When examining the effectiveness of apologies on forgiveness, there are two divergent theoretical approaches. The empathy model and the attribution model. In the empathy model an effective apology by the transgressor increases feelings of empathy for the transgressor by the wronged party, which then increases forgiveness (Brown, Wohl, & Exline, 2008; McCullough, Fincham, & Tsang, 2003; McCullough, Worthington, & Rachal, 1997). Attribution researchers found that an effective apology must include perceptions of genuine remorse (Gold & Weiner, 2000). An effective expression of remorse increases the judgment that the offender is less likely to repeat the offense (a judgment of less attributional stability), which then increases forgiveness (Gold & Davis, 2005; Gold & Weiner, 2000; Takaku, 2001; Weiner, Graham, Peter, & Zmuidinas, 1991). In the context of romantic relationships, Davis and Gold (2011) compared the two models and found that both attributions of stability and feelings of empathy play an important role in forgiveness.

Within romantic and/or close relationships, beginning with McCullough, Worthington and Rachal (1997), considerable research has identified emotional empathy as the most important factor leading to forgiveness (Macaskill, Maltby, & Day, 2002; McCullough et al., 2003, Paleari, Regalia, & Fincham, 2009; Zechmeister & Romero, 2002). However, when Davis and Gold (2011) examined empathy along with perceptions of stability and forgiveness, the data indicated a different pathway between a remorseful apology and forgiveness. In a questionnaire-based study, participants were asked to recall actual transgressions that they experienced within the context of a romantic relationship, and then answer a series of questions. As perceived remorse increased, attributions of behavioral stability decreased, while both empathy and forgiveness increased. More specifically, attributions of stability mediated the effect of remorse on empathy, while empathy then mediated the effect of attributions of stability on forgiveness. In accordance with the attribution model, a path analysis found perceptions of (decreased) stability preceded feelings of increased empathy for the transgressor. It appears that this was the first study to compare the two theoretical explanations of forgiveness following an apology.

Like McCullough and colleagues (1997) and much subsequent work, Davis and Gold (2011) focused on forgiveness in the context of close relationships. However, many judgments that involve forgiveness between people occur outside of this relational context. Despite this, we are unaware of studies that attempt to integrate the two theoretical approaches outside this domain. As much of human interaction occurs between those without close ties, there is a necessity for further exploration of these mechanisms in different contexts. As with Davis and Gold (2011) the research described here looks specifically at how perceptions of remorse by an offending party affect empathy, attributions of stability, and forgiveness. However this is an experiment in the context of an interaction between two strangers where we experimentally manipulate the level of remorse following a transgression with a subsequent confession of guilt.

**Impression Management**

Definitions of forgiveness vary but there are commonalities. Researchers generally agree that forgiveness involves reducing negative feelings and behaviors towards the transgressor, resulting in a more positive perceptions while decreasing the need for retaliation (Enright, Gassin, & Wu, 1992). According to Weiner (1991), there are five strategies a transgressor can employ to reduce negative feelings: denial, excuses, justifications, apologies, and confession. Generally, as the amount of responsibility increases, so do negative appraisals and retributive behavior (Weiner, 1995). Successful denial is unique as it removes all causality and responsibility (and thus negative feelings) from the accused.

The other four strategies require the perpetrator to accept some degree of causality and/or responsibility. A transgressor who successfully uses excuses or justifications accepts a degree of causality (yes I did it), but not responsibility (I am not to blame) for the action. Instead, the guilty party redirects responsibility to causes beyond their control (e.g., it had to be done/I had no choice; I was unavoidably distracted). However confession is paradoxical. By confessing, a transgressor accepts both causality and responsibility for a misdeed, yet a confession can lead to more forgiveness than not confessing (Gold & Weiner, 2000). As Gold & Weiner (2000) note, the main requirement for a confession to be successful is an apology accompanied by the perception of genuine remorse.

