational analysis wherein I tested if self-reported forgiveness mediated the relationship between apology and behavioral forgiveness. The significant indirect effect indicated that apology was a significant predictor of forgiveness (self reported levels of negative emotions and cognitions); which in turn was a significant and negative predictor of actual revenge behaviors. The mediational analysis indicates that it is through the reduction of negative emotions and cognitions that the transgressor's apology influences victim's revenge behaviors.

This is the first study in my knowledge in the area of forgiveness research that has looked at such a mediation process. This mediational effect has the potential to contribute to further theory building regarding the process by which apology influences behaviors. Takaku (2001) in a study has used the attribution model of emotion and motivation to explain the process by which apology leads to self-reported forgiveness. He explains how apology leads to benevolent attributions towards the transgressor which in turn increases the likelihood of forgiveness. The results from this study can be used to further explain how apology leads to forgiveness (self-reported levels of negative emotions and cognitions) which in turn leads to actual behavior. Future research should attempt to look at frameworks and theories from the attitude research to explain how forgiving affect and cognitions prevent victims from engaging in revenge behaviors. Research could also explore the role of cognitive dissonance in predicting revenge behaviors after a victim receives an apology communication from the transgressor. Forgiveness researchers should continue to utilize both self-reported and direct behavioral measures of

forgiveness to explicate the differential relationships between antecedents and perceptual and behavioral measures of forgiveness.

Role of Perspective-Taking

Perspective taking was not found to be a significant (α=.05) predictor of self-reported forgiveness. However it was very close to achieving significance (p = .06). The sample size in the present study was appropriate to detect moderate effect sizes. The present study was not designed to detect significant small effects. Based on the mean differences on self-reported forgiveness, those who received the perspective taking intervention had higher means on the forgiveness measure compared to those who had not received the intervention. If I had specified a small effect size in the power analysis and collected data on a larger sample, it could be that the main effect of perspective taking would be significant (small effect).

Perspective-taking has been found to positively influence the quality of interpersonal exchanges (Franzoi, Davis, & Young, 1985; Hastings & Grusec, 1997). Studies have shown that putting oneself in another person's shoes, in other words being able to take the perspective of the other is associated with a variety of prosocial behaviors, such as altruism, cooperation, and forgiveness (through the inhibition of destructive/aggressive reactions) (Arriaga & Rusbult, 1998; Batson, Early, & Salvarani, 1997; Davis, 1994).

In the present study I used a perspective-taking intervention that included a combination of primes. The subjects (prior to the offence) were given a scenario and were asked to imagine how the offender would feel, think and behave. They were also asked to imagine and report how they would feel, think and behave if they were in the

offender's position. Finally the subjects were asked to imagine a time when they were the offender and were asked to imagine how they felt, thought and behaved. It was expected that such an intervention would prime the subjects to be in a perspective-taking mindset and that it would also train the subjects on the benefits of perspective taking. This was in turn expected to influence the likelihood of forgiveness (self-reported) and behavioral (revenge behaviors). Although the results from the present study indicate that perspective-taking is a non-significant predictor of forgiveness (both self-reported and behavioral measure of forgiveness) the direction of mean differences indicates potential. Future research should attempt to test this relationship using larger sample sizes.

A perspective taking intervention similar to this study was used in a study by Takaku (2001), where the subjects received the same exact scenario and training except that all the subjects also received an apology communication from the offender in the hypothetical scenario. Takaku (2001) found a significant relationship between perspective-taking (recall-self as transgressor) and forgiveness. He also found that benevolent attributions and positive emotional reactions mediated the relationship. The Takaku (2001) study did not test the main effects of apology and perspective-taking, thus making it difficult to parse out the effects of apology from the effects of perspective taking. However Takaku's study used cognitive dissonance theory and the correspondent inference theory to explain how perspective taking can increase the likelihood of forgiveness. Future research needs to further explore this area and needs to explicate the psychological mechanisms by which perspective taking is expected to influence forgiveness.

Effectiveness of Apology and Perspective-Taking: Moderating Role of Dispositional Variables

Apology and Trait Perspective-Taking

I found a significant interaction in the expected direction between apology and trait perspective-taking in predicting self-reported forgiveness. The interaction indicated that apology had a greater influence on forgiveness for those individuals who were low on trait perspective taking. Trait perspective taking is often defined as an individual's stable tendency to adopt the other's point of view in reacting to a given situation, attempting to see the situation from the other's perspective, feeling and thinking as the other would feel and think (cf. Batson, 1987; Davis, 1983). Those individuals who are low on trait perspective taking find it difficult to conceive of the other's point of view. Such individuals are more likely to become egocentric in their thoughts. Especially after a negative interpersonal event such individuals are likely to feel more defensive and may experience angry emotions and attendant tendencies to retaliate rather than accommodate (Arriaga & Rusbult, 1998). The results indicate that an apology communication from the transgressor compensates for the low empathy of the victim and positively influences the likelihood of forgiveness.

McCullough et al (1997) asserts that forgiveness is influenced by empathy and that apology can elicit empathy from the victim. In a study by McCullough and his associates they found that those who received an apology from the transgressor were more likely to report empathetic feeling towards the transgressor and were also more likely to forgive. Thus empathy can be viewed and examined as mediating the relationship between apology and forgiveness. People who received the apology may

have been more likely to empathize which is indicated in the significant interaction between apology and trait empathy. These findings further suggest that researchers should look at empathy both as a mediating social-cognitive variable as well as an individual difference variable. Future research should attempt to measure the victim's level of empathy after receiving an apology and should also assess how apology influences cognitive appraisal of a given situation.

