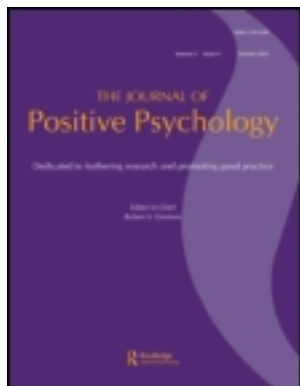


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### Do actions speak louder than words? Differential effects of apology and restitution on behavioral and self-report measures of forgiveness

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## Do actions speak louder than words? Differential effects of apology and restitution on behavioral and self-report measures of forgiveness

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We built upon previous laboratory studies by examining the independent and interactive effects of restitution and apology on behavioral and self-reported measures relevant to forgiveness. Undergraduates ( $N = 155$ ) received two of 10 tickets in a distribution. Some thought another participant was the distributor; others thought it was random. Later, some participants received restitution as nine tickets from the artificial participant, whereas others received nine tickets by chance. Some also received an apology. Participants then distributed 10 tickets to the artificial participant, the behavioral measure of forgiveness. Participants also self-reported forgiveness by rating the motivations underlying their distribution, including the motive, 'to express forgiveness'. Results indicated restitution increased behavioral expressions of forgiveness, but apology increased self-reported forgiveness. The restitution effect was partially mediated by empathy and the desire to help the transgressor. This study underscores the importance of both restitution and apology and of using multiple measures of forgiveness.

**Keywords:** forgiveness; restitution; apology; empathy; self-report; behavioral

Human beings are social animals, but because of human finitude, fallibility, and competing goals, social interactions can be fraught with conflict. Given the importance of social interaction and cooperation to human survival and flourishing, it comes as no surprise that individuals often engage in acts of apology and restitution in the hopes of facilitating forgiveness and relationship repair (Gold & Davis, 2005). Predicting the effectiveness of apologies and restitution, however, may prove to be more complicated than a common-sense approach might suggest.

### Effects of apology and restitution on forgiveness

Forgiveness has been described as the process by which negative motivations (i.e. avoidance and revenge) that arise from being a victim of a transgression are transformed into more positive motivations (i.e. benevolence – see McCullough, 2001; McCullough & Witvliet, 2002). Forgiveness has significant relationships with several indices of individual well-being and positive emotion, and with reductions in negative emotion and physiological stress indicators (e.g. Friedman & Toussaint, 2006; Hill & Allemand, 2011;

Witvliet, DeYoung, Hofelich, & DeYoung, 2011; Witvliet, Knoll, Hinman, & DeYoung, 2010; Witvliet, Ludwig, & Vander Laan, 2001; Worthington, Witvliet, Pietrini, & Miller, 2007). It has also been correlated with positive social outcomes. For example, increases in forgiveness are associated with relationship satisfaction in married couples (Fincham & Beach, 2002, 2007; Fincham, Hall, & Beach, 2006; Miller & Worthington, 2010), nonmarried romantic couples (Palcari, Regalia, & Fincham, 2010), and families (Maio, Thomas, Fincham, & Carnelley, 2008). Additionally, forgiveness is associated with increased prosocial behavior within intimate (Fincham, 2000; Fincham & Beach, 2002) as well as non-intimate relationships (Karremans & Van Lange, 2004).

Given the potential for forgiveness to promote positive psychological and relational outcomes, it is important to understand the factors that promote forgiveness. Two of the potential factors are behaviors that can be performed by the perpetrator of a transgression: apology and restitution. Apology can be thought of as a communication that includes an offer of compensation, an expression of empathy and/or an acknowledgement of violated norms (Fehr &

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Gelfand, 2010). Restitution is often grouped with apology and related constructs under the general rubric of ‘making amends’ (e.g. Hannon, Rusbult, Finkel, & Kamashiro, 2010). We define restitution as compensation for something that was lost or destroyed, thus decreasing perceived injustice. In contrast to apologies, which involve verbal communication, restitution involves some sort of restorative action that might include more concessions than tit-for-tat, pay-back, or incommensurate concessions, so that the restoration seems subjectively fair to the person who was hurt or offended.

Recent work on forgiveness uses the lens of evolutionary theory to account for the roles of apology and restitution in facilitating forgiveness. McCullough, Kurzban, and Tabak (2011) suggested that forgiveness is more likely to happen when a relationship is valued, because such relationships help individuals survive to pass their genes on to future generations (McCullough, Luna, Berry, Tabak, & Bono, 2010). Within this framework, apology and restitution might function as barometers for relationship value. When a transgressor apologizes and provides restitution, this could indicate that the transgressor respects and values the victim, and does not plan for the transgression to reoccur. This would communicate to the victim that he or she is a valued relationship partner, and that the relationship is adaptive and worth continuing.

In contrast, Luchies, Finkel, McNulty, and Kumashiro (2010) showed that when the offender does not make amends, forgiveness can erode a victim’s self-concept, devaluing the victim. Apology and restitution, then, are theorized to be important facilitators of forgiveness. Empirical research thus far has supported the importance of these variables (see Fehr & Gelfand, 2010; Fehr, Gelfand, & Nag, 2010).

### *Apology*

From childhood, individuals understand that an offender’s apology can signal remorse (Darby & Schlenker, 1982) and can make victims feel better (Smith, Chen, & Harris, 2010). Apology has often been empirically associated with forgiveness (Fehr & Gelfand, 2010), both correlationally in real-world transgressions (e.g. Bachman & Guerro, 2006; Davis & Gold, 2010; McCullough, Worthington, & Rachal, 1997), and experimentally in the lab (e.g. Darby & Schlenker, 1982; Eaton, Struthers, & Santelli, 2006; Weiner, Graham, Peter, & Zmuidinas, 1991).

### *Mechanisms*

Several mechanisms by which apologies increase forgiveness have been identified. Gold and Davis (2005) argue that apologies increase forgiveness by increasing empathy in victims towards transgressors

(Davis & Gold, 2010), particularly if victims and transgressors are close relationship partners. Indeed, McCullough and his colleagues (McCullough et al., 1998; McCullough et al., 1997) have found empathy to be an important factor in facilitating forgiveness and increasing the conciliatory effects of apology, with stronger effects in close relationships. Empathy leads to motivation to benefit the person for whom the empathy is felt (cf. Batson, 1991, 2011), which may attenuate or eliminate negative motivations caused by being victimized. Exline, Worthington, Hill, and McCullough, (2003) suggested that apologies are costly and restore or make up for some injustice felt by the victim, reducing a hypothetical injustice gap.

