



Exploring the psychological processes underlying interpersonal forgiveness: The superiority of motivated reasoning over empathy☆



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ABSTRACT

When, why, and how does interpersonal forgiveness occur? These questions have generated a wealth of findings, from which have emerged two broad theoretical perspectives by which to understand the forgiveness process. One perspective suggests that empathy underlies forgiveness, whereas the other suggests that motivated reasoning underlies forgiveness. Of note is that the two models have not been directly tested against one another. This lack of comparison between the models represents an important barrier to a fuller and richer understanding of the nature of forgiveness. The present research addresses this gap. To provide a test of the two perspectives, we first synthesize and link prior research associated with motivated reasoning to advance a more general model of motivated reasoning. This model hypothesizes that relationship closeness leads to a desire to maintain the relationship, this desire leads to motivated reasoning, and this motivation leads to interpersonal forgiveness. We then compare the relative ability of the two perspectives to predict forgiveness when controlling for one another. When estimated simultaneously, the model of motivated interpersonal forgiveness significantly predicts forgiveness, whereas the empathy model does not. The superiority of the model of motivated interpersonal forgiveness replicates across three studies.

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The study of forgiveness has flourished over the past two decades. Insights from this research are plentiful and important. Forgiveness provides the crucial mechanism by which relationships are able to be maintained following interpersonal betrayals, transgressions, and disappointments (e.g., Fincham, Hall, & Beach, 2005; Worthington, 1998). In addition to these interpersonal benefits, forgiveness is also associated with psychological benefits such as feelings of well-being (e.g., Karremans, Van Lange, Ouwerkerk, & Kluwer, 2003) and physiological

benefits such as decreased blood pressure for both victim and perpetrator (Hannon, Finkel, Kumashiro, & Rusbult, 2012), greater health resilience (Worthington & Scherer, 2004), and even increased longevity (e.g., Toussaint, Owen, & Cheadle, 2012).

1. Calls for theory and clarification

What is known of when, why, and how interpersonal forgiveness emerges? Though seemingly a simple question, a clear answer has been elusive. For example, Fehr, Gelfand, and Nag (2010) conducted a meta-analysis to examine the correlates of forgiveness. From this analysis, an array of variables was identified that consistently predict forgiveness. Fehr et al. grouped the variables into three categories; constraints (relationship closeness), cognitions (sense-making), and affect (e.g., empathy, anger). This list of variables and categories raised the important question of their theoretical interrelationships with forgiveness. Fehr et al. (2010) concluded that “future research in turn should seek to understand and model these weightings and interrelationships... Do cognitions, affect, and constraints exhibit independent effects on forgiveness, or is one class of factors broadly mediated by another?” (p. 908; see also Strelan & Covic, 2006; Fincham, Hall, & Beach, 2006).

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A review of the literature reveals that there exist two dominant theoretical perspectives as to the psychological processes underlying forgiveness. One of these perspectives proposes that empathy is of fundamental importance to forgiveness, whereas the other proposes that motivated reasoning is of fundamental importance. Of note is that how close the victim feels to the transgressor has been found to be a key antecedent in both perspectives. Relationship closeness influences both empathy and motivated reasoning, as well as forgiveness.¹

Of theoretical importance is that these perspectives have existed with no research comparing the relative ability of the two to predict forgiveness. This lack of comparison represents a serious and important barrier to a fuller and richer understanding of when, why, and how forgiveness arises. And such comparison motivates this research.

2. The empathy model of interpersonal forgiveness

McCullough and colleagues provided two of the earliest and most highly cited empirical investigations into the processes underlying interpersonal forgiveness (McCullough, Worthington, & Rachal, 1997; McCullough et al., 1998). They argue that forgiveness is inextricably linked to empathy. Forgiveness per se is conceptualized as “an empathy-motivated set of motivational changes” (McCullough et al., 1997, p. 328). At the most basic, this perspective proposes that empathy is one of the “most important mediators of forgiving. Thus, although some social-cognitive, offense-level, relationship-level, and personality-level variables might be associated with forgiving, we hypothesize that the associations of such variables with forgiving tend to be relatively small after controlling for empathy” (McCullough et al., 1998, p. 1589). That is, when all is said and done, it is empathy that facilitates and governs forgiveness. And when empathy is accounted for, other variables associated with forgiveness (such as motivated reasoning) will fall away, leaving empathy as the principal mediator of forgiveness.

3. Motivated reasoning and interpersonal forgiveness

In parallel, a wealth of research has found that motivated thinking underlies forgiveness. This research has not, however, been organized into a specific model. In order to test the two perspectives, it is first helpful to more clearly articulate a model of motivated thinking. To accomplish this, we synthesize and link relevant findings to build a more general model of forgiveness based upon motivated reasoning. To do so, we rely upon the seminal paper on interpersonal forgiveness by Finkel, Rusbult, Kumashiro, and Hannon (2002).