Perspective-Taking Intervention & Trait Empathetic Concern

Empathy has been conceptualized as a cognitive-affective experience that varies with situations. The assumption is that empathy in any given situation depends on both one's level of trait empathy as well as one's cognitive appraisal of the situation. It is this very cognitive appraisal of the situation that the perspective-taking intervention was designed to manipulate. In the present study I found a significant interaction between trait empathetic concern and perspective-taking intervention indicating that the perspective-taking intervention was more effective in influencing self-reported forgiveness for those individuals who were high on trait empathetic concern. Individuals who were high on trait empathetic concern have an increased tendency to feel compassion and concern for others. Such individuals are able to empathize with the transgressor and take into account not just their own emotions but also that of the other. The results indicate that the perspective-taking intervention primed the subjects in such a way that it augmented the effects of trait empathetic concern in predicting forgiveness. Unlike the interaction between apology and trait perspective taking where apology compensated for the lack of empathy in the victim, perspective-taking intervention was found to augment forgiveness amongst those who were already high on empathetic concern. These findings have

important practical implications. If people/organizations are interested in increasing the likelihood of forgiveness amongst people with low perspective-taking they can use apology as an intervention while they can use perspective-taking intervention to increase the likelihood of forgiveness for those already high on empathetic concern.

No other study has looked at such interactions between individual difference variables and process variables in the prediction of forgiveness. Theoretically the results from this study contribute to the literature by identifying and establishing the conditions under which apology and perspective-taking intervention are more likely to influence forgiveness. There can be several practical implications for the finding that trait empathy (trait empathetic concern & trait perspective taking) moderates the relationship between perspective taking intervention and apology and forgiveness. In the world of practice, if people/organizations decide to use an apology or a perspective taking intervention as a process intervention in the aftermath of interpersonal conflict they would know that such an interventions would be primarily effective in increasing the likelihood of forgiveness for those employees who are low on trait perspective-taking and high on trait empathetic concern respectively.

Dispositional Variables as Predictors of Forgiveness

In the last decade, there have been many studies on forgiveness in social psychology that have examined variables that influence forgiveness of particular transgressions or transgressors (McCullough, Worthington, & Rachal, 1997; McCullough et al., 1998; Zechmeister & Romero, 2002). In the present study I explored the influence of trait empathy, trait rumination and trait negative affectivity as predictors of both self-reported and behavioral forgiveness.

Role of Trait Empathy

Trait empathy is defined as a stable tendency to view events from the perspective of others and to have a warm personal concern for them (Davis, 1983). People who are high on trait empathy are more likely to put themselves in the other person's position and tend to demonstrate compassion for others by imagining how it must feel like to be in their position. Forgiveness scholars assert that empathy enables the victim to look at the offender separate from the offence and to conceive of the different factors that may have influenced the offender's behavior (Coleman, 1998; Enright & Coyle, 1998). It has also been theorized that empathy competes with the emotion and cognition of unforgiveness and induces compassion which in turn reduces the negative valence of hurts and grudges leading to a more positive emotion for the victim (Konstam, Holmes & Levine, 2003; McCullough et al., 1997).

The results from the present study indicate that trait empathetic concern and trait perspective-taking are not significant predictors of self reported forgiveness. The few other studies that have looked at the relationship between forgiveness and trait empathy have found mixed results. Macaskill et al., (2002) found empathy to be related to forgiving others but not to forgiving the self. Tangney, Fee, Reinsmith, Boone, and Lee (1999) found her forgiveness scale to be related to Davis's (1983) perspective-taking and empathic-concern subscales of the Interpersonal Reactivity Inventory. Brose, Rye, and Lutz (2002) failed to find a significant correlation between their measure of forgiveness and their measure of empathy.

Most of the earlier studies that have found a positive relationship between trait empathy and forgiveness have used retrospective and hypothetical scenarios to measure

forgiveness. They have also measured trait empathy and forgiveness using self-report methods at the same time point. It is possible that some of the positive correlations between trait empathy and forgiveness measures could have been due to common method bias and also due to the cross sectional nature of the measurement. The present study is different from the earlier studies in the fact that trait empathy was measured at a different time point and forgiveness was measured after the victim experienced an actual offence. Although the findings from this study are counterintuitive, future research should further test this relationship to confirm if in fact trait empathy predicts forgiveness of others. It is likely that empathy as a trait is more of a distal predictor of forgiveness and that empathy as an emotional-cognitive experience post an offence is more of a proximal predictor of forgiveness. It is also possible that trait empathy is not highly correlated with empathetic experience after an offence as there may be other contextual factors that determine the emotions and cognitions of the victim.

The interesting finding in the present study was the differential relationship of trait empathetic concern and trait perspective taking with self-reported forgiveness versus behavioral forgiveness. Although trait empathetic concern and trait perspective taking did not predict self-reported forgiveness they significantly predicted actual revenge behaviors. I also correlated the trait empathy items with the revenge items on the self-reported forgiveness scale and found no significant correlations. This indicates that trait empathy is not predictive of self-reported cognitions for revenge but is significantly related with actual revenge behaviors. This result supports some of the earlier findings where empathy has been related to the inhibition of aggression towards the offender (Batson, 1991; Batson & Oleson, 1991). In the present study those who were high on trait

empathetic concern and trait perspective-taking were less likely to take revenge (allocated less hot sauce for the confederate to consume). It is possible that trait empathy predisposed the victims to imagine what the offender would have to go through if he/she had to consume a lot of hot sauce. The results indicate that trait empathy did not significantly reduce the offender's negative emotions and cognitions to avoid the transgressor but still prevented the victims from engaging in direct revenge behaviors. Future research needs to further examine how trait empathy dimensions are related to actual revenge behavior and what mediates this relationship.