**Remorse**

When a confession is successful, the morality of the offending party is at least partially recovered (Gold & Weiner, 2000). From the retributive standpoint, equity has been at least partially restored because remorse signals that the transgressor has suffered internally though feelings such as guilt due to their actions. A successful confession signals that the offender recognizes the violation of a basic social rule. This indicates the offender’s enduring belief in the value of the social code (Darby & Schlenker, 1989). By offering a confession, the offender can recover their morality (Goffman, 1971, Kohlberg, 1969). Therefore, a successful confession addresses utilitarian concerns because through the expression of remorse the perception that one believes in the value of the social norm is recovered, which indicates reduced behavioral stability i.e., reduced likelihood of repeating the behavior (Davis & Gold, 2011; Gold & Weiner, 2000). So when remorse is perceived, the harmed party judges the likelihood of a repeat transgression as lower, and is thus more willing to forgive (Gold & Weiner, 2000).  
 This logic leads to the first hypothesis: Following a transgression and confession, a remorseful apology will lead to more forgiveness for the transgressor than a confession without remorse.

Within different types of relationships, individuals have different goals and desires. Evolutionary theory provides one possible framework for understanding how the pathway between an apology and forgiveness may have different mediating mechanisms depending on the context of the social relationship (Gold & Davis, 2005).

**Evolution and Forgiveness**

Humans have always depended on groups for survival and are social creatures by nature (Buss, 1998). To increase chances of survival, groups would share responsibilities including gathering food, parenting duties, hunting responsibilities, and defense from outsiders. Maintaining a cohesive group to collaborate with is paramount for fulfilling these basic needs. An evolutionary explanation for forgiveness posits that because groups enhance an individual’s chance of survival, humans have evolved to have social behaviors that enhance the survival of both the individual and the group. Achieving forgiveness allows a transgressor to continue to receive the benefits of group membership. For the group, granting forgiveness allows the group to remain intact. This preserves the benefits of group size and diversity when an inevitable transgression occurs.

It is expected that on occasion social norms will be transgressed. Due to the importance of group membership there must be an adaptive set of responses that serve as the means to achieve forgiveness (Gold & Davis, 2005). As noted above, research has identified two important factors that lead to forgiveness—empathy and perceptions of stability.

**Empathy**

A large number of investigations into the dynamics of forgiveness study conciliatory behaviors following a transgression in freely chosen interpersonal relationships (McCullough et al., 1997). This line of research defines forgiveness as motivational changes that facilitate the inhibition of destructive actions towards the interpersonal relationship. Specifically, interpersonal forgiveness is defined as the betrayed individual becoming less motivated to retaliate against the offender, less motivated to continue estrangement from the offending party, and more motivated for reconciliatory actions towards the offender despite the harmful actions. This research has found that following an apology, the betrayed party empathizes more with the transgressor. Empathy leads to forgiveness. Empathy means an other-focused emotional response that leads one to experience feelings of sympathy, compassion, and tenderness for the other (Batson, 1991). Empathizing with a close other increases awareness of guilt felt by the transgressor, highlights the transgressor’s feelings of loneliness, and increases efforts to maintain the relationship (McCullough et al., 1997).

This logic leads to the second hypothesis: Following a transgression and confession, a remorseful apology will lead to increased empathy for the transgressor resulting in increased forgiveness compared to a confession without remorse.

**Stability**

A group expects members to follow social norms (Raven, 1992). For an observer, an individual’s likelihood of complying with social norms corresponds to perceptions of their morality (Kohlberg, 1969). As such, the morality of an individual, and thus the likelihood of repeating the behavior is a utilitarian concern.

Through a series of acquaintance role-playing studies, Gold and Weiner (2000) identified the utilitarian concern, perceived stability of an action, as the best predictor for forgiveness. Therefore, when a confession is forthcoming and expressed with remorse, the remorse indicates there is a recovery of morality (indicating respect for social norms) ascribed to the perpetrator. A judgment is made that the transgressor will not repeat the behavior again (an attribution of behavioral instability), and forgiveness is more likely (Davis & Gold, 2011; Gold & Weiner, 2000). Based on evolutionary theory, utilitarian concerns should be of primary importance in determining forgiveness for acquaintance and stranger relationships (Gold & Davis, 2005).

Davis and Gold (2011) found that a remorseful apology (compared to a non-remorseful apology) significantly decreased perceptions of stability and significantly increased both empathy and forgiveness. Together, stability and empathy fully mediated the path between apology and forgiveness. First stability mediated the effect of the remorseful apology on empathy, then empathy mediated the effect of stability on forgiveness. In addition to the stability-empathy-forgiveness path, there was a significant path directly from stability to forgiveness. For the model to have good fit, perceptions of stability needed to preceded empathy and forgiveness.

This logic leads to the third hypothesis: After a transgression by a stranger, a remorseful apology as compared to a non-remorseful apology will result in decreased perceptions of stability while increasing empathy and forgiveness.