Finkel et al. (2002) explored the influence of commitment on forgiveness. They hypothesized and found that commitment is comprised of three distinct components; psychological attachment (relationship closeness), intent to persist in the relationship, and long-term orientation.² Finkel et al. (2002) investigated which of these three components uniquely predict forgiveness. When the influence of each was estimated individually, both relationship closeness and intent to persist were significant, whereas long-term

orientation was not (and as such, is not discussed further). When the influence of both relationship closeness and intent to persist were simultaneously estimated, the influence of intent to persist remained significant whereas the influence of relationship closeness was reduced to non-significance. Such a set of estimations indicates that intent to persist mediates the influence of relationship closeness on forgiveness. Thus, relationship closeness may engender forgiveness precisely because of one's desire to maintain the relationship. That is, if relationship closeness leads one to desire to maintain the relationship, then such desire may be the reason why relationship closeness leads to forgiveness. We adopt the term “desire to maintain the relationship,” rather than intent to persist, in order to emphasize the motivational nature of the construct.

Upon consideration, one wonders: *How* would such desire lead to forgiveness? We propose that although individuals may forgive in order to satisfy their desire to maintain the relationship, such forgiveness requires self-justification (Aronson, 1969). When someone with whom one has a close relationship transgresses, a state of dissonance is created: It causes internal conflict to feel close to a person who has acted in a hurtful manner (Heider, 1958). The fundamental finding of dissonance research is that individuals strive to reduce such unpleasant feelings (Festinger, 1962), most often in order to justify oneself to oneself (Stone, Wiegand, Cooper, & Aronson, 1997). Such reduction comes about through motivated reasoning. Although different researchers have used different names, conceptualizations, and measures of motivated reasoning, all rest upon the notion that individuals are able to interpret, frame, distort, construe (etc.) information in a manner such that it can be understood to be consistent with their desired outcome (Kunda, 1990). As such, it is likely that motivated reasoning plays a crucial role in reducing feelings of dissonance when individuals maintain relationships with those who have transgressed.

And indeed, research has provided support for the role of motivated reasoning in forgiveness.³ In their seminal 2002 paper, Finkel et al. found that motivated reasoning partially mediated the influence of commitment (which includes relationship closeness and desire to maintain the relationship) on forgiveness. Finkel et al. used attributions as a measure of motivated reasoning. Use of attributions is widely used to conceptualize and measure motivated reasoning in interpersonal forgiveness (Bradbury & Fincham, 1990, for a comprehensive literature review; and Fletcher & Kerr, 2010, for a meta-analysis). Gold and Weiner (2000) investigated the role of attributions following transgressions and found that “one of the main properties that distinguishes the causes (attributions) of a transgression is its stability” (p. 292). They reasoned that attributions allow a victim to forecast future behavior. Within the context of attributions following transgressions, such inferences of stability allow a victim to predict whether they will be harmed again.

Interpersonal research suggests that motivated reasoning can also include partner perceptions as part of the process by which sense is made of an incident. An example is offered by Hook et al. (2015), who assessed a victim's perception of the transgressor, and inferred motivated reasoning from the extent to which the transgressor was seen in a negative light. Though they did not examine mediation, they found both that 1) relationship closeness influenced motivated reasoning such that closeness led to the transgressor being seen less negatively, and 2) how the transgressor was perceived influenced forgiveness such that being perceived less negatively led to increased forgiveness.

Work by Murray and Holmes similarly uses perception of a partner as a process of motivated reasoning. Murray and Holmes (1993, 1997,

¹ The finding that relationship closeness influences forgiveness is robust. The more committed (e.g., Finkel et al., 2002; Tran & Simpson, 2009), satisfied (e.g., Allemand, Ambert, Zimprich, & Fincham, 2007), trusting (e.g., Rempel, Ross, & Holmes, 2001), and connected/close (e.g., McCullough et al., 1998) a relationship, the more likely one is to forgive a transgression by that partner.

² Psychological attachment represents the extent to which one feels connected to another. Intent to persist represents the extent to which one wishes and intends to maintain the relationship. Long term orientation represents the extent to which one considers the long term consequences of decisions for the relationship (Agnew, Van Lange, Rusbult, & Langston, 1998, p. 940).

³ The results of motivated reasoning within the forgiveness literature are somewhat mixed. These results are considered in the General Discussion.

1999) find that individuals are able to construct construals of their partners in a manner that transforms the meaning of negative events and behaviors into positive narratives. “Individuals were able to weave even the most seemingly compelling evidence of negativity into stories supporting their desired, positive conclusions” (Murray & Holmes, 1993, p. 719). Murray and Holmes (1997, 1999) refer to this process as “positive illusions”. Positive illusions lead to subsequent closer and more satisfied relationships, and conversely, relationship closeness leads to more positive illusions (Murray & Holmes, 1997). And these positive illusions lead to greater relationship resilience, a process akin to forgiveness. When considered together, the Hook et al. (2015) and work by Murray and Holmes suggests that how a transgressor is perceived by a victim is an important aspect of motivated reasoning. Note that both attributions and perceptions of the transgressor are consistent with Fehr et al.’s meta-analysis in which they find that a cognitive component, which they label sense-making, influences forgiveness. We suggest that sense-making is most likely the result of or influenced by motivated reasoning.