Role of Trait Rumination and Trait Negative Affectivity

Rumination has also been looked at as a cognitive determinant of forgiveness. According to Nolen-Hoeksema (1994) an individual high on rumination tends to have greater access to unhappy memories, enhanced sensitivity to negative information about one's current situation, and has an increased probability of making negative interpretations. Research on the psychological correlates of interpersonal forgiveness has found that people tend to be more forgiving to the extent that they avoid ruminating about the offence. McCullough et al., (2001) found that college student rumination about interpersonal offence is linked to vengefulness (opposite of forgiveness). Emmons (1992) also found that beliefs about vengeance were positively correlated with three measures of rumination. In the present study trait rumination (frequency of negative thoughts and attempts to suppress negative thoughts) was unrelated to forgiveness (self-reported and behavioral). One possible explanation for why trait rumination did not significantly predict forgiveness could be due to the timing of the measurement of forgiveness in this study. The time period between the occurrence of the offence and the measurement of

forgiveness was maximum half-an-hour. It may be that this short time span did not give the individual a chance to ruminate and may be their disposition to ruminate did not translate into psychological distress and aggression as there wasn't enough time. Past studies that have found significant negative correlations between trait rumination and forgiveness have usually used retrospective reports as a way to measure the constructs. In retrospective report studies subjects are asked to recall a past event where they had had a negative experience (someone had hurt them). In such scenarios the subjects who are high on trait rumination have usually had a long time to ruminate about the event. Retrospective reports also make the negative event salient and available in the victim's memory. Just the fact that the subjects are asked to recall a past negative event may prime the subjects high on rumination to indicate low levels of forgiveness. In such a scenario it is more likely that self-reported trait rumination about a specific offence will be negatively related to self-reported forgiveness for that specific negative event. Future research needs to further explicate how trait rumination is related to forgiveness and stipulate the time period that needs to pass between an offence and forgiveness before rumination could have an effect.

Trait Negative Affectivity has been defined by Watson and Clark (1984) as a predisposition for an individual to chronically experience negative emotions like anger, hostility, fear and anxiety. People who are high on negative affectivity tend to be distressed and have a negative sense of self (Watson & Clark, 1984). In the present study trait negative affectivity was not significantly correlated with forgiveness (self-reported and behavioral). On the other hand state negative affectivity after the offence was a significant predictor of both self-reported forgiveness and revenge behaviors.

One possible explanation for the lack of significant correlation between trait negative affectivity and forgiveness could be due to the low variance on the negative affectivity scale. The mean level of reported trait negative affectivity was below the neutral point on a 5 point agreement (Likert) scale. The standard deviation for trait negative affectivity was also moderate indicating that there was low to moderate variance on the variable. Also negative affectivity is a broad umbrella construct that comprises of a variety of negative emotions like anger, scorn, revulsion, guilt, sense of rejection, self-dissatisfaction and to some extent sadness (Watson & Clark, 1984). It is possible that an average across these emotions may not be predictive of forgiveness as the average consist of a variety of emotions some of which may be positively associated with forgiveness (like guilt) while other may be negatively associated with forgiveness (like anger and scorn). Future research needs to look into the specific negative emotions that are related to forgiveness rather than merely using a broad umbrella construct like negative affectivity.

Conceptualization of Forgiveness: Self-report versus Behavioral

There has been much debate regarding how forgiveness should be conceptualized (e.g., Enright & Coyle, 1998; McCullough, Pargament, & Thoresen, 2000b). Most scholars agree on what is not forgiveness and differentiate it from other related concepts like pardoning, condoning, excusing and forgetting. Some researchers like Thompson and Shaken (2002) define forgiveness as the process whereby an individual perceives himself or herself to have been the target of an injurious offense and *deliberately attempts* to (a) overcome negative emotions (e.g., resentment, anger, hostility) toward his or her offender and (b) refrain from causing the offender harm even when he or she believes it is

justifiable to do so. In such a definition of forgiveness, the actual act of refraining from causing harm (lack of revenge behaviors) is included in the definition of the construct. Other definitions of forgiveness like that given by Worthington (1998) defines forgiveness as a *motivation* to reduce avoidance of and withdrawal from a person who has hurt us, as well as the anger, desire for revenge, and urge to retaliate against that person. In Worthington's definition the conceptualization of forgiveness does not make any assumptions about actual revenge behaviors. In the present study I operationalized forgiveness as both comprising of a reduction in negative emotions and negative cognitions of avoidance and revenge (self-reported) and actual lack of revenge behaviors (measured using the hot sauce task). Some people may argue that revenge behavior is an outcome/consequence of forgiveness and not forgiveness itself. This is a difficult debate to win as indicators of construct are often things that are believed to be affected by the unobservable psychological construct. So conceptually an indicator of a psychological construct is always a consequence of that unobservable construct. The only way to solve this debate is for forgiveness researchers to present upfront an explicit and clear definition of what is forgiveness and to match their operationalization to the given definition. A lot of times the mixed results in the literature are not due to differential relationships between antecedents and dependent variables but rather due to the differences in the way the same dependent variable is operationalized and measured.