Gold and Davis (2005) describe apology as an impression management strategy that, unlike excusing and denying, communicates that the transgressor fully accepts his or her responsibility for an offense. In addition to invoking empathy for the apologizer, apologies signal that the apologizer has suffered after the offense, decreasing the perceived likelihood of future offenses (Davis & Gold, 2010). Without an apology, forgiveness could potentially thrust an individual deeper into an already dysfunctional relationship (Luchies et al., 2010). Forgiving after the receipt of an apology might, however, be an adaptive way to maintain a valuable partnership.

### *Qualifiers*

The effectiveness of apologies in inducing forgiveness has been found to be qualified by the nature of the transgression. Struthers Eaton, Santelli, Uchiyama, and Shirvani (2008) found the perceived intentionality of transgressors’ offenses influenced how effective their apologies were in inducing self-reported forgiveness, and how willing participants were to subsequently benefit the transgressor. This is consistent with McCullough et al.’s (2011) valued relationship hypothesis because intentionality suggests that the offender might not value the relationship highly. In addition, Ohbuchi, Kameda, and Agarie (1989) found that apologies appear to be more effective for mild rather than for severe transgressions, which is consistent with Exline et al.’s (2003) reduced but not eliminated injustice gap. Finally, characteristics of the victim, such as self-esteem (Eaton, Struthers, Shomrony, & Santelli, 2007), can also affect whether apologies lead to forgiveness.

If an apology is not sufficient to induce forgiveness – in the wake, for example, of severe or obviously intentional offenses – restorative actions may increase the likelihood of forgiveness. Restitution is one such action that can aid in repairing relationships after an offense. Restitution may increase the cost of making amends and may therefore be more helpful than

apology in restoring equity to a relationship. The failure to offer restitution when it is possible to do so may even cast doubt on an apologizer's sincerity (Bottom, Gibson, Daniels, & Murnighan, 2002). As the saying goes, 'Actions speak louder than words'.

### **Restitution**

We distinguish restitution from two other distinct concepts examined in the literature. Offense removal (Ohbuchi et al., 1989; Zechmeister, Garcia, Romero, & Vas, 2004) implies that all negative effects of the transgression have been erased, whereas self-punishment (Bottom et al., 2002) involves the transgressor engaging in behaviors that harm the self in order to make up for the offense. Restitution reduces the perceived injustice of a transgression through restorative action, but does not remove the transgression entirely, and is not limited to instances of self-punishment by the transgressor.

#### *Restitution increases the effectiveness of apology*

Restitution and apology together have been found to be related to increased forgiveness. For example, Hannon et al. (2010) found that forgiveness for romantic betrayals was correlated with receipt of amends, including apologies and restitution. Perpetrators' reports of having been forgiven also correlated with their reports of having made amends, controlling for social desirability and severity of the offense (Hannon et al., 2010).

Prior studies have investigated forgiveness in controlled laboratory settings. Bottom et al. (2002) looked at the effectiveness of self-punishment above and beyond apology in promoting forgiveness of a defecting partner in a prisoner's dilemma. The defecting partner in these games (actually pre-programmed computerized messages) apologized during the course of the game, asking for the participants' future cooperation. For participants in the self-punishment/restitution condition, the 'partner' offered to cooperate while the participant defected for a specified number of rounds; the participant would thereby recover lost points, whereas the partner would be punished by forfeiting points. Participants were more likely to forgive and cooperate with partners who offered self-punishment and an apology than they were with a partner who offered an apology alone. Consistent with Gold and Davis' (2005) discussion of the function of apology, the offers of self-punishment/restitution seemed to reassure participants of the benevolent intentions of their partner (Luchies et al., 2010).

Restitution-related actions may alter the effectiveness of apologies by influencing victims' interpretations of transgressions. Test takers in an experiment by Zechmeister and colleagues (2004), for example, were

given negative feedback about their performance on a test that was 'mistakenly' administered to them and contained questions designed to be impossible to answer. The offense – the experimenters' mistaken administration of the test – was compounded by participants not only receiving a low test score, but also receiving negative comments about their low score by a senior researcher. Offense removal and apology were both varied. Offense removal came in the form of the experimenter's admission to the senior researcher that the difficult test was mistakenly administered, and negative feedback removed. In addition, some participants received an apology from the experimenter who caused them the unnecessary negative feedback experience. In contrast to previous findings, receiving an apology led the participants to rate their experimenter *less* favorably. In the absence of accompanying offense removal, apologies led to decreased reported forgiveness and decreased willingness to help the experimenter in the future. Offense removal, on the other hand, led to greater self-reported forgiveness, and an increased willingness to help the experimenter. Apologies without action to make amends may have been perceived as empty (Ohbuchi et al., 1989).

#### *Apology increases the effectiveness of restitution*

In others situations, apologies may increase the effectiveness of restitution. Ohbuchi and colleagues (1989) argue that transgressions violate social expectations in addition to harming the victim; returning a victim to his or her previous status may not be enough to evoke forgiveness, because it fails to address the violated social expectations. Therefore, even if restitution compensates the victim for harm, apology may be needed in order to compensate for the expectancy violation. To test this, Ohbuchi et al. manipulated offense removal as well as apology. They found that participants rated a transgressor more positively when she apologized for her mistakes. Offense removal alone did not increase positivity towards the experimenter, but interacted with apology so that the co-occurrence of both led to decreased negative perceptions of the experimenter.

#### **Empathy as a mediator**

One way through which restitution and apology might affect forgiveness is through empathy. McCullough et al. (1997) suggest that empathy can facilitate forgiveness in three ways. First, it could encourage the victim to care that the offender is experiencing guilt. Second, the victim could care that the offender feels lonely and estranged in the relationship. Third, it could lead the victim to want to repair the relationship with the transgressor. In these ways, empathy may move the victim's focus away from the hurtful actions

of the transgressor, toward concerns about the well-being of the transgressor and the maintenance of a relationship with him or her.

Many studies have supported this idea that empathy makes forgiveness more likely (McCullough & Witvliet, 2002). For instance, McCullough et al. (1997, 1998) had introductory psychology students recall a past transgression. They found that the relationship between apology and forgiveness was in some samples partially (McCullough et al., 1997) and in others completely mediated (McCullough et al., 1998) by feelings of empathy toward the transgressor. Further, by cultivating empathy (Witvliet et al., 2001) and compassion for a real-life transgressor (Witvliet et al., 2010, 2011), victims increased their forgiveness and positive emotion, while decreasing their negative emotion and physiological stress responses.