Hypothesis 4a: The effect of a remorseful apology on forgiveness will be mediated by stability and empathy, with both a path from stability to empathy to forgiveness, and a direct path from stability to forgiveness.

Hypothesis 4b: The effect of remorse condition (remorse/no remorse) on empathy will be mediated by attributions of behavioral stability.

Hypothesis 4c: The effect of stability on forgiveness will operate both directly and through empathy.

**Overview of the Current Study**

The current study is designed to examine forgiveness in the context of a confession of wrongdoing with the transgressor offering either a remorseful apology or one lacking any expression of remorse. To add realism and psychological impact, participants thought they were playing a game with a real person in a room a few feet away. However, the “other person” was actually a program that ran on the participant’s computer. Research assistants took a number of steps to make the “other person” seem real. During the study, the “other person” agrees to be a team member with the participant in a game where the winners could receive $50 and extra participation points towards class credit. The “partner” agrees to cooperate for mutual benefit, and then breaks the agreement by cheating, causing the participant to lose. To manipulate remorse, we had the “partners” exchange text messages following the computer game. At the beginning of the study, there was an attempt to manipulate group status using a minimal group paradigm via a dot matrix estimation task (Tajfel & Turner, 1979), but this was ineffective and was therefore not included in the analysis. IRB approval was obtained before beginning the study.

**Method**

**Participants**

Participants were recruited from the Humboldt State (HSU) research participation pool. At HSU, students can choose to take part in research or do an alternate assignment to earn points for classes. Actual participants choose to either cooperate or compete with the other “participant.” Competing was the planned transgression, so we needed participants to agree to cooperate for the experiment to work. Two who showed up for the study choose to compete and were immediately released before the study began.

Twenty-three participants started the study, but self-selected out by failing the manipulation check which were instructions directing participants to not complete the last section of the dependent measures (the RTS scale, see below) if they felt there was no transgression. However since there was always a transgression, not perceiving one meant the manipulation failed. Of those participants who failed, 16 were in the no remorse condition and seven were in the remorse condition. Those who failed the manipulation check reported that their partner played more fairly (*M* = 5.1, *SD* = 1.4) than participants who did not fail the manipulation check (*M* = 2.69, *SD* =1.4), *t* (122) = 7.3, *p* < .05. Those who failed the manipulation check in the no remorse condition thought their partners had been more fair (*M* = 5.5, *SD* = 1.2) than those in the remorse condition (*M* = 4.1, *SD* = 1.5), *t* (122) = -2.3, *p* < .05. However for those who did not fail the manipulation check there was no difference in perceived fairness between conditions (remorse *M* = 2.7, no remorse *M* = 2.7). The Enright forgiveness measure was completed before the manipulation check. There were no differences between remorse conditions for those who failed the manipulation check on the Enright forgiveness measure. However, there were significant differences in overall forgiveness on the Enright scale between remorse conditions for those who did not fail the manipulation check (remorse *M* = 4.4, no remorse *M* = 3.7), *p* < .05. These results support our interpretation that the manipulation check successfully identified participants who were not manipulated as intended.

There were 77 self-identified female and 25 male participants (*Mage =*20.3) used in the analysis. 51% of the sample self-identified as White, 24.5% as Hispanic, 13.7% as 2 or more races, 5.9% as Black, with no other group exceeding 2% of the sample.

**Dependent Measures**

**Response to a Transgression Scale (RTS).** The RTS (Gold & Weiner, 2000) is a 23-item scale. We used four subscales that measure the constructs of forgiveness (α = .706), empathy (α = .75), stability (α = .786), and remorse (α = .909). The constructs of forgiveness and empathy refer to the feelings of the participant (e.g., “How much do you forgive this person?”; “How empathetic did you feel towards this person?”). The constructs of stability and remorse refer to how the participant believes the other participant feels (e.g., “How likely do you think it is that this person would continue to engage in the bad behavior?”; “How much remorse did you think this person showed?”). On these scales 1 is the minimum with 5 the maximum rating with the anchors changing to coincide with each item (e.g. For empathy, 1 – “Not at all empathetic”, 5 – “Extremely empathetic”).