In spite of all the references to the behavioral indicators of forgiveness there have been very few empirical studies that have used a behavioral measure of forgiveness. This study contributes to the forgiveness literature as the operationalization of the forgiveness construct covers the full breadth of the construct. This study also reduces common

method bias by including different methods (self-report versus behavioral) of measuring the same construct. In this study the self-reported forgiveness score was positively correlated with the behavioral measure of forgiveness, thus indicating convergent validity of the two measures of forgiveness. In such a case where the two measures of a dependent variable are positively correlated but the antecedents show differential relationships with the measures is indicative of interesting things. Future research needs to follow this trend of including multiple measures of forgiveness and needs to examine how antecedents and distal consequences relate to different measures of forgiveness. Such endeavors will help to further refine the meaning of the construct and will increase our ability to predict not just the emotional and cognitive aspects of forgiveness but also the behavioral aspects.

Practical Implications

Some of the practical implications of the findings from this research study have already been mentioned in the previous sections. This section basically summarizes the practical applications of the findings.

Managing Interpersonal Events at the Workplace

The ability to develop, maintain, and repair cooperative interpersonal interaction amongst workers/employees is becoming a critical management competency (Lewicki & bunker, 1996). Although organizations lay down explicit exchange contracts that delineate the specific employment terms, most relationships between employees or between supervisor and subordinates are based on implicit psychological contracts. The very nature of these relationships makes them susceptible to violation of cooperative expectations which in turn can have negative consequences for both the individual and

the organization. Studies have shown that when psychological contracts are violated, the resulting anger and disappointment can result in break-down of relationships and even acts of revenge (Bradfield & Aquino, 1999, McCornack & Levine, 1990). Emotions like anger and resentment coupled with cognitions of revenge and desire to avoid the transgressor act as obstacles in the path towards rebuilding relationships.

Based on the findings from this study, managers/supervisors/employees can manage negative interpersonal experiences at the workplace in several ways:

* Managers can identify employees who are low on trait empathy (trait perspective taking) as individuals who may be more vulnerable to seek revenge in the aftermath of negative interpersonal events. It is not always desirable or possible to screen individuals on all possible individual difference variables, but if the managers can identify individuals at risk they can apply the appropriate intervention to prevent damaging behaviors.

*Apology can be used by employees in the aftermath of a negative event to reduce the negative emotions held by the victim. Managers can also mentor and train subordinates in the art of apology giving. Employees in general can be told about the importance of rebuilding relationships and how a simple and sincere apology that clearly admits personal responsibility for the violation and expresses remorse can go a long way in improving interpersonal relationships.

*Organizations can implement perspective-taking training for their employees. Such an intervention has the potential to increase the likelihood of forgiveness as a response (especially by those employees who are high on empathetic concern).

Limitations

The present study investigates individual difference and processual antecedents of forgiveness. Forgiveness as a response in the aftermath of negative interpersonal events can be extremely beneficial for both individuals and organizations in the long run. Thus, it is essential that managers develop a better understanding of how such influences occur. Although I believe that the present study offers some valuable insights into forgiveness issues, I also recognize that the findings should be further validated and extended in a variety of ways. In the following paragraphs I have noted some limitations of this study.

Issue of External Validity: One limitation of the present study is that it examined forgiveness in a laboratory rather than a field setting. The reason I selected a laboratory–experimental method was because the past studies on forgiveness have primarily been correlational and based on retrospective reports. Conducting an experimental study allowed for internally valid tests of hypotheses and variables which would be almost impossible to manipulate in a real field setting. The experimental setup allowed control over the offence and manipulation of several variables like apology and perspective-taking intervention. Such a research design allowed for comparisons between groups who had received varying levels of the manipulated variable. It also provided a strong basis for examining causality while also avoiding common method bias and confounding effects. I expect that the practical implications of these findings will generalize to short-term relationships at work. Future research is needed to examine the influence of apology and perspective-taking on relationships which have longer interactional history. Although I ensured that the experimental setting was as similar to real world workplace scenarios, further research would be required to assess the external validity of the findings.

Sample: The sample for this study was chosen to detect moderate effect sizes. Since most interaction effects are small effects, future researchers could collect data on a larger sample designed to detect small effect sizes. In the present study the sample comprised of relatively young college going students (primarily females). Although this population is not typical of the working class, young people are becoming a large part of the working population. Given the volatile economy and decreasing job loyalty amongst young workers, it is becoming important for organizations to manage young employees and to mitigate the negative effects of damaging interpersonal interactions. Future research should seek to examine the effects of similar variables on samples with varying demographics like age, gender and level of experience. Moreover, it would be worthwhile to examine the effects of apology and perspective-taking intervention on real managers under real world workplace context. Studies could also look at dyads and examine the influence of the gender of the offender and victim on the likelihood of forgiveness.