As restitution and apology both function to make amends after a transgression, it is possible that empathy might mediate the relationship between restitution and forgiveness as well. However, no current research addresses the relationship between restitution, empathy, and forgiveness.

### Present study

In summary, current research in restitution and apology suggests that the relationship between these variables and forgiveness might not be as straightforward as once thought. Restitution and similar behaviors (i.e. self-punishment and offense removal) tend to enhance the effectiveness of apology, and apology in the absence of restitution can be less effective than no apology at all. However, our understanding of the effects of apology and restitution on forgiveness is limited by the absence of independent manipulations of apology and restitution in many previous studies (Bottom et al., 2002; Hannon et al., 2010; Haselhuhn, Schweitzer, & Wood, 2010), and the operationalization of restitution as offense removal (Ohbuchi et al., 1989; Zechmeister et al., 2004) or self-punishment (Bottom et al., 2002). To address these limitations, we independently manipulated apology and restitution, and operationalized restitution as repaying the victim for harm. In addition, we extended previous research by examining the link between apology, restitution, empathy and forgiveness in a laboratory setting with an immediate, standardized transgression. As in previous experiments (Bottom et al., 2002; Ohbuchi et al., 1989; Zechmeister et al., 2004), we created a laboratory-induced transgression for increased standardization and psychological realism. However, in response to other laboratory studies that measured forgiveness only indirectly as changed affect (Bottom et al., 2002), evaluations of the transgressor (Ohbuchi et al., 1989) or cooperative behaviors toward the

transgressor (Bottom et al., 2002; Haselhuhn et al., 2010), we measured forgiveness both indirectly through prosocial behavior, and more directly through self-reports of forgiveness motivation.

Based on past research, our hypotheses were that: (a) restitution would increase self-reported and behavioral forgiveness; (b) apology would increase self-reported and behavioral forgiveness; (c) apology and restitution paired together would have greater effects on forgiveness than either alone; and (d) empathy would mediate the effects of restitution and apology on forgiveness.

## Method

### Participants and design

This study incorporated a 2 (restitution, no restitution)  $\times$  2 (apology, no apology) design plus a control group (no offense) in which participants experienced negative outcomes in the absence of any interpersonal transgression. The control condition was included to confirm that participants felt that the manipulation was an offense.

Participants were 155 (112 female) undergraduate psychology students at a southern private university who received partial course credit for their introductory psychology class. Nineteen participants (14 females and five males) were removed from analyses. Two females were removed because of experimenter error. Seventeen other participants (11%) were removed because they expressed suspicion of the manipulation. Of those removed, five were in the restitution/no apology condition, six were in the restitution/apology condition, three were in the no restitution/no apology condition, two were in the no restitution/apology condition, and three were in the no offense control condition. This left a total of 136 participants (98 female). Experimenters ran participants of the same gender in order to avoid cross-gender presentation concerns (Jones & Pittman, 1982). As we employed five female experimenters and only one male experimenter, there was a discrepancy in participant gender, and due to this discrepancy we were unable to examine gender differences with any confidence.

### Procedure

Participants were run singly in individual cubicles. They were told that they and another psychology student of the same gender would be participating in three resource distribution rounds. Ten raffle tickets good for a drawing for a US\$50 gift card would be distributed in each round. Participants were told that they and the other participant would be entered into separate raffles, so they were not directly competing. Resources could be distributed by the participant

himself or herself, by the other person, or by chance, and participants would be notified before each round who the distribution agent would be. They were also told that during some of the rounds they might have an opportunity to communicate with each other through a note. In actuality there was no 'other participant,' and all communication and distribution decisions were prewritten. Materials were arranged in folders beforehand so that the experimenter stayed masked to all conditions until the end of the experiment.

For Round 1, participants received two tickets and their partner received eight tickets. Participants were randomly assigned to the offense or no offense conditions. Those in the no offense control condition were told that the two tickets were distributed by chance. Those in the offense conditions were told that the two tickets were distributed by their partner. In this way, participants in the offense conditions were provided a standardized transgression from the other participant, whereas participants in the no offense control condition received an identical negative outcome, but without an interpersonal transgression. Following each round, participants completed a short feelings survey (explained in the Measures section), which contained items asking them about the emotions they were feeling toward their distribution partner.

In Round 2, participants in the offense condition were further assigned to restitution and apology conditions. In this round, all participants received nine tickets and their partner received one. The participants randomly assigned to the restitution condition were told the tickets came from their partner, whereas those in the no restitution condition were told the tickets were distributed by chance. Half of the participants were also randomly assigned to the apology condition, and received a handwritten note from their partner, saying, 'Sorry about that first round, I got carried away, and I feel really bad that I did that'. Thus, the apology owned responsibility for the behavior and expressed regret. Those in the no apology condition received no note (and hence no apology) from the other participant.

In Round 3 all participants were given the opportunity to distribute 10 raffle tickets between themselves and their partner. After they made their decision, they were given a questionnaire that contained manipulation checks and items that asked the reasons for their distribution, rated on a 7-item scale. The different motives they rated included *to express forgiveness* and several others discussed below.

After the questionnaire was finished, all participants were interviewed by the experimenter. They were asked about their suspicion, and the experiment was fully explained to them, including the reasons for deception. No participants expressed any distress or concern about being deceived. Participants were

subsequently entered into a raffle, and one winner was awarded US\$50.

## Measures

### Emotions

Following each round, participants completed a short survey in which they were asked to rate on a 9-point rating scale the emotions they felt toward the other participant (1 = *feel very little of this emotion toward the other*, to 9 = *feel an extreme amount toward the other*). These measures were included in order to examine how people felt about their partner's distribution. This also provided a tie to the literature linking forgiveness to the decrease of negative emotion, and the increase in positive and prosocial emotion (Witvliet et al., 2010, 2011). Participants were instructed on this measure to record a 1 on the scale if they did not have enough information to answer, to account for the experience of participants in control conditions who had little or no interaction with the fictionalized participant. The items on the emotion scale were taken from emotion scales used in previous research (Batson, 1991; Tsang, 2007). The scale contained three subscales: positive emotions (pleased, indebted, happy, and obligated, Round 1  $\alpha=0.64$  and Round 2  $\alpha=0.67$ ), negative emotions (resentful, mad, annoyed, hurt, and angry, Round 1  $\alpha=0.94$  and Round 2  $\alpha=0.92$ ), and empathic concern (softhearted, tender, warm, moved, empathic, compassionate, and sympathetic, Round 1  $\alpha=0.83$ , Round 2  $\alpha=0.93$ ).