**Procedure**

In this double-blind study participants signed up for the study titled “Interaction Dynamics” online though the psychology department research pool via a program called Sona Systems. Participants arrived at a clearly marked lab with a closed door. A sign on the door asked them to knock if they were there for the “Interaction Dynamics” study. Upon knocking they were greeted by Experimenter 1 who asked if they were there for the “Interaction Dynamics” study. If yes, they initially entered one large room rectangular room. Along two of the walls there are doors (two on one wall, three on another) that allow entry to five smaller rooms.

Research assistants took several measures to ensure participants would believe they were playing with another “real” participant and not against their computer. The door to one of the small rooms with the other “real” participant was partially ajar so that the participant could see Experimenter 2 sitting in front of a computer, without a lab coat on, ostensibly the other “real” participant. Experimenter 1 directed participants to leave their belongings next to a backpack, already stored outside one of the smaller experimental rooms (intended to give the appearance of belonging to the other “real” participant). Experimenter 1 told participants that the other research assistant was running just a bit late. Participants were then asked if they wished to take part in a study “looking at internet interactions and texting communications people have with others.” If yes (it was always yes) Experimenter 1 led participants to one of the small rooms containing a computer where they would play the game. In the room was a clear jar containng 50 one dollar bills and a photo of a smiling undergrad holding $50 with the caption “past winner.” Here they were told they could get started by reading and signing the consent form. Experimenter 1 then left the real participant, and could be heard talking to the other “participant” giving similar informed consent instructions. Shortly after the participant signed the informed consent form Experimenter 1 started explaining the next procedure to the actual participant. At this point, Experimenter 2, who was originally sitting in the other experimental room acting as the other participant, enacted the following procedure. Experimenter 2 put on their lab coat, walked quietly out of the other experimental room, opened the main door to the lab, shut it firmly, walked quickly back towards the small lab room where the other “participant” was supposed to be, and said “sorry I am running late” in a conversational tone and entered that room.

Experimenter 1 described the computer based word completion game to the participant while they followed along with a tutorial version on the computer to become familiar with the mechanics of the program, and explained the rules. For example, Experimenter 1 said the following when explaining the rules:

This game has 10 incomplete words that you and your partner will be filling in with the missing letters. As a clue, you should know that the words are all business nouns. You will have 5 minutes to finish the game. So if all 10 words are not completed in 5 minutes, you and your partner will lose the game and be disqualified from continuing. So now I'll tell you the rules: you and your partner need to work together to win the game. You must take turns when completing the words. If anyone completes two words in a row both of you will be disqualified from the game. If you and your partner work together to solve all 10 words in 5 minutes you will both win the game.

Participants were also told that winning the game would get them entered in the drawing for $50, and that winning in 3 minutes or less would get them double participation points. Losing meant that participants would be excluded from the $50 raffle and would not qualify to receive extra participation credits. Before the game began, Experimenter 1 left the participant’s room to find out if the other “participant” wished to play the game by competing with the participant or cooperating. Experimenter 1 then returned with a sheet indicating that the other “participant” had chosen to cooperate.

Once participants were comfortable with the procedure, the participant was left alone with the computer. First, participants were randomly assigned to a minimal group in-group or out-group status by way of a dot estimation task (see Tajfel & Turner, 1979). After completing the task the computer program gave feedback to all participants that they overestimated the number of dots. The program indicated to those assigned to the in-group condition that their “partner” was also an overestimator, those assigned to the out-group condition were informed their partner was an underestimator. The participant then played the rigged computer game where their “partner” cheated (by solving six of the ten words), causing them to lose the game. Participants were randomly assigned to receive either a confession with an admission of guilt and a remorseful apology (i.e. “So I guess I won. I’m so sorry, I really feel bad I cheated. I guess I took advantage of the fact we were supposed to co-operate”) or a confession with an admission of guilt without remorse (i.e. “So I guess I won. Can’t say I’m sorry or feel bad or anything. I guess I took advantage of the fact we were supposed to co-operate”). Participants then completed the Enright Forgiveness Inventory (Enright, Rique, & Coyle, 2000) and the Response to a Transgression Scale (Gold & Weiner, 2000). The Enright Forgiveness Inventory was included as part of another study, so its data was not used in the analysis.

**Data Analysis**

The IBM Statistical Package for the Social Sciences for Windows, Release 23 and MPlus were used for the statistical analysis. We conducted a MANOVA due to medium to strong correlations between dependent measures (See Table 1). Remorse condition was entered as the fixed factor and empathy, stability, and forgiveness as the dependent variables. We conducted a path analysis using Mplus statistical software (version 7.4, Muth**é**n & Muth**é**n, 1998–2015) to test the integrated forgiveness model proposed by Davis and Gold (2011). Finally, we employed Hayes (2013) *Process* Macro to test model 6 for serial mediation of remorse to forgiveness through stability and empathy.