Conclusion

Organizational life is a potent environment for interpersonal transgressions. It is very likely that people who are required to work interdependently will face situations where their expectations are violated. Everyday occurrences of minor negative interpersonal things like experiencing back-stabbing by a co-worker, a boss who plays favorites or even something small like being humiliated at a team meeting can lead to escalation of conflict. Employees who choose to react to such events/experiences by retaliating and increased hostility may not only be lowering organizational productivity but may also be increasing their chances of coronary heart disease and premature death

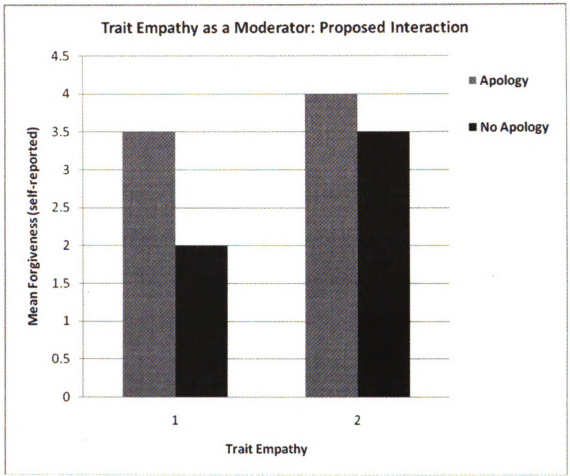
(Witvliet, Ludwig, & Vander Laan, 2002). Forgiveness is an adaptive response to negative events at the workplace and has been associated with collective outcomes such as higher morale and satisfaction, and greater social capital, trust, humanness, and caring relationships in organizations (McCullough et al., 2000 ; Cameron, *2002).*

The results from this study provide some insights into what facilitates interpersonal forgiveness. An employee who is high on empathetic concern and perspective-taking is less likely to engage in retaliatory behavior post offence. A simple apology expressing remorse and acknowledging responsibility for the harmful act can go a long way in facilitating forgiveness on the part of the victim especially for those individuals who are low on empathy (trait perspective taking). Organizations can work towards building a climate for forgiveness by implementing training programs that teach employees perspective taking skills.

The present study is just the first step towards understanding the emotional, cognitive and behavioral nature of forgiveness and the factors that facilitate it.

APPENDICES

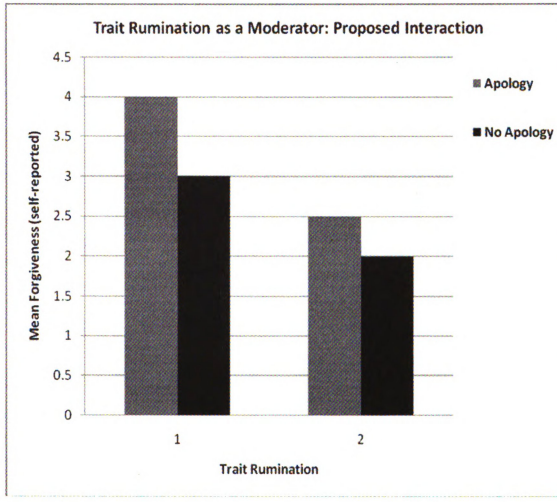
Proposed Interaction between Apology and Trait Empathy



Note: I propose a similar interaction effect for perspective taking intervention and trait empathy

Appendix 2

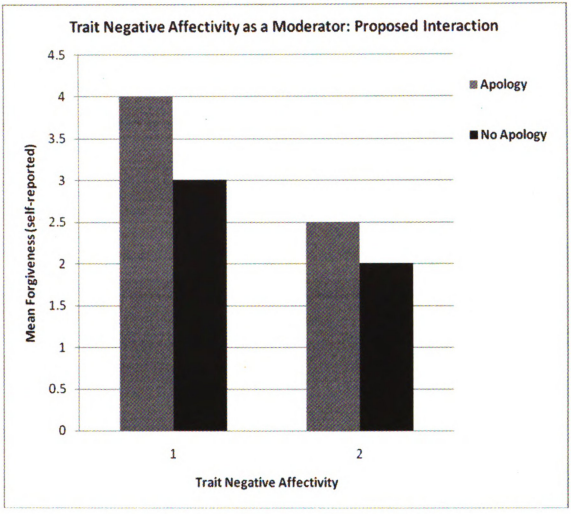
Proposed Interaction between Apology and Trait Rumination



Note: I propose a similar interaction effect for perspective taking intervention and trait empathy

Appendix 3

Proposed Interaction between Apology and Trait Negative Affectivity



Note: I propose a similar interaction effect for perspective taking intervention and trait negative affectivity

Appendix 4

Apology Communication

Communication to the subjects during the break:

APOLOGY STATEMENT (Computer message): "I'm sorry. I really screwed up. I was being selfish. I shouldn't have done that"

CONTROL GROUP STATEMENT (Computer message): "Your partner did not utilize the communication option".

Appendix 5

Control Group Intervention

Introduction

You will now engage in a small training module. Please make sure that all of you have received a booklet from the experimenter. The instructions are self-explanatory but if you have any doubts/questions please feel free to ask the experimenter.

The following scenario describes a situation in which you and one of your classmates are trying to prepare for a final exam which is around the corner. While you read the following scenario, please try to think of how students in your class prepare for exams and how it affects their overall college performance. Try to concern yourself with attending to the possible studying habits and techniques that students use.

Scenario

You and your classmates have final exams starting two weeks from now. Both of you have very different studying habits. Your classmate does not take class notes and prefers to read from the textbooks, while you like to study from both the text and organized class notes from every class you have attended. You have also prepared a detailed studying schedule where you have assigned certain number of days for every topic that you have to cover for the exam. Your classmate on the other hand has decided to start studying without creating a specific studying schedule. He/she plans to finish all the tougher topics first and will attend to the easier topics later if he/she has the time.

The above scenario describes a situation in which you and another class mate of yours are preparing for an exam that is around the corner. Please read the scenario once again and this time think of some effective studying habits that can help college students prepare better for exams.