### Behavioral measure of forgiveness

All participants were given the opportunity to distribute raffle tickets to the other participant during Round 3. This constituted our behavioral measure of forgiveness.

### Self-reported forgiveness

Following the allocation in the third and final round, participants completed a longer questionnaire that asked questions about the entire study. As part of this survey, they were asked to rate different possible motivations for their distribution of the tickets during Round 3. The different motivations included: getting money, being fair, helping the other participant, expressing forgiveness, establishing justice, payback for an earlier distribution, acting morally, and teaching a lesson. All were rated on a 7-point scale from 1 = *not at all* to 7 = *totally*. The item 'expressing forgiveness' constituted our self-report measure of forgiveness.

Table 1. Means and standard deviations for manipulation checks.

	Round 1 negative emotions					Round 1 positive emotions					Round 1 empathic emotions				
	Mean	SD	<i>t</i>	<i>p</i>	<i>d</i>	Mean	SD	<i>t</i>	<i>p</i>	<i>d</i>	Mean	SD	<i>t</i>	<i>p</i>	<i>d</i>
Offense condition	3.25	2.03	2.22	0.029	0.53	2.32	1.15	1.98	0.05	0.48	1.96	0.98	1.26	0.21	0.31
No offense condition	2.21	1.80				1.81	0.94				1.67	0.87			
	Round 2 negative emotions					Round 2 positive emotions					Round 2 empathic emotions				
	Mean	SD	<i>t</i>	<i>p</i>	<i>d</i>	Mean	SD	<i>t</i>	<i>p</i>	<i>d</i>	Mean	SD	<i>t</i>	<i>p</i>	<i>D</i>
Restitution condition	1.35	0.72	1.33	0.19	0.26	6.29	1.59	9.43	<0.001	1.82	4.89	2.26	5.10	<0.001	0.98
No restitution condition	1.56	0.90				3.19	1.81				2.94	1.68			
Apology condition	1.34	0.69	1.31	0.19	0.26	4.93	2.45	1.11	0.267	0.21	4.26	2.32	1.70	0.09	0.32
No apology condition	1.55	0.92				4.44	2.17				3.55	2.05			

Note: All significance tests are 2-tailed.

## Results

### Manipulation checks

All participants correctly identified the person who was doing the distributing each round (self, other participant, or chance), and correctly indicated that the raffle was for a US\$50 gift certificate.

### Transgression

To test whether participants in the offense conditions thought that the unequal distribution of raffle tickets by their partner in Round 1 was indeed a transgression, we examined reported positive and negative emotions felt toward the partner immediately after Round 1 (see Table 1). Participants felt less negative and more positive emotion following Round 1 in the no offense condition compared to the offense conditions. We concluded that our laboratory transgression of unfair ticket distribution by a partner, though likely not as severe as many real-life transgressions, was perceived more negatively than simply receiving an unequal number of tickets by chance.

### Restitution manipulation

All participants correctly identified the amount of tickets that they received on Round 2 and whether their distribution was decided by the other participant, or due to chance. We examined the emotions participants felt toward their partner at the end of each round to check the psychological impact of the restitution manipulation. Participants in the restitution condition felt more positively toward the other participant after Round 2 (directly after the restitution/positive outcome occurred) compared to participants in the no restitution condition. Participants felt more empathic emotions after Round 2 in the restitution compared to the no restitution condition (see Table 1). There was no effect of restitution on

negative emotions. We concluded that our restitution manipulation of receiving raffle tickets from a partner who transgressed was perceived more positively than the similar outcome of receiving raffle tickets by chance.

### Apology manipulation

All but one participant in the apology condition correctly indicated that they received a note from the other participant. Retaining this participant's data had no effect on the results, and thus we included that person's data in all analyses. All participants who indicated that they received a note from their partner correctly stated that the note contained an apology. There were no differences in negative, positive, or empathic emotions between participants in the apology and the no apology conditions.

### Behavioral measure of forgiveness

Table 2 contains means (*M*) and standard deviations (*SD*) of the behavioral measure of forgiveness (Round 3 distribution) and self-reported forgiveness (motivation to express forgiveness through the distribution) items. Table 3 summarizes correlations for study variables. Table 2 shows that behavioral forgiveness was correlated with the endorsement of a number of different motivations for distribution, including helping the other participant, expressing forgiveness, and payback for previous rounds. The effects of restitution and apology on behavioral forgiveness were tested using a 2 (restitution: yes, no) × 2 (apology: yes, no) analysis of variance (ANOVA). (Participants in the no offense condition were omitted from analyses.) The ANOVA showed a significant main effect for restitution,  $F(1, 131) = 15.07$ ,  $p = < 0.001$ ,  $\omega^2 = 0.031$ . Means of the groups showed that participants in the restitution condition ( $M = 5.63$ ,  $SD = 1.56$ ) gave more to the

Table 2. Means and standard deviations for variables by condition.

Condition	Round 3 distribution			Express forgiveness		
	Mean	SD	<i>n</i>	Mean	SD	<i>n</i>
Restitution/no apology	5.36	1.91	28	2.57	2.04	28
Restitution/apology	5.96	0.96	24	4.43	1.95	23
No restitution/no apology	4.07	2.56	30	2.37	1.81	30
No restitution/apology	4.30	1.79	27	4.37	1.94	27
No offense/no restitution/no apology control	5.00	1.11	27	2.12	1.42	25
Grand total	4.07	2.56	136	2.37	1.81	135

Notes: Possible distributions were between 0–10 tickets. Items for the *express forgiveness* item were rated on a 1–7 scale.

other participant in Round 3 than did those in the no restitution condition ( $M=4.18$ ,  $SD=2.21$ ). Apology did not significantly affect the behavioral measure of forgiveness,  $F < 2$ ,  $p > 0.26$ . The interaction effect was not significant,  $F < 1$ ,  $p > 0.60$ . Thus, restitution from a transgressor increased prosocial behavior toward that transgressor, whereas the apology had no significant effect.

### Self-reported forgiveness

The effects of restitution and apology on self-reported forgiveness motivation were tested using a 2 (restitution: yes or no)  $\times$  2 (apology: yes or no) ANOVA. As before, participants in the no offense condition were omitted from analyses. There was a significant main effect for apology,  $F(1, 128)=26.23$ ,  $p < 0.001$ ,  $\omega^2=0.06$ , indicating that people in the apology condition ( $M=4.34$ ,  $SD=1.99$ ) more strongly endorsed 'express forgiveness' as a reason for their raffle ticket distribution, compared to those in the no apology condition ( $M=2.42$ ,  $SD=1.85$ ). Restitution did not significantly affect forgiveness motivation,  $F < 1$ ,  $p > 0.90$ . The interaction was not significant,  $F < 1$ ,  $p > 0.80$ . Thus, apology increased participants' self-reported motivations to express forgiveness through the distribution, whereas restitution had no significant effect.