**Results**

**Manipulation check.** Dependent measures met assumptions for analyses. Those in the remorseful apology condition perceived their partner to be more remorseful (*M* = 2.9) than participants in the no remorse condition (*M* = 1.4), *t* (100) = 9.9, *p* < .05 which indicates that the manipulation was successful.

**Correlation matrix.** Means, standard deviation, and the correlation matrix of our dependent measures are in Table 1. All variables are moderately to strongly related in the directions hypothesized, lending preliminary support to our hypotheses. Decreased perceptions of behavioral stability are related to higher levels of both empathy and forgiveness. Higher levels of empathy are associated with higher levels of forgiveness.

**MANOVA.** To test our first three hypotheses we conducted a MANOVA to account for the high correlations between dependent measures and to test whether a remorseful apology would increase feelings of empathy and forgiveness while decreasing perceptions of behavioral stability. There is a significant effect of remorse condition as indicated by the multivariate variable, Wilks’ λ = .782, *F* (3, 98) = 9.1, *p* < .05, *ηp2* = .218. To understand how each dependent variable was affected, we analyzed the univariate tests for stability, empathy, and forgiveness respectively. All three univariate main effects were significant. A remorseful apology: reduced perceptions of behavioral stability (*M* = 3.36, *SD* = .79), compared to a confession with no remorse (*M* = 4.07, *SD* = .74), *F* (1, 100) = 21.5, *p* < .05, *ηp2* = .177; increased forgiveness (*M* = 3.57, *SD* = .64), compared to a confession with no remorse (*M* = 2.96, *SD* = .70), *F* (1, 100) = 20.9, *p* < .05, *ηp2 = .173*; and increased empathy (*M* = 2.48, *SD* = .75), compared to a confession with no remorse (*M* = 2.04, *SD* = .69), *F* (1, 100) = 9.3, *p* < .05, *ηp2 = .085*. Although we found significant differences, means indicate that participants in the remorse condition were still less empathetic than the neutral midpoint, *t* (54) = -5.2, *p* < .05, *d* = 1.4 and saw actions as more stable than the neutral midpoint, *t* (54) = 3.4, *p* < .05, *d* = 0.94.

**Path analysis.** We examined the saturated model to identify whether direct paths not hypothesized by our model would be significant. As predicted, remorse condition did not significantly predict feelings of empathy (*β* = .087, *p* > .05). Our model differs from Davis and Gold (2011) because the direct effect between remorse condition and forgiveness (*β* = .268, *p* < .05) remains significant with the mediators entered in the model. Recent studies show evidence that the full versus partial mediation distinction may be misleading and researchers should instead focus on the size of indirect effects (Rucker, Preacher, Tormala, & Petty, 2011). Therefore, we excluded the path between remorse condition and feelings of empathy while retaining the direct path while testing our model (see Figure 1).

The criteria we used to test the fit of our model include the Chi-square statistic, the standardized root mean square error (SRMR), the comparative fit index (CFI), and the root mean square error of approximation (RMSEA), all estimates of model fit (Hu & Bentler, 1999). For a model to have good fit the Chi-square statistic should not be statistically significant, SRMR should fall at .10 or less, the CFI should be .95 or more, and RMSEA should be less than .08. We used the Akaike Information Criterion (AIC) to compare our hypothesized model to potential alternatives (Akaike, 1973). For non-nested models, such as the one we are testing, the model that has the lowest AIC score indicates the best fit. Our hypothesized model shows good fit, 2 (1, *N* = 102) = .423, *p* > .05, SRMR = .013, CFI = 1.0, RMSEA = .000 (90% confidence limits .00, .226), AIC = 612 and all path coefficients were significant (see Figure 1).

An expression of remorse (or not), attributions of behavioral stability, and feelings of empathy explain a considerable amount of variance in forgiveness (*R2* = .428). Expressions of remorse (or not) predicts attributions of behavioral stability, which suggests that expressions of remorse by a transgressor leads the wronged party to believe the transgression is less likely to happen again in the future. In support of hypothesis 4c, attributions of behavioral stability predict both feelings of empathy and forgiveness, so believing the transgression was less likely to happen in the future was related to increased feelings of empathy and willingness to forgive. Feelings of empathy also predict willingness to forgive. Finally, an expression of remorse also directly predicts forgiveness (see Figure 1).