Now please take a moment and list the most effective studying habits for college students. Please list the studying techniques/habits in terms of importance for effective performance. Briefly describe what study strategies/techniques you would use if your exams were around the corner.

Training Material

The typical college campus is a place to learn. The education you receive there, and the attitudes you develop, will guide you for the rest of your life. To be a successful student requires certain skills especially studying skills. It is advisable to develop objective and clear goals for yourself. Next step should be to assign time to complete the tasks in hand based on importance. Having a schedule may not help if you do not keep track of your progress towards your goal. Research has shown that time management and self-discipline in everyday life is the key to success in college. We all have to realize that

we are human and we get tempted to waste time. It is recommended that you set goals and be proactive in managing your time before it becomes too late.

The last thing I would like to mention to you is that, in order to make this knowledge more real, and thus deepen its effects in your life, I would suggest that during the coming week, you notice your studying habits. Try to practice some of the things you learned today and see how it affects your performance. Thank you for your willingness to share. Do you have any questions or comments about this material?

Appendix 6

Filler Task during the break time

Below is a small task please complete it to the best of your knowledge.

Instructions: The following groups of words describe certain patterns of weather. Each set of ten words describes the same pattern of weather. Look at each group of 10 words as a set and imagine a day where the weather would fit the pattern described by those words. Describe what the weather report would say on that day. In addition, give the set of words a name that you feel describes the words as a set.

Set 1: pleasant, lovely, beautiful, fantastic, nice, magnificent, perfect, pretty, soothing, refreshing

Please give specific values for the following:

- Temperature (in degrees Fahrenheit): _____
- Wind (in mph): _____
- Precipitation (percent chance): _____
- Humidity (in percent): _____
- Cloudiness:

I----------I----------I----------I----------I

Clear Few Clouds Partly Cloudy Mostly Cloudy Overcast

What name would you give this set of words?_____

Set 2: wintry, icy, snowy, frosty, cold, chilly, slushy, nippy, frigid, slippery

Please give specific values for the following:

- Temperature (in degrees Fahrenheit): _____
- Wind (in mph): _____
- Precipitation (percent chance): _____
- Humidity (in percent): _____
- Cloudiness:

I----------I----------I----------I----------I

Clear Few Clouds Partly Cloudy Mostly Cloudy Overcast

What name would you give this set of words?_____

Set 3: sweltering, blazing, sweaty, steamy, scorching, roasting, sizzling, boiling, oven like, broiling

Please give specific values for the following:

- Temperature (in degrees Fahrenheit): _____
- Wind (in mph): _____
- Precipitation (percent chance): _____
- Humidity (in percent): _____
- Cloudiness:

I----------I----------I----------I----------I

Clear Few Clouds Partly Cloudy Mostly Cloudy Overcast

What name would you give this set of words?_____

Set 4: violent, vicious, destructive, dangerous, angry, furious, unrelenting, raging, harsh, brutal

Please give specific values for the following:

- Temperature (in degrees Fahrenheit): _____
- Wind (in mph): _____
- Precipitation (percent chance): _____
- Humidity (in percent): _____
- Cloudiness:

I----------I----------I----------I----------I

Clear Few Clouds Partly Cloudy Mostly Cloudy Overcast

What name would you give this set of words?_____

Set 5: rainy, misty, showery, soggy, raining, wet, damp, sprinkling, drizzly, thundery

Please give specific values for the following:

- Temperature (in degrees Fahrenheit): _____
- Wind (in mph): _____
- Precipitation (percent chance): _____
- Humidity (in percent): _____
- Cloudiness:

I----------I----------I----------I----------I

Clear Few Clouds Partly Cloudy Mostly Cloudy Overcast

What name would you give this set of words?_____

Open Ended Responses

- Please indicate the town/state where you have spent the most time:

- Please indicate the town/state you had in mind while you were answering the questions above (if you used different towns, please list them and tell which set you used them for):

If you did not have any particular town/state in mind while answering the questions, please indicate the thought process (what were you thinking while answering) that led to your answers.

Appendix 7

Perspective Taking Manipulation

Description of the Perspective-Taking Intervention

The subjects in the perspective taking group will get the training module in the lab before they engage in the task. The perspective-taking intervention will be designed as a small training module where in the subjects will be asked to read a text that describes an offence and then imagine 3 things, (a) how the offender would feel, think and behave and (b) How they would feel, think and behave if they were the offender and (c) They will be asked to imagine a time when they had been an offender and describe the event. They will also be asked to imagine how they felt, thought and behaved in the situation they describe. The perspective taking intervention is designed to induce empathy and to help subjects realize the importance of taking different perspectives.

Training Stimuli

Introduction: You will now engage in a small training module. Please make sure that all of you have received a booklet from the experimenter. The instructions are self-explanatory but if you have any doubts/questions please feel free to ask the experimenter.

Imagine Other Instructions: The following scenario describes a situation in which something happened to you that you wish had not happened. While you read the following scenario, please try to imagine how your classmate would think, feel, and behave when he/she was confronted by you. Try to concern yourself with attending to all the information presented; concentrate on visualizing how your classmate would think, feel, and behave when he/she was confronted by you.

Scenario

You and your classmate were preparing for an important final exam. A day before the final, your classmate asked you if he/she could borrow your notes from the previous week to make copies. You agreed to the request and told him/her to bring them back as soon as possible. An hour later, he/she had not returned from making copies. You waited for another hour. You were getting very anxious and frustrated because you could not study without those notes. Because you could no longer wait for your classmate, you decided to leave a note on the door of the study room, asking for the notes back as soon as possible. Three hours later, your classmate returned to your apartment and brought back the notes. The notes were slightly smudged in places and some pages were torn.