Past research has also used empathy as an indirect self-report measure of forgiveness (Wade & Meyer, 2009; Wade, Worthington, & Haake, 2009). In order to examine the effect of restitution and apology on empathy a 2 (restitution: yes or no)  $\times$  2 (apology: yes or no), ANOVA was conducted. There was a significant main effect of both restitution ( $F[1, 108]=26.66$ ,  $p < 0.001$ ,  $\omega^2=0.322$ ) and apology ( $F[1, 108]=3.95$ ,  $p=0.049$ ,  $\omega^2=0.052$ ). The interaction was not significant,  $F < 1$ ,  $p > 0.45$ . Both apology and restitution independently increased the amount of empathy a person felt toward the other participant.

### Mediation analyses

Correlations were examined between the different motivations for distribution and behavioral forgiveness, shown in Table 2. The self-reported motivations most highly correlated with the distribution decision were the desire to get money, helping the other participant, being fair, expressing forgiveness, payback for an earlier distribution, and acting morally. In addition, the empathic concern subscale was significantly correlated with the resource distribution. To shed more light on the relationships of restitution and apology with forgiveness, mediation analyses were conducted. These analyses showed empathy and the desire to help the other participant were possible mediators of the restitution forgiveness relationship.

In order to test whether empathy was a mediator between behavioral forgiveness and restitution, restitution first must be a significant predictor of behavioral forgiveness, which it was ( $\beta=1.40$ ,  $SE=0.37$ ,  $p < 0.001$ ). Second, restitution must be a predictor of empathy, which it was ( $\beta=1.95$ ,  $SE=0.38$ ,  $p < 0.001$ ). Third, empathy must continue to predict behavioral forgiveness while controlling for restitution, which it did ( $\beta=0.22$ ,  $SE=0.09$ ,  $p=0.02$ ). Fourth, restitution must no longer predict behavioral forgiveness when empathy is controlled, and this condition was not fulfilled ( $\beta=0.98$ ,  $SE=0.41$ ,  $p=0.02$ ). This showed that full mediation was not present. However, a Sobel test indicated partial mediation, ( $Z=2.11$ ,  $p=0.035$ ). Following the recommendations of Preacher and Hayes (2004), a bootstrapping method was conducted and showed significant mediation (indirect effect =  $-0.4229$ , 95% confidence interval (CI) [0.0906, 0.8520]).

The relationship between the motivation to help the other participant and behavioral forgiveness was also significant ( $\beta=-0.84$ ,  $SE=0.35$ ,  $p < 0.02$ ). The effect of the motivation to help the other participant remained significant when controlling for restitution ( $\beta=0.77$ ,  $SE=0.07$ ,  $p < 0.001$ ). Restitution was still a significant predictor of behavioral forgiveness after the motivation to help was controlled ( $\beta=0.81$ ,  $SE=0.28$ ,



Table 3. Correlations between study variables.

	Behavioral forgiveness	Express	Help	Empathy	Justice	Lesson	Getmoney	Befair	Payback	Morally	Fair	Moral	Restitution
Behavioral forgiveness	—												
Express	0.40**	—											
Help	0.74**	0.46**	—										
Empathy	0.34**	0.21*	0.36**	—									
Justice	-0.11	0.12	-0.01	-0.09	—								
Lesson	-0.10	-0.05	-0.17	0.08	0.23*	—							
Getmoney	-0.44**	-0.07	-0.34**	0.03	-0.09	0.01	—						
Befair	0.27**	0.21*	0.37**	0.11	0.21*	-0.38**	-0.28**	—					
Payback	-0.58**	-0.22*	-0.46**	-0.04	0.20*	0.34**	0.31**	-0.37**	—				
Morally	0.64**	0.47**	0.67**	0.31**	0.18	-0.08	-0.39**	0.49**	-0.55**	—			
Fair	0.37**	0.25*	0.37**	0.02	0.13	-0.32**	-0.40**	0.71**	-0.44**	0.49**	—		
Moral	0.62**	0.38**	0.59**	0.16	0.01	-0.23*	-0.37**	0.51**	-0.61**	0.70**	0.77**	—	
Restitution	0.36**	0.02	0.23*	0.44**	-0.11	-0.16	-0.18	0.17	-0.14	0.11	0.09	0.16	—
Apology	0.12	0.45**	0.16	0.22*	0.09	-0.14	0.02	0.13	-0.05	0.13	0.08	0.10	-0.05

Notes: Correlations exclude participants in the 'No Offense' control condition. *behavioral forgiveness* = participants' raffle ticket distribution on the final round, *express* = 'To what degree was your [distribution] decision based on ...' expressing forgiveness, *help* = helping the other participant, *justice* = establishing justice, *lesson* = teaching a lesson, *getmoney* = getting money, *befair* = being fair, *payback* = payback for earlier distribution, *morally* = acting morally, *fair* = 'Do you think the way you made your resource distribution was fair?' *moral* = 'Do you think the way you made your resource distribution was morally right?' *empathy* = composite score of ratings after Round 2 for the emotions: *softhearted*, *tender*, *warm*, *moved*, *empathic*, *compassionate*, *sympathetic*. *restitution* = restitution condition. *apology* = apology condition. \*\* $p < 0.01$  (2-tailed). \* $p < 0.05$  (2-tailed).

$p < 0.03$ ), indicating that the criteria for full mediation were not met. However, a Sobel test indicated partial mediation ( $Z = 2.33$ ,  $p = 0.02$ ). A bootstrapping method showed significant mediation (indirect effect =  $-0.6442$ , 95% CI [ $0.1106, 1.2255$ ]). In summary, the results showed that both empathy and wanting to help the other participant were partial mediators of the relationship between restitution and behavioral forgiveness.

Mediation analyses were also conducted to examine whether apology's effect on self-reported forgiveness was mediated by the different motivations for the Round 3 distribution (e.g. the desire to get money, helping the other participant, being fair, expressing forgiveness, payback for an earlier distribution, and acting morally). None of the analyses showed significant mediation.