We tested an alternative model to the one we hypothesized because it could be that an alternative model fit the data equally well (e.g. MacCallum & Austin, 2000). We explored the possibility that emotional empathy could precede attributions of behavioral stability. This model trades the positions of stability and empathy, which would mean that expressions of remorse predict empathetic feelings for the transgressor in turn predicting stability. This model predicts that empathy would predict willingness to forgive as a direct path and indirectly through stability. This model did not have good fit, 2 (1, *N* = 102) = 11.3, *p* < .05, SRMR = .07, CFI = .909, RMSEA = .317 (90% confidence limits .169, .495), AIC = 623. Out of all the measures only the SRMR met the standard for good fit and the AIC had a higher value in the empathy first model indicating a worse fit than our hypothesized model.

**Mediation Analysis.** We tested the three related predictions made in the fourth hypothesis using Hayes (2013) Process Macro. Hypotheses 4b and 4c were tested with model 4 and the serial mediation predicted in hypothesis 4a was tested with model 6. The expression of remorse (or not) affected emotional empathy through stability (Indirect Effect = -.35, SE = .10, 95% CI, -.18, -.58) in support of hypothesis 4b. This suggests that the effect of expressing remorse following a transgression on feelings of empathy operates through the mechanism of attributions of behavioral stability. Stability affected forgiveness through emotional empathy (Indirect Effect = -.11, SE = .05, 95% CI, -.02, -.23) in support of hypothesis 4c, which indicates emotional empathy may be one mechanism by which attributions of behavioral stability may lead to willingness to forgive. Finally, in support of hypothesis 4a the serial mediation effect of an expression of remorse (or not) on willingness to forgive through attributions of behavioral stability and emotional empathy was significant (Indirect Effect = -.07, SE = .04, 95% CI, -.02, -.20). With both mediators entered into model 6 the effect of expressions of remorse on forgiveness through stability was significant (Indirect Effect = -.34, SE = .09, 95% CI, -.18, -.57) while the same effect through empathy failed to reach significance (Indirect Effect = -.02, SE = .03, 95% CI, -.10, .03). These results taken together with the path analysis provides substantial support to an integrated attribution and empathy model of the apology to forgiveness relationship.

**Discussion**

The study described here employs an experimental manipulation of remorse utilizing the double blind method with random assignment. To simulate a transgression a computer-facilitated interaction between two strangers (actually a participant and computer program) lead to one partner (the computer program) cheating at a game causing the actual participant to lose. This was followed by confession of guilt with a remorseful apology or not. The purpose of this study was to test the Davis and Gold (2011) integrated model of forgiveness in an experimental context. The Davis and Gold (2011) model proposes that to better understand the apology/forgiveness process both attributional stability and empathy must be part of the model. In their model an apology first affects judgments of stability, and that judgment influences forgiveness directly and through empathy. Thus, the effect of an apology on forgiveness is always mediated by stability and empathy. As theirs was not an experiment, they were not able to draw causal conclusions.

The results found in the current study were similar to those found in Davis & Gold (2011), however because this was an experiment causal conclusions are warranted. Thus the results indicate that a remorseful apology (or not) influences a judgment of stability, which then determines the level of forgiveness directly and through empathy. In an effective apology, the perception of remorse causes the participant to judge an action as less likely to occur in the future. Judging the action less probable in the future increases the amount of forgiveness the participant is likely to grant. In addition, judging an action less likely to occur in the future also increases the amount of empathy the participant feels for the transgressor, and this increase in empathy also causes an increase in forgiveness. Additionally, and not found with Davis and Gold (2011), there was a direct path from the apology condition to forgiveness.

In a series of scenario studies, Gold and Weiner (2000) found that in the context of a confession a remorseful apology was necessary for the confession to result in forgiveness. This was because the perceived remorse reduced judgments of attributional stability, which then made forgiveness more likely. At the time, this was a unique finding as previously forgiveness researchers had focused on empathy for the transgressor as the important intervening mechanism (e.g., (McCullough, et al., 2003; McCullough, et al, 1997). Davis and Gold (2011) in a non-experimental study (described above) created an integrated model of forgiveness which showed that both stability and empathy were important mechanisms. Here we performed an experimental study which validates the Davis and Gold (2011) model.