Imagine-Self Instructions: The above scenario describes a situation in which something happened to you that you wish had not happened. Please read the scenario once again and this time, try to imagine how you would think, feel, and behave if you were the classmate who asked for a favor. Try to concern yourself with attending to all the information

presented; concentrate on visualizing how you would think, feel, and behave if you stood in your classmate's shoes.

Recall–Self Instructions: Now please take a moment and visualize an event in which you broke a promise to, violated an expectation or forgot to do something for another person in the past. Please try to remember how you thought, felt, and behaved in that situation. Briefly describe below the event you just considered and how you though, felt and behaved in that situation.

Training Presentation

What we just asked you to do is often called "Perspective-Taking". People who are able to take the perspective of others (putting oneself into another person's shoe) have been shown to have higher interpersonal problem solving success. On the contrary people who are unable to empathize with others and lack perspective taking skills have demonstrated difficulty and problems in maintaining healthy relationships with others.

Being able to take the perspective of others influences the way we think, feel and behave. When individuals try and imagine what the other must be feeling and thinking they are able to relate to the other person and are better at maintaining positive interpersonal relationships. Perspective taking has also been shown to reduce aggressive and destructive reactions and behaviors.

When we experience negative events it is particularly difficult to deliberately try and take the perspective of others. Perspective-taking and re-analyzing someone else's actions take time and effort, simply because it goes against our natural tendencies. At the same time managing anger and maintaining healthy relationships also takes effort. Taking the perspective of others can help us to reduce negative emotions and can lead us to have more positive and better relationships. The last thing I would like to mention to you is that, in order to make this knowledge more real, and thus deepen its effects in your life, I would suggest that during the coming week, you notice how quickly you tend to make up your mind about others. Practice the process of perspective taking (imagining what the other person must be feeling or thinking, also imagining times when you have been in a similar position as them and what you felt and thought). See what happens to your emotions, thinking and behavior, when you consciously try to take the perspective of the person who has offended you and think of different causes for what may have caused the negative event to happen.

Thank you for your willingness to share. Do you have any questions or comments about this material?

Appendix 8

Empathy Measure

Instructions: The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate number on the scale at the top of the page: 1, 2, 3, 4, or 5. Once you have decided on your answer, fill in the number next to the item number. Please read each item carefully before responding. Answer as honestly as you can. Thank you.

Rating Scale:

1 ----------2----------3----------4----------5

Does not describe me well — Describes me well

Trait Perspective Taking Subscale: It includes the following items:

1. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
2. I believe that there are two sides to every question and try to look at them both.
3. Before criticizing somebody, I try to imagine how I would feel if I were in their place.
4. I try to look at everybody's side of a disagreement before I make a decision.
5. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (-)
6. I sometimes try to understand my friends better by imagining how things look from their perspective.

Trait Empathetic Concern Subscale: It includes the following items:

1. Other people's misfortunes do not usually disturb me a great deal. (-)
2. I often have tender, concerned feelings for people less fortunate than me.
3. I would describe myself as a pretty soft-hearted person.
4. When I see someone being taken advantage of, I feel kind of protective towards them.
5. Sometimes I don't feel very sorry for other people when they are having problems. (-)

SCORING - NOTE: (-) denotes item to be scored in reverse fashion

Appendix 9

Rumination Measure

Instructions: Below is a list of statements made by people about stressful and negative events. Using the following scale, please indicate your agreement with each of these statements. Try and think about whether these statements have been true for you in the past after you experienced a negative event.

Rating Scale:

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

Negative Content: It includes the following items:

1. I try not to think about negative experiences (-)
2. I have waves of strong feelings about negative experiences
3. I have trouble falling asleep or staying asleep because of pictures or thoughts about negative experiences that keeps coming into my mind
4. Any reminder brings back feelings about negative experiences
5. I think about negative experiences even when I don't mean to
6. I have dreams about negative experiences
7. I am usually aware that I still have a lot of feelings about negative experiences, but I don't deal with them.

Suppression: It includes the following items:

1. I feel as if negative experiences haven't happened or aren't real (-)
2. I stay away from reminders of negative experiences (-)
3. I try not to talk about negative experiences (-)
4. I try to remove negative experiences from memory (-)

SCORING

NOTE: (-) denotes item to be scored in reverse fashion

Appendix 10

Positive and Negative Affectivity (Trait Measure)

Instructions: This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you generally feel this way, that is, how you feel on the average. Use the following scale to record your answers.

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

- interested
- distressed
- excited
- upset
- strong
- guilty
- scared
- hostile
- enthusiastic
- proud
- irritable
- alert
- ashamed
- inspired
- nervous
- determined
- attentive
- jittery
- active
- afraid

Appendix 11

Positive and Negative Affectivity (State Measure)

Instructions: This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1---------- 2---------- 3---------- 4---------- 5

very slightly or not at all | a little | moderately | quite a bit | extremely

- interested
- distressed
- excited
- upset
- strong
- guilty
- scared
- hostile
- enthusiastic
- proud
- irritable
- alert
- ashamed
- inspired
- nervous
- determined
- attentive
- jittery
- active
- afraid

Appendix 12

Tutorial on Cooperation

You will soon be presented with some information about an interaction you will have with another person. Some of that information will consist of a set of payoffs to you and to them. Not surprisingly, the choices you make and the choices that they make will influence what each of your outcomes will be. Your outcomes will be:

	UP	DOWN
RIGHT	you get 24 points; they get 24 points	you get 6 points; they get 30 points
LEFT	you get 30 points; they get 6 points	you get 12 points; they get 12 points

Your best outcome here is 30 points; your worst outcome here is 6 points. The payoffs are symmetric, so your partner's best outcome is also 30 points and their worst outcome is also 6 points. You and your partner will make several choices, one after the other. After each choice, you will know what your outcomes are for that round (i.e., which of the four outcomes). This way you will know, in advance, what both of you have chosen before you make your next choice.