## Discussion

In the context of a distribution task with a stranger, where the offense was unequal distribution of raffle tickets, the effects of restitution and apology on forgiveness depended on the way that forgiveness was measured. Restitution increased individuals' behavioral forgiveness as measured by prosocial distribution behavior, whereas apology had no effect on behaviors. In contrast, apology increased individuals' self-reported forgiveness, whereas restitution did not affect self-reports. The differential effects of restitution and apology on separate measures of forgiveness were unexpected. Even though the behavioral measure of forgiveness was correlated with self-reported forgiveness, distinct mechanisms appeared to underlie verbal versus behavioral expressions of forgiveness.

One possible explanation is that participants who received restitution were operating under the norm of reciprocity rather than forgiveness, whereas participants who received an apology were more motivated to forgive. This explanation received equivocal support. In the restitution conditions, the Round 3 raffle ticket distribution used as the behavioral measure of forgiveness was positively correlated with the self-reported motivation to be fair ( $r = 0.37$ ,  $p < 0.01$ ), but it was also correlated with the motivation to express forgiveness ( $r = 0.40$ ,  $p < 0.01$ ). Additionally, if participants were simply trying to behave fairly in the restitution conditions, they would have shown distribution patterns similar to participants in the no offense control condition (where the distribution was also significantly related to fairness motivations [ $r = 0.55$ ,  $p < 0.01$ ], and where participants had no reason to express forgiveness to their distribution partner). However, the means show that participants in the restitution conditions distributed marginally more raffle tickets to their partner compared to

participants in the control condition,  $t(77) = 1.88$ ,  $p = 0.06$ ,  $d = 0.47$  (see Table 2 for means). Likewise, participants in the restitution conditions reported significantly more empathy after the restitution in Round 2 ( $M = 4.89$ ,  $SD = 2.26$ ), compared to participants in the control condition ( $M = 2.70$ ,  $SD = 1.84$ ,  $t[77] = 4.34$ ,  $p < 0.001$ ,  $d = 1.06$ ), and empathy has been shown to be related to forgiveness (e.g. McCullough et al., 1997, 1998). Therefore, the distinction between reciprocity and forgiveness does not seem to fully explain the differential effects between the behavioral measure of forgiveness and self-reported forgiveness.

Another way to explain this pattern of results is to make a distinction between explicit and implicit forgiveness. Explicit forgiveness is conscious and deliberate. In contrast, implicit forgiveness, like other implicit attitudes, is an unconscious and automatic attitude (Greenwald & Banaji, 1995; Greenwald, McGhee, & Schwartz, 1998). Karremans and Van Lange (2008) noted that forgiveness likely has implicit and explicit components, and argued that situational determinants often unconsciously affect the decision to forgive. Bueschel (2010) found no relationship between an implicit measure of forgiveness, and explicit forgiveness, but speculated that there may be a relationship between implicit forgiveness and forgiving behaviors. Research has found relationships between a number of different implicit attitudes and behaviors, often with implicit attitudes better predicting spontaneous behaviors, and explicit attitudes better predicting deliberative behaviors (Asendorpf, Banse, & Mücke, 2002; Chou, Chiu, Cen, Hsu, & Cho, 2009; Czopp, Monteith, Zimmerman, & Lynam, 2004; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Fazio, 1990; Neumann, Hülsebeck, & Seibt, 2004; Perugini, 2005; Rudolph, Schröder-Abé, Riketta, & Schütz, 2010). In our experiment, perhaps restitution triggered a more implicit forgiveness, which unconsciously affected raffle ticket distributions. This would explain the relationship between restitution and prosocial behavior, and the lack of relationship between restitution and self-reported (explicit) forgiveness. In turn, perhaps apology triggered a more explicit forgiveness, which affected the more conscious, deliberative self-report measure of forgiveness motivation. Additional research is needed to verify whether restitution and apology do indeed affect differently the implicit and explicit facets of forgiveness.

The different effects of restitution and apology may also be related to the contrast between *intrapersonal* and *interpersonal* conceptualizations of forgiveness. Baumeister, Exline, and Sommer (1998) theorized that forgiveness contained both an internal, attitudinal component, and an interpersonal, action component. Karremans and Van Lange (2008) noted that whereas some forgiveness researchers define forgiveness

interpersonally in terms of a return to pre-transgression relationship behaviors (e.g. Finkel, Rusbult, Kamashiro, & Hannon, 2002; Hannon et al., 2010), other researchers define forgiveness intrapersonally in terms of psychological changes in motivation and attitude toward the transgressor (e.g. McCullough, 2001). The current experiment contained two measures of forgiveness: the raffle ticket distribution, which was an interpersonal behavior, and a self-report measure of forgiveness motivation, which was more intrapersonal. Likewise, our two experimental manipulations may have fallen on different ends of the spectrum: the restitution manipulation, which was an interpersonal behavior from the transgressor, and the apology manipulation, which served as a window to the transgressor's intrapersonal attitudes and emotions. It therefore is not surprising that the interpersonal manipulation of restitution had causal effects on the interpersonal measure of behavioral forgiveness, whereas the more intrapersonally relevant apology primarily affected the intrapersonal self-report measure of forgiveness. To better understand the relationship between apology, restitution and forgiveness after transgressions from strangers, future research is needed to replicate these findings that apology and restitution affect forgiveness differently, and to explain mechanisms that might underlie any differences that are found.

Our research further demonstrated the importance of empathy in forgiveness. Whereas in previous research, empathy has been found to mediate the apology-forgiveness relationship (Davis & Gold, 2010; McCullough et al., 1997), we found in that although apology increased empathy, empathy did not mediate the relationship between apology and forgiveness. Instead, empathy mediated the restitution-forgiveness relationship. These discrepant results may be due to methodological differences: McCullough et al. (1997) and Davis and Gold (2010) were studying forgiveness for recollections of real-life transgressions with close others, whereas we were studying forgiveness for a milder but more immediate offense with a stranger. Rather than throwing doubt upon previous research on empathy and forgiveness, this demonstrates the importance of empathy to forgiveness across different relationship contexts, transgression contexts, and research methodologies. Our results also support previous research suggesting that empathy might be a proxy measure of forgiveness (Wade & Meyer, 2009; Wade et al., 2009).

One limitation of this study is the mildness of the transgression and of the apology. For ethical and practical reasons, laboratory transgressions tend to be weaker than some real-life transgressions experienced outside the laboratory. However, this trade-off was necessary in order to present participants with standardized manipulations of restitution and apology. It also allowed us to assess participants' attitudes and

emotions in the moment, rather than relying on their forgiveness recollections. Future research might attempt to manipulate the severity of the offense experimentally to see what effects this has on self-report, behavioral measures of forgiveness, and physiology. Future research might also examine whether the same effects seen in our study for transgressors who were strangers would also be seen for transgressors with whom victims were better acquainted.