4. The model of motivated interpersonal forgiveness

Recall that Finkel et al. (2002) found both that 1) relationship closeness leads to desire to maintain the relationship, which leads to forgiveness and 2) commitment (which includes relationship closeness and desire to maintain the relationship) leads to motivated reasoning, which leads to forgiveness. We develop a model of motivated

interpersonal forgiveness by synthesizing and linking these two findings. We hypothesize that 1) relationship closeness leads to a desire to maintain the relationship, 2) desire to maintain the relationship leads to motivated reasoning, and 3) motivated reasoning leads to interpersonal forgiveness. Such a model addresses *when* (close interpersonal relationships), *why* (desire to maintain the relationship), and *how* (motivated reasoning) interpersonal forgiveness may emerge. This model is depicted in panel a of Fig. 1.

To examine this model, we simultaneously estimate a combination of three possible mediational paths to explore the influence of relationship closeness on forgiveness. It is possible that desire to maintain the relationship mediates independently of motivated reasoning, as represented in panel b of Fig. 1. It is also possible that motivated reasoning mediates independently of desire to maintain the relationship, as represented in panel c of Fig. 1. And it is possible that, as predicted, the influence of relationship closeness on forgiveness is sequentially mediated, such that the desire to maintain the relationship leads to motivated reasoning, as represented in panel a of Fig. 1. This analysis can result in a number of different results, in which none, one, or more than one, mediational pattern(s) emerge as significant, and as such, allows for a test of the model.

5. Model comparison

To compare the two models, we introduce empathy as the most proximal mediator of forgiveness, as suggested by McCullough et al. (McCullough et al., 1998, p. 1599). This model is depicted in panel a of

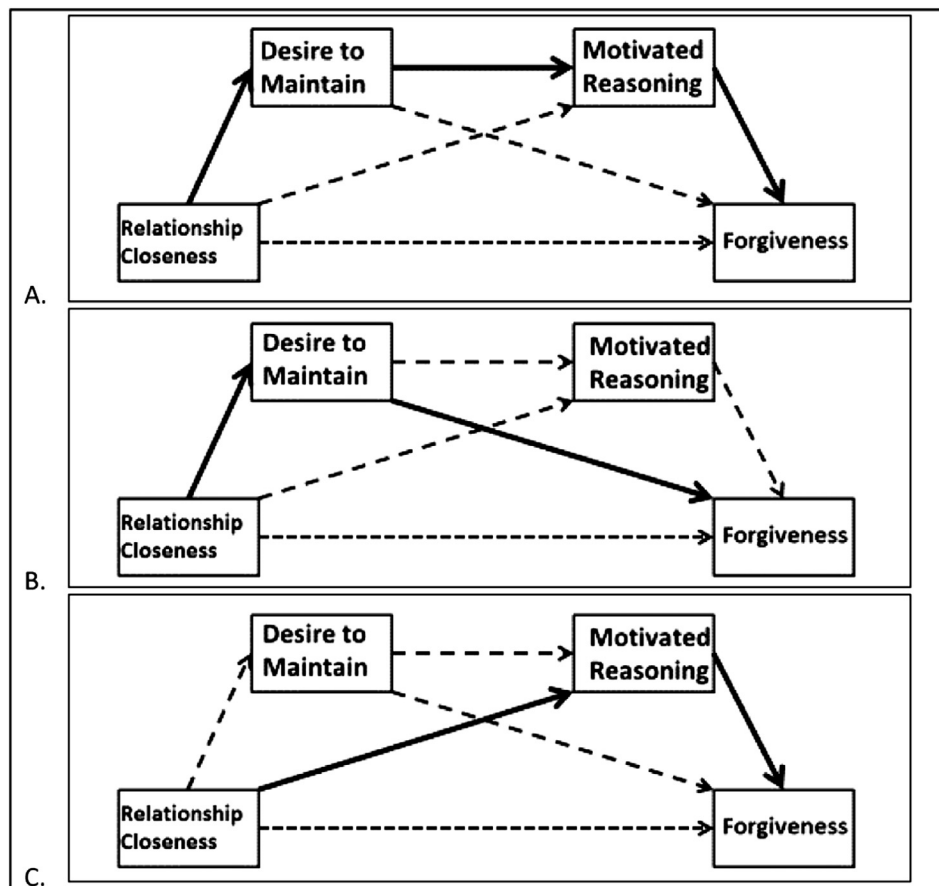


Fig. 1. Empirical estimation of the model of motivated interpersonal forgiveness. Panels: (a) sequential mediation by desire to maintain the relationship through its influence on motivated reasoning, (b) mediation by desire to maintain the relationship independent of motivated reasoning, and (c) mediation by motivated reasoning independent of desire to maintain the relationship.