In this study and consistent with Davis and Gold (2011), a cognitive judgment of stability precedes feelings of empathy which then influences forgiveness. Only once this cognitive judgment is made does empathy come into play. Here we found that stability also influences forgiveness independently of empathy. This implies that for forgiveness to occur, it is critical for the transgressor to convince the harmed party that they will not do it again. In our study we manipulated stability through (in our opinion) rather low impact expressions of remorse or not. Clearly, there are other more impactful means available to a transgressor by which to manipulate judgments of stability other than a few words expressing remorse in a text message. For example, we might expect stronger effects from in-person promises, contracts, crying, pleading, voluntary forfeitures of either time, money, or other means. There is the possibility that these, along with verbal expressions of remorse, would increase the effectiveness of an apology. However, the fact that a minimal expression of remorse transmitted through a text message by a simulated anonymous stranger had significant effects on forgiveness, both directly from stability and from stability thru empathy, underscores the importance of stability in the forgiveness process.

Unlike Davis and Gold (2011) and much other work on forgiveness, here we examined the forgiveness process utilizing strangers, although technically the “other person” was a computer program not an actual stranger. This is an important distinction because as we noted earlier, much if not most of human interactions are not between those in a close relationship. Eaton and Struthers (2006) say that the associations between responsibility, repentance, sympathy, and forgiveness are constant across interpersonal relationships, and when taken within the context of previous forgiveness research, the results presented here are generally consistent with that. However one difference in our data is that there is a direct path from a remorseful apology to forgiveness. This may indicate that with strangers, an indication of remorse is important, but stability and empathy are not the only factors that lead to forgiveness. What those other factor(s) may be remains open to investigation. Future research might determine this, as well as more strongly manipulating both stability and empathy to better explore their effects on forgiveness.

The data presented here seem to emphasize the importance of judgments of stability when forgiving strangers. Perhaps stability judgments assume special importance when interacting with a stranger. From an evolutionary and common sense perspective, this domain specific explanation seems to be the most reasonable. In terms of individual and group survival, if different strategies have more successfully conferred genetic success depending on the specific social contexts across evolutionary history, the decision-making process for forgiveness should be domain specific (Buss, 1998). Within the context of a brief interaction with a stranger, it appears that utilitarian goals of future interactions may be of the utmost importance. In a close relationship, the dynamics and needs are different. Typically close romantic relationships are sustained in part by feelings of tenderness, sympathy, and empathy for one’s partner. Though one can feel empathy for a stranger (Batson, 1987, 1991; 1998), empathy is more typically found in close relationships (McCullough et al, 1997, 1998). In addition because of dependence of children on adults for survival, successfully seeking forgiveness within the context of close relationships has been essential across evolutionary history (Gold & Davis, 2005). Thus in close relationships empathetically mediated forgiveness may lead to more forgiveness than strictly utilitarian decisions.

**Limitations**

The in-group/out-group manipulation failed. Perhaps this is because before the minimal group manipulation (dot estimation task), Experimenter 1 left the participant’s room and then came back indicating the other person wished to co-operate in the game. By indicating cooperation, a de facto in-group of game partners may have been created, an in-group that a simple dot estimation task could not reverse. If so, there would be no out-group with which to make a comparison. There is a differential dropout rate that leaves open the possibility that there was a form of self-selection happening. However, participants who failed the manipulation check did not differ across condition and they did differ from other participants in their interpretation of the fairness of the game. Perhaps those in the no remorse condition were more likely to think that no transgression had taken place because they had an expectation that following a transgression the offending party would express some form of remorse. Finally, this was a laboratory experiment. As such, it has all of the limitations associated with a laboratory study on real world behaviors. Yet because the data so closely parallel other previous studies (Davis & Gold, 2011; Gold and Weiner, 2000), we can have some confidence in the results.

**Conclusion and future directions**

Both seeking and obtaining forgiveness is a crucial part of human society (Brown, et al., 2008; Davis & Gold, 2011; McCullough, et al, 2003; McCullough, et al, 1997. While supporting both stability and empathy as mechanisms that lead to forgiveness, this study also demonstrates that it is necessary to consider the importance of social context and the nature of the relationship when examining forgiveness. It may be that it is the depth of the relationship influencing which factors determine forgiveness. Different contextual scenarios would add to our understanding of the mechanisms behind forgiving others.

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