## Conclusions

Making amends can facilitate forgiveness, but not all amends can fully compensate for offenses. Thus, communications of apology may be needed to respond to the relational damage done. If transgressors wish to influence the psychological experience of forgiveness in their victims, apology may be an effective technique. Yet the forgiveness facilitated by apology may be a 'silent forgiveness,' lacking in interpersonal consequences. If the apology is genuine, changed behavior to bring repair ought to be evident. In turn, restitution without apology may lead to a 'hollow forgiveness' (Baumeister et al., 1998), in which transgressors are treated better but not necessarily forgiven. The results of the present study suggest that if transgressors seek both psychological and interpersonal forgiveness from their victims, they must pair their apologies with restitution. Apparently, actions and words speak loudest in concert.

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## References

- Asendorpf, J.B., Banse, R., & Mücke, D. (2002). Double dissociation between implicit and explicit personality self-concept: The case of shy behavior. *Journal of Personality and Social Psychology*, *83*, 380–393.
- Bachman, G.F., & Guerrero, L.K. (2006). Forgiveness, apology, and communicative responses to hurtful events. *Communication Reports*, *19*, 45–56.
- Batson, C.D. (1991). *The altruism question: Toward a social-psychological answer*. Hillsdale, NJ: Erlbaum.
- Batson, C.D. (2011). *Altruism in humans*. Oxford: Oxford University Press.
- Baumeister, R.F., Exline, J.J., & Sommer, K.L. (1998). The victim role, grudge theory, and two dimensions of forgiveness. In E.L. Worthington Jr (Ed.), *Dimensions of forgiveness: Psychological research and theological perspectives* (pp. 79–104). Philadelphia, PA: Templeton Foundation Press.
- Bottom, W.P., Gibson, K., Daniels, S.E., & Murnighan, J.K. (2002). When talk is not cheap: Substantive penance and

- expressions of intent in rebuilding cooperation. *Organization Science*, *13*, 497–513.
- Bueschel, R.K. (2010). *Development of an implicit measure of dispositional forgiveness* (Doctoral dissertation). Baylor University, Waco, Texas, USA.
- Chou, T.-A., Chiu, F.-C., Chen, H.-C., Hsu, C.-C., & Cho, S.-L. (2009). Implicit and explicit measures of the shyness. *Bulletin of Educational Psychology*, *41*, 453–474.
- Czopp, A.M., Monteith, M.J., Zimmerman, R.S., & Lynam, D.R. (2004). Implicit attitudes as potential protection from risky sex: Predicting condom use with the IAT. *Basic and Applied Social Psychology*, *26*, 227–236.
- Darby, B.W., & Schlenker, B.R. (1982). Children's reactions to apologies. *Journal of Personality and Social Psychology*, *43*, 742–753.
- Davis, J.R., & Gold, G.J. (2010). An examination of emotional empathy, attributions of stability, and the link between perceived remorse and forgiveness. *Personality and Individual Differences*, *50*, 392–397.
- Dovidio, J.F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). On the nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, *33*, 510–540.
- Eaton, J., Struthers, C.W., & Santelli, A.G. (2006). The mediating role of perceptual validation in the repentance-forgiveness process. *Personality and Social Psychology Bulletin*, *32*, 1389–1401.
- Eaton, J., Struthers, C.W., Shomrony, A., & Santelli, A.G. (2007). When apologies fail: The moderating effect of implicit and explicit self-esteem on apology and forgiveness. *Self and Identity*, *6*, 209–222.
- Exline, J.J., Worthington Jr., E.L., Hill, P., & McCullough, M.E. (2003). Forgiveness and justice: A research agenda for social and personality psychology. *Personality and Social Psychology Review*, *7*, 337–348.
- Fazio, R. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 75–109). New York, NY: Academic Press.
- Fehr, R., & Gelfand, M.J. (2010). When apologies work: How matching apology components to victims' self-construals facilitates forgiveness. *Organizational Behavior and Human Decision Processes*, *113*, 37–50.
- Fehr, R., Gelfand, M.J., & Nag, M. (2010). The road to forgiveness: A meta-analytic synthesis of its situational and dispositional correlates. *Psychological Bulletin*, *136*, 894–914. doi:10.1037/a0019993.
- Fincham, F.D. (2000). The kiss of porcupines: From attributing responsibility to forgiving. *Personal Relationships*, *7*(1), 1–23.
- Fincham, F.D., & Beach, S.R.H. (2002). Forgiveness in marriage: Implications for psychological aggression and constructive communication. *Personal Relationships*, *9*, 239–251.
- Fincham, F.D., & Beach, S.R.H. (2007). Forgiveness and marital quality: Precursor or consequence in well-established relationships? *The Journal of Positive Psychology*, *2*, 260–268.
- Fincham, F.D., Hall, J., & Beach, S.R.H. (2006). Forgiveness in marriage: Current status and future directions. *Family Relations*, *55*, 415–427.
- Finkel, E.J., Rusbult, C.E., Kamashiro, M., & Hannon, P.A. (2002). Dealing with betrayal in close relationships: Does commitment promote forgiveness? *Journal of Personality and Social Psychology*, *82*, 956–974.
- Friedman, P.H., & Toussaint, L.L. (2006). The relationship between forgiveness, gratitude, distress, and well-being: An integrative review of the literature. *International Journal of Healing and Caring*, *6*(2), 1–10.
- Gold, G.J., & Davis, J.R. (2005). Psychological determinants of forgiveness: An evolutionary perspective. *Humboldt Journal of Social Relations*, *29*, 111–134.
- Greenwald, A.G., & Banaji, M.R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*, 4–27.
- Greenwald, A.G., McGhee, D.E., & Schwartz, J.L.K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, *74*, 1464–1480.
- Hannon, P.A., Rusbult, C.E., Finkel, E.J., & Kamashiro, M. (2010). In the wake of betrayal: Amends, forgiveness, and the resolution of betrayal. *Personal Relationships*, *17*, 253–278.
- Haselhuhn, M.P., Schweitzer, M.E., & Wood, A.M. (2010). How implicit beliefs influence trust recovery. *Psychological Science*, *21*, 645–648.
- Hill, P.L., & Allemand, M. (2011). Gratitude, forgivingness, and well-being in adulthood: Tests of moderation and incremental prediction. *The Journal of Positive Psychology*, *6*, 397–407.
- Jones, E.E., & Pittman, T.S. (1982). Toward a general theory of strategic self-presentation. In J.M. Suls (Ed.), *Psychological perspectives on the self* (pp. 231–262). Hillsdale, NJ: Erlbaum.
- Karremans, J.C., & Van Lange, P.A.M. (2004). Back to caring after being hurt: The role of forgiveness. *European Journal of Social Psychology*, *34*, 207–227.
- Karremans, J.C., & Van Lange, P.A.M. (2008). Forgiveness in personal relationships: Its malleability and powerful consequences. *European Review of Social Psychology*, *19*, 202–241.
- Luchies, L.B., Finkel, E.J., McNulty, J.K., & Kumashiro, M. (2010). The doormat effect: When forgiving erodes self-respect and self-concept clarity. *Journal of Personality and Social Psychology*, *98*, 734–749.
- Maio, G.R., Thomas, G., Fincham, F.D., & Carnelley, K.B. (2008). Unraveling the role of forgiveness in family relationships. *Journal of Personality and Social Psychology*, *94*, 307–319.
- McCullough, M.E. (2001). Forgiveness: Who does it and how do they do it? *Current Directions in Psychological Science*, *10*, 194–197.
- McCullough, M.E., Kurzban, R., & Tabak, B.A. (2011). Evolved mechanisms for revenge and forgiveness. In P.R. Shaver & M. Mikulincer (Eds.), *Human aggression and violence: Causes, manifestations, and consequences. Herzilya series on personality and social psychology* (pp. 221–239). Washington, DC: American Psychological Association.
- McCullough, M.E., Luna, L.R., Berry, J.W., Tabak, B.A., & Bono, G. (2010). On the form and function of forgiving: Modeling the time-forgiveness relationship and