Now imagine that you chose UP and they chose RIGHT you would each get 24 points. You could both interpret your choices as signals that you are both willing to resist the temptation of your highest outcomes so that you can achieve the next best outcome (which is still quite good, in comparison to the other possibilities). This would be a very cooperative signal that also suggests that additional rounds of the same choices, and their 24 points payoffs, make sense for both of you. (This exemplifies thinking about this interaction from your perspective and theirs.)

Why are these initial choices such important signals? Well, consider what would happen if you chose UP and they chose LEFT, with you getting 6 points and them getting 30 points. Your partner might very well be delighted with this outcome, but what would you do on the next round? Most people in your shoes shift to DOWN for their next choice. If they chose LEFT again (highly likely in this situation) you would both get 12 points - decidedly worse that the 24 points you could both have by playing UP and RIGHT. You would also have a hard time shifting to the 24 points each outcome choice, which is better for both of you (and increasingly better as your choices continue and you participate in this interaction repeatedly).

The same thing might happen if your roles were reversed, i.e., if you chose DOWN and they chose RIGHT. You might be delighted with the outcome of receiving 30 points, but what do you think your partner would do on the next round? Most probably he/she will choose LEFT for their next choice. If they chose LEFT again (highly likely in this situation) and you choose DOWN you would both get 12 points - decidedly worse

than the 24 points you could both have by playing UP and RIGHT. Thus, although choosing UP is risky (you could get 6 points), it makes sense in the long run - and in your upcoming interaction, there will be repeated choices by both you and the other person, making the long run really important, increasing the value of each cooperative 24 point outcome, over and over again. Note that if, on the first round, the two of you chose DOWN and LEFT, yielding 12 points for each of you, this would be a negative signal, suggesting that each of you were not willing to take the risk to be cooperative or that each of you was hoping to get 30 points at the other person's expense. Starting out with DOWN and LEFT choices makes it harder to get to the mutually beneficial, cooperative outcomes of repeatedly getting 24 points each. All this is by way of saying that, yes, cooperation is risky, but that, once it is achieved, and it is very much worth repeating.

Appendix 13

Questions before every round of the game

Q1. What do you think your partner will chose? RIGHT or LEFT? _____

Q2. How much confidence do you have that your partner will make this choice? On a scale of 1 to 10, where 1 is zero confidence and 10 is 100% confidence.

Appendix 14

Forgiveness Self-report Measure

Rating Scale:

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

1 I feel angry towards this person

2 I forgive the person for not cooperating during the game

3 Even though his/her actions hurt me, I do *not* feel ill-will towards him/her

4 I have forgiven this person

5 I have been able to let go of my anger about what happened in the game

6 I feel that I am ready to put what he/she did behind me

7 I can't think about what he/she did to me in the game without feeling strong emotions like hurt and anger.

8 If I can get away with it I would do something to upset this person

9 I want to make him/her pay for not co-operating in this game

Appendix 15

Open Ended Questions (Qualitative Data)

Q1. Please describe why you chose to make the move you made in the last trial of the game?

- If you chose UP please tell us what motivated you to make that choice?
- If you chose DOWN please tell us what motivated you to make that choice?

Q2. What were your thoughts about your partner during the break?

Q3. What are your thoughts about your partner now?

Q4. What were your feelings like towards your partner during the break?

Q5. What are your feelings like towards your partner now?

Q6. Would you like to work with your partner in a future group task? Why?

Appendix 16

Quality of Apology

- Did your game partner make a non-cooperative move (defection) on the game?

* Yes or * No

If Yes, then answer (A)

(A) Did you receive an apology from your game partner? Yes or No

If Yes, then answer (B)

(B) Please rate the apology on the following dimensions:

a. Sincerity:

1----------2----------3----------4----------5

Not Sincere at all — Extremely Sincere

b. Honesty:

1----------2----------3----------4----------5

Not Honest at all — Extremely Honest

c. Degree of Remorse:

1----------2----------3----------4----------5

Not Remorseful — Full of Remorse

d. Degree of expressed need for reconciliation:

1----------2----------3----------4----------5

Definitely does not want to reconcile — Definitely wants to reconcile

e. Authenticity

1----------2----------3----------4----------5

Not Authentic at all — Extremely Authentic

Demographics

Please answer the following questions:

1. How old are you? ____
2. Gender?
    a. Male
    b. Female
3. Race?
    a. White, Caucasian
    b. Black, African-American
    c. Hispanic, Non-white
    d. Asian
    e. Other

4. Are you married?
    a. Single and never married
    b. Single: married and divorced
    c. Married

5. GPA: _____

6. Major: _____

Appendix 18

Attribution Scale

The items in the Attribution Scale were as follows:

1. I dislike this person. (-)
2. He/she is not a good human being. (-)
3. I think the person is selfish by nature. (-)
4. I do not think he/she is a bad person. (-)

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