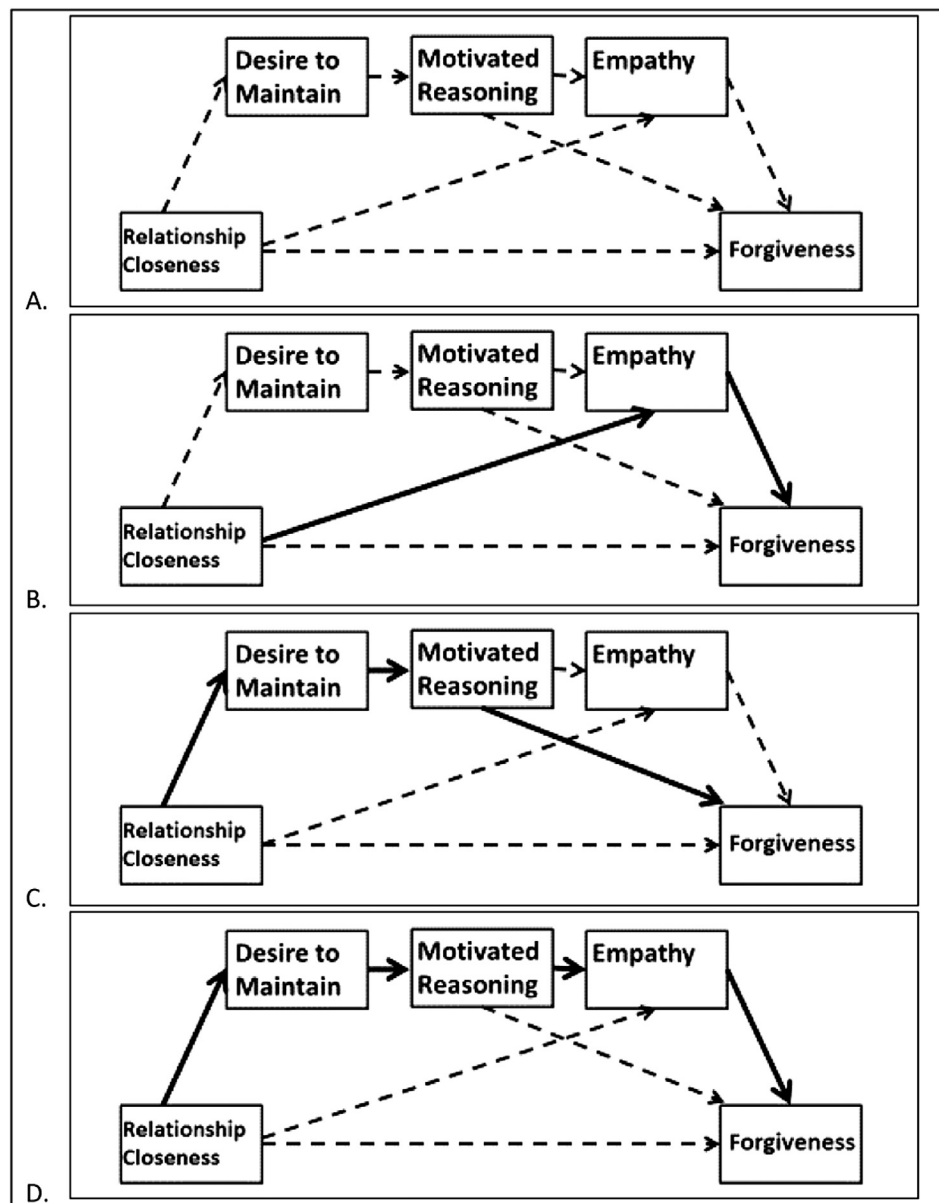


Fig. 2. Model Comparison with empathy as most proximal mediator of forgiveness. Panels: (a) represents the model comparison overview, (b) represents results in which empathy mediates forgiveness whereas the model of motivated interpersonal forgiveness does not, (c) represents results in which the model of motivated interpersonal forgiveness mediates forgiveness whereas empathy does not, and (d) represents results in which both mediate forgiveness.

Fig. 2.⁴ Support that empathy underlies the influence of relationship closeness on forgiveness, and the model of motivated interpersonal forgiveness does not, would be consistent with the mediational pattern shown in panel b of Fig. 2. Support that the model of motivated interpersonal forgiveness underlies forgiveness, and that empathy does not, would be consistent with the pattern shown in panel c of Fig. 2. And support that both models underlie forgiveness would be consistent with the pattern shown in panel d of Fig. 2.

⁴ In all studies, we also explored an alternative approach to modeling empathy's influence on forgiveness. Specifically, we introduced empathy as an independent predictor of forgiveness. That is, we simultaneously estimated the model of motivated interpersonal forgiveness while adding an independent influence of empathy on forgiveness. The results using this approach yielded results equivalent to those using empathy as the most proximal mediator. As such, we report the results only for the empathy as the most proximal mediator estimations.

6. Studies

We conducted three studies. Study 1 elicits a specific transgression by use of autobiographical recall, with the goals of providing an initial test of the model of motivated interpersonal forgiveness and comparison of this model to the empathy model of forgiveness. Study 2 uses a hypothetical scenario, with the goals of providing a test of the complete model of motivated interpersonal forgiveness, and comparison of this model to the empathy model of forgiveness. Study 3 relies upon autobiographical recall in order to replicate Study 2.

6.1. Study 1

Note that all, save one, paths of the model of motivated interpersonal forgiveness have received prior empirical support. The untested link is the portion of the model in which the influence of desire to maintain

the relationship on forgiveness is mediated by motivated reasoning. We designed Study 1 in order to examine this proposed relationship. In order to compare the two models, we also included a measure of empathy.

6.1.1. Method

6.1.1.1. Participants and procedure. Fifty-five undergraduate students participated in exchange for partial fulfillment of course credit.⁵ Participants were instructed to recall and describe an interpersonal interaction in which they were transgressed. Specifically, participants read, “Sometimes people we know let us down. For this study, we would like you to remember a time that a person failed you. Please recall a specific incident when a person hurt and/or disappointed you.” Participants then answered questions designed to assess: desire to maintain the relationship (DTM), motivated reasoning (MR), empathy (EMP), and forgiveness (F).⁶

6.1.1.2. Desire to maintain the relationship. Three items were used to measure desire to maintain the relationship; “How motivated were you to restore your relationship with this person,” “I would have been really sad if I stopped spending time with this person,” both anchored with zero equal to “not at all” and ten equal to “completely;” and “I intended to continue interacting with this person,” anchored with zero equal to “strongly disagree” and ten equal to “strongly agree” (Finkel et al., 2002; see also Arriaga & Agnew, 2001). These items were combined in order to create one measure ($\alpha = 0.90$). Note that the three items reflect 1) motivational, 2) emotional, and 3) intentional components. Results using just the motivational measure provide statistically equivalent results to those obtained using all three.

6.1.1.3. Motivated reasoning. Recall that both Murray and Holmes (1993, 1997, 1999) and Hook et al. (2015) found that the perception of the transgressor reflected motivated reasoning. To assess this aspect of motivated reasoning, participants were asked, “To what extent did you see this person in a positive light?” Recall that work by Weiner (e.g., Gold & Weiner, 2000; see also, Lemay & Venaglia, 2016) found that inference of stability is of key importance following transgressions: In short, a victim wishes to know whether harm will occur again in the future (Weiner, 1968). To assess this aspect of motivated reasoning, participants were asked “To what extent were you positive this was a onetime mistake and wouldn’t happen again?” and “To what extent did you believe that the next time you interacted with this person, they would live up to your expectations?” Relatedly, participants were asked “To what extent did you hope to just put this incident behind you?” These items were combined in order to create one measure ($\alpha = 0.80$).

6.1.1.4. Empathy. Empathy was measured using one item, “I felt empathetic towards the person following the incident,” assessed by an 11-point scale anchored with zero equal to “not at all” and ten equal to “completely.”

6.1.1.5. Forgiveness. Forgiveness was measured by the single item, “I have forgiven this person following this incident,” assessed by an 11-point scale anchored with zero equal to “not at all” and ten equal to “completely.”⁷

⁵ For this, and all studies, sample size was determined prior to data collection, and no additional data were collected following analyses.

⁶ Relationship closeness was assessed. However, the item was phrased such as to indicate post-, rather than pre-transgression closeness. As such, it is not included in the model.

⁷ For this, and all studies, participants completed measures not reported in the present manuscript. These measures were included to address questions outside of the scope of the present paper.

Table 1
Correlations among constructs, Study 1.

Factor		Mean	Std. dev	1	2	3	4
1	DTM	5.41	3.15	–			
2	MR	4.81	2.54	0.79	–		
3	EMP	3.15	2.79	0.19	0.25	–	
4	F	6.11	3.15	0.55	0.67	0.30	–

6.1.2. Results

6.1.2.1. Independent predictors of forgiveness. Forgiveness (F) was regressed on desire to maintain the relationship (DTM), motivated reasoning (MR), and empathy (EMP). Replicating the meta-analysis of Fehr et al. (2010) and empirical results of others, all three significantly predicted forgiveness: $b = 0.55$, $t(53) = 4.9$, $p < 0.0001$ (DTM); $b = 0.83$, $t(53) = 6.5$, $p < 0.0001$ (MR); $b = 0.34$, $t(53) = 2.3$, $p < 0.03$ (EMP). The correlations among F, DTM, MR, and EMP are presented in Table 1.

6.1.2.2. Model analysis strategy. To estimate all mediation models, we employed bootstrap OLS regression analyses (Hayes, 2013).⁸ The results of such an analysis produce an upper and lower confidence interval for each of the possible mediational paths. Paths in which the confidence intervals do not include zero indicate that the path is significant. The confidence intervals for all possible paths are included in tables. And for ease of representation, the significant paths are designated in bold in both tables and figures.

6.1.2.3. Estimation of the model of motivated interpersonal forgiveness. We tested whether motivated reasoning (MR) mediated the influence of desire to maintain the relationship (DTM) on forgiveness (F). The results supported this hypothesized relationship in that the confidence intervals for the mediational path testing $DTM \rightarrow MR \rightarrow F$ did not include zero (0.16, 0.69), and as such is significant. In contrast, the confidence intervals for the path testing $DTM \rightarrow F$ did include zero (–0.25, 0.41), and as such is not significant. These results are presented in panels a of Fig. 3 and Table 2.

6.1.2.4. Comparison of the empathy and motivated reasoning models. To compare the empathy model of forgiveness to the model of motivated interpersonal forgiveness, we estimated a model in which $DTM \rightarrow MR \rightarrow EMP \rightarrow F$. The results revealed that the model of motivated interpersonal forgiveness mediated forgiveness, whereas empathy did not. Specifically, the confidence intervals for the mediational pattern in which $DTM \rightarrow MR \rightarrow F$ did not include zero, (0.17, 0.65), and as such is significant. In contrast, the confidence intervals for the mediational pattern in which $DTM \rightarrow MR \rightarrow EMP \rightarrow F$ did include zero (–0.02, 0.19), and as such is not significant. The results of this analysis are presented in panel b of Fig. 3. The confidence intervals for all possible mediational patterns are presented in panel b of Table 2. Inspection of the table reveals that no other mediational patterns are significant.

6.1.3. Discussion

Recall that Study One was conducted in order to 1) examine the prediction that the desire to maintain the relationship influences

⁸ For single mediator models (such as $DTM \rightarrow MR \rightarrow F$), estimations are performed using the PROCESS macro, model 4, for SAS (Hayes, 2013). For multiple mediator models (such as $DTM \rightarrow MR \rightarrow EMP \rightarrow F$), tests of multiple, sequential mediation are performed using PROCESS, model 6, for SAS (Hayes, 2013).

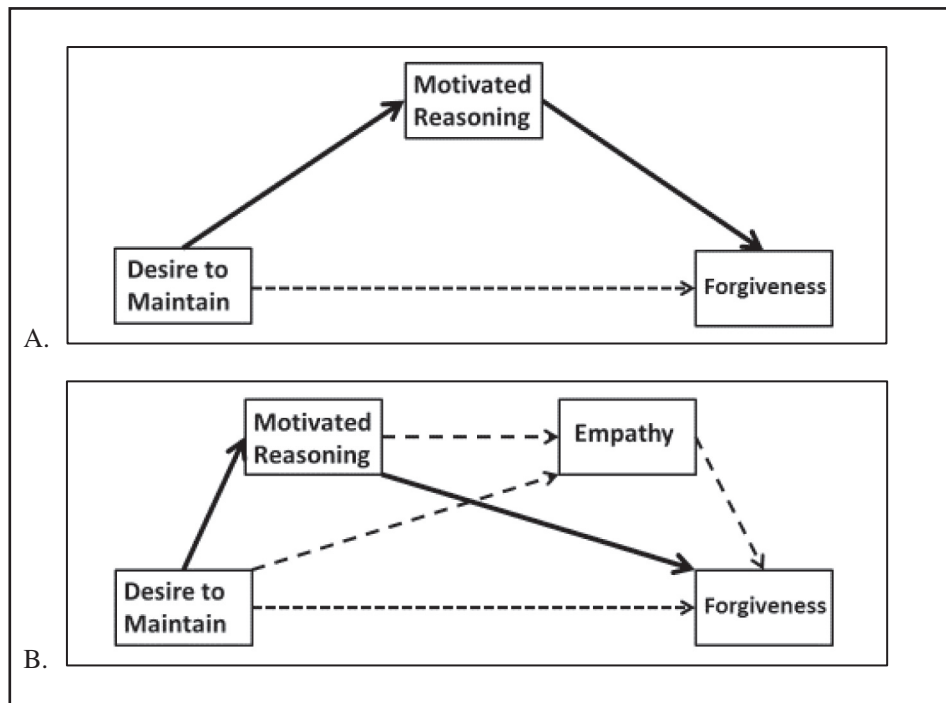


Fig. 3. Panels: (a) hitherto untested portion of the model of motivated interpersonal forgiveness and (b) estimation of model comparisons, Study 1.

motivated reasoning, which in turn influences forgiveness and 2) compare the relative abilities of the two models to predict forgiveness when estimated simultaneously. Initial support was provided for the model of motivated interpersonal forgiveness: As hypothesized, though hitherto untested, motivated reasoning did mediate the influence of desire to maintain the relationship on forgiveness. More importantly, when the two models were compared, the model of motivated interpersonal forgiveness predicted forgiveness, whereas the empathy model of forgiveness did not.

6.2. Study 2

The importance of Study 1 is that it provides a comparison of the two forgiveness models. Though Study 1 provides initial evidence of the superiority of the model of motivated interpersonal forgiveness over the empathy model of forgiveness, three concerns emerge.

First, Study 1 tests only a portion of the hypothesized model of motivated forgiveness: It does not include the influence of relationship

closeness. To address this concern, Study 2 includes relationship closeness.

Second, Study 1 relied upon autobiographical recall. Recent research (Luchies et al., 2013) has shown that relationship trust can bias memories of past transgressions. In order to address this concern, Study 2 uses a hypothetical scenario to operationalize a transgression. Using this approach affords at least three benefits; 1) the concern of biased memory is lessened, 2) participants are able to think of a person independently of, and prior to, a specific transgression, and 3) the severity of the transgression is objectively the same for all participants.

Third, note that we have conceptualized sense-making in terms of motivated reasoning. However, might the thoughts, inferences, and construals reflect a relatively “accurate” understanding of the incident? We are able to explore this alternative explanation by use of the hypothetical scenario. Since the scenario is the same for all participants, the “accurate” alternative explanation would predict that the thoughts, inferences, and construals should be similar regardless of the participants’ desire to maintain the relationship. In contrast, the motivated reasoning perspective predicts that desire to maintain the relationship should shape the thoughts, inferences, and construals that participants generate in response to the incident.

Finally, the participants of Study 1 were university students. In order to broaden the range of participants, Study 2 uses an online data collection.

6.2.1. Method

6.2.1.1. Participants and procedure. One hundred twenty volunteers participated in exchange for a nominal payment on an online survey website. Participants were randomly assigned to one of two conditions of relationship closeness; to think of either an acquaintance or a close friend. After thinking of a specific person, participants were instructed to read and imagine the scenario happening to themselves. The scenario described a situation in which another person (either friend or acquaintance) did not help as offered, and as a consequence, the participant lost

Table 2
Model estimation and comparison results, Study 1.

Mediation models	β (SE)	Bootstrap 95% CI	
		Lower CI	Upper CI
<i>Panel A (model of motivated interpersonal forgiveness)</i>			
DTM \rightarrow F (direct effect estimated with mediator)	0.08 (0.17)	−0.25	0.41
DTM \rightarrow MR \rightarrow F	0.45 (0.13)	0.16	0.69
<i>Panel B (model comparison, EMP most proximal)</i>			
DTM \rightarrow EMP \rightarrow F	−0.01 (0.04)	−0.12	0.07
DTM \rightarrow MR \rightarrow EMP \rightarrow F	0.03 (0.04)	−0.02	0.19
DTM \rightarrow MR \rightarrow F	0.44 (0.12)	0.17	0.65

Bold is significant.

a desirable opportunity.⁹ After reading the scenario, participants completed all measures.

6.2.1.2. Manipulation and measures. Relationship closeness was manipulated by instructing participants to either think of one of their close friends or instead to think about an acquaintance.¹⁰ Desire to maintain the relationship (DTM, $\alpha = 0.94$), motivated reasoning (MR, $\alpha = 0.94$), empathy (EMP) and forgiveness (F) were measured with scales identical to those used in Study 1.

6.2.2. Results

6.2.2.1. Influence of desire to maintain the relationship on motivated reasoning. Motivated reasoning (MR) was regressed on desire to maintain the relationship (DTM). Consistent with the motivated reasoning (versus accuracy) perspective, DTM did significantly influence MR, $b = 0.77$, $t(118) = 19.69$, $p < 0.0001$.

6.2.2.2. Independent predictors of forgiveness. Regression analyses were conducted in which forgiveness (F) was regressed on relationship closeness (RC), desire to maintain the relationship (DTM), motivated reasoning (MR), and empathy (EMP). Replicating the results of Study 1, as well as the meta-analysis of Fehr et al. (2010) and empirical findings of others, all four significantly predicted forgiveness: $b = 3.7$, $t(118) = 8.4$, $p < 0.0001$ (RC); $b = 0.75$, $t(118) = 15.7$, $p < 0.0001$ (DTM); $b = 0.94$, $t(118) = 21.7$, $p < 0.0001$ (MR); $b = 0.58$, $t(118) = 8.4$, $p < 0.0001$ (EMP). The correlations among F, RC, DTM, MR, and EMP are presented in Table 3.

6.2.2.3. Estimation of the model of motivated interpersonal forgiveness. To test the proposed model of motivated interpersonal forgiveness, we estimated the model in which relationship closeness (RC) served as the independent variable, forgiveness (F) as the dependent variable, desire to maintain the relationship (DTM) as the first mediator, and motivated reasoning (MR) as the second mediator, as depicted in panel a of Fig. 1.

The results supported the model in that the confidence intervals for the mediational pattern in which $RC \rightarrow DTM \rightarrow MR \rightarrow F$ did not include zero, (1.9, 3.9), and as such is significant. In contrast, all other mediational patterns did include zero, and as such are not significant. That is, when the sequential mediation of $DTM \rightarrow MR$ is accounted for, neither of the single mediation paths ($RC \rightarrow DTM \rightarrow F$ or $RC \rightarrow MR \rightarrow F$), as depicted in panels b and c of Fig. 1, emerge as significant. These results are presented in panel a of Fig. 4. The confidence intervals for all possible mediational patterns are presented in panel a of Table 4.

6.2.2.4. Comparison of the empathy and motivated reasoning models. To compare the empathy model of forgiveness to the model of motivated interpersonal forgiveness, we estimated the model represented in panel a of Fig. 2, namely, $RC \rightarrow DTM \rightarrow MR \rightarrow EMP \rightarrow F$. The results revealed that the model of motivated interpersonal forgiveness mediated forgiveness, whereas empathy did not. Specifically, the confidence intervals for the mediational pattern in which $RC \rightarrow DTM \rightarrow MR \rightarrow F$ did not include zero, (1.8, 3.9), and as such is significant. In contrast, the confidence intervals for the mediational pattern in which

Table 3
Correlations among constructs, Study 2.

Factor	Mean	Std. dev	1	2	3	4	5
1 RC	0.53	0.5	–				
2 DTM	5.6	3.3	0.73	–			
3 MR	6.1	3.0	0.66	0.88	–		
4 EMP	3.7	3.2	0.38	0.60	0.67	–	
5 F	6.8	3.1	0.61	0.82	0.89	0.61	–

Note, the scales used in Study 2 were ranged from 1 to 11. For ease of comparison with studies 1 and 3, the scales of study 2 have been converted to 0–10.

$RC \rightarrow DTM \rightarrow MR \rightarrow EMP \rightarrow F$ did include zero (–0.16, 0.28), and as such is not significant. The results of this analysis are presented in panel b of Fig. 4. The confidence intervals for all possible mediational patterns are presented in panel b of Table 4. Inspection of the table reveals that no other mediational patterns are significant.¹¹

6.2.3. Discussion

Study 2 provides the first test of the full model of motivated interpersonal forgiveness. The results support the notion that relationship closeness influences forgiveness by influencing desire to maintain the relationship, and that such desire leads to motivated reasoning, which in turn leads to forgiveness. In addition, Study 2 replicates the results of Study 1 in that the model of motivated interpersonal forgiveness predicts forgiveness, whereas the empathy model of forgiveness does not, when the two models are estimated simultaneously. Of note, since Study 2 used a hypothetical scenario, rather than autobiographical recall, the concern of biased recall is mitigated. And the result that desire to maintain the relationship influenced motivated reasoning supports the conceptualization that the thoughts, inferences, and construals are motivated, rather than accurate. It is also important to point out that the present study used, and as such generalizes to, a non-student population.

6.3. Study 3

The importance of Study 2 is that it extends and provides a replication of the results of Study 1. However, several questions and concerns remain. Recall that a strength of Study 2 is that it used a hypothetical scenario. An obvious question is whether the results of Study 2 replicate using autobiographical recall. Study 3 uses such an approach.

Another concern is the measure of several of the key constructs. Single-item measures were used for relationship closeness, empathy, and forgiveness. The possibility arises that the advantage of motivation over empathy may be attributable to differential measurement. And in fact, multiple-item measures of all of the constructs are available. For example, relationship closeness has been assessed by the psychological attachment component of Rusbult's commitment measure (Arriaga & Agnew, 2001; Finkel et al., 2002), as well as other measures, such as closeness (e.g., Clark & Lemay, 2010), satisfaction (e.g., Murray, Holmes, & Griffin, 1996), loyalty (e.g., Fehr & Harasymchuk, 2005), trust (e.g., Luchies et al., 2013), and love (e.g., Byrne, 1997). Similarly, a 4-item measure of empathy has been used by McCullough et al. (1998). And research on forgiveness has resulted in a variety of items and measures. Study 3 uses multiple-item measures of these constructs. Relationship closeness is assessed by a combination of three different approaches. The 4-item measure of empathy is used. And forgiveness is measured using a broad array of items from the interpersonal forgiveness literature.

¹¹ As noted above, the alternative estimation, in which empathy is modeled as an independent predictor of forgiveness, yielded results equivalent to those reported. This finding holds for all three studies.

⁹ The complete instructions and scenario are included in Appendix A.

¹⁰ In addition to manipulating relationship closeness, we also measured it. To do so, we used the Inclusion of the other in the Self scale (IOS; Aron, Aron, Tudor, & Nelson, 1991). The IOS is a scale comprised of seven pairs of circles which vary in the extent by which they overlap, from only the boundaries touching (coded as 1) to complete overlap (coded as 7). Participants are instructed to indicate which pair of circles best represents their relationship. We chose this scale based upon its use by McCullough et al. (1998), as well as others. Unsurprisingly, there was a significant influence of manipulated relationship closeness on the IOS, such that those who were asked to think of a close friend reported greater closeness ($M = 5.2$) than those asked to think of an acquaintance ($M = 2.1$), $F(1, 119) = 175$, $p < 0.0001$. We report the results of manipulated closeness. The results using measured closeness, however, are statistically equivalent.