- testing the valuable relationships hypothesis. *Emotion*, *10*, 358–376.
- McCullough, M.E., Rachal, K.C., Sandage, S.J., Worthington Jr., E.L., Brown, S.W., & Hight, T.L. (1998). Interpersonal forgiving in close relationships II: Theoretical elaboration and measurement. *Journal of Personality and Social Psychology*, *75*, 1586–1603.
- McCullough, M.E., & Witvliet, C.V.O. (2002). The psychology of forgiveness. In C.R. Snyder & S.J. Lopez (Eds.), *Handbook of positive psychology* (pp. 446–458). New York, NY: Oxford University Press.
- McCullough, M.E., Worthington Jr., E.L., & Rachal, K.C. (1997). Interpersonal forgiving in close relationships. *Journal of Personality and Social Psychology*, *73*, 321–336.
- Miller, A.J., & Worthington Jr., E.L. (2010). Sex differences in forgiveness and mental health in recently married couples. *The Journal of Positive Psychology*, *5*, 12–23.
- Neumann, R., Hülsenbeck, K., & Seibt, B. (2004). Attitudes toward people with AIDS and avoidance behavior: Automatic and reflective bases of behavior. *Journal of Experimental Social Psychology*, *40*, 543–550.
- Ohbuchi, K., Kameda, M., & Agarie, N. (1989). Apology as aggression control: Its role in mediating appraisal of and response to harm. *Journal of Personality and Social Psychology*, *56*, 219–227.
- Paleari, F.G., Regalia, C., & Fincham, F.D. (2010). Forgiveness and conflict resolution in close relationships: Within and cross partner effects. *Universitas Psychologica*, *9*, 35–56.
- Perugini, M. (2005). Predictive models of implicit and explicit attitudes. *British Journal of Social Psychology*, *44*, 29–45.
- Preacher, K.J., & Hayes, A.F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*, 717–731.
- Rudolph, A., Schröder-Abé, M., Riketta, M., & Schütz, A. (2010). Easier when done than said!: Implicit self-esteem predicts observed or spontaneous behavior, but not self-reported or controlled behavior. *Zeitschrift für Psychologie/Journal of Psychology*, *218*, 12–19.
- Smith, C.E., Chen, D., & Harris, P.L. (2010). When the happy victimizer says sorry: Children's understanding of apology and emotion. *British Journal of Developmental Psychology*, *28*, 727–746.
- Struthers, C.W., Eaton, J., Santelli, A.G., Uchiyama, M., & Shirvani, N. (2008). The effects of attributions of intent and apology on forgiveness: When saying sorry may not help the story. *Journal of Experimental Social Psychology*, *44*, 983–992.
- Tsang, J.-A. (2007). Gratitude for small and large favors: A behavioral test. *The Journal of Positive Psychology*, *2*, 157–167. doi:10.1080/17439760701229019.
- Wade, N.G., & Meyer, J.E. (2009). Comparison of brief group interventions to promote forgiveness: A pilot outcome study. *International Journal of Group Psychotherapy*, *59*, 199–220.
- Wade, N.G., Worthington Jr., E.L., & Haake, S. (2009). Comparison of explicit forgiveness interventions with an alternative treatment: A randomized clinical trial. *Journal of Counseling and Development*, *87*, 143–151.
- Weiner, B., Graham, S., Peter, O., & Zmuidinas, M. (1991). Public confession and forgiveness. *Journal of Personality*, *59*, 281–312.
- Witvliet, C.V.O., DeYoung, N.J., Hofelich, A.J., & DeYoung, P.A. (2011). Compassionate reappraisal and emotion suppression as alternatives to offense-focused rumination: Implications for forgiveness and psychophysiological well-being. *The Journal of Positive Psychology*, *6*, 286–299.
- Witvliet, C.V.O., Knoll, R.W., Hinman, N.G., & DeYoung, P.A. (2010). Compassion-focused reappraisal, benefit-focused reappraisal, and rumination after an interpersonal offense: Emotion regulation implications for subjective emotion, linguistic responses, and physiology. *The Journal of Positive Psychology*, *5*, 226–242.
- Witvliet, C.V.O., Ludwig, T.E., & Vander Laan, K.L. (2001). Granting forgiveness or harboring grudges: Implications for emotion, physiology, and health. *Psychological Science*, *12*, 117–123.
- Worthington Jr., E.L., Witvliet, C.V.O., Pietrini, P., & Miller, A.J. (2007). Forgiveness, health, and well-being: A review of evidence for emotional versus decisional forgiveness, dispositional forgivingness, and reduced unforgiveness. *Journal of Behavioral Medicine*, *30*, 291–302.
- Zechmeister, J.S., Garcia, S., Romero, C., & Vas, S.N. (2004). Don't apologize unless you mean it: A laboratory investigation of forgiveness and retaliation. *Journal of Social and Clinical Psychology*, *23*, 532–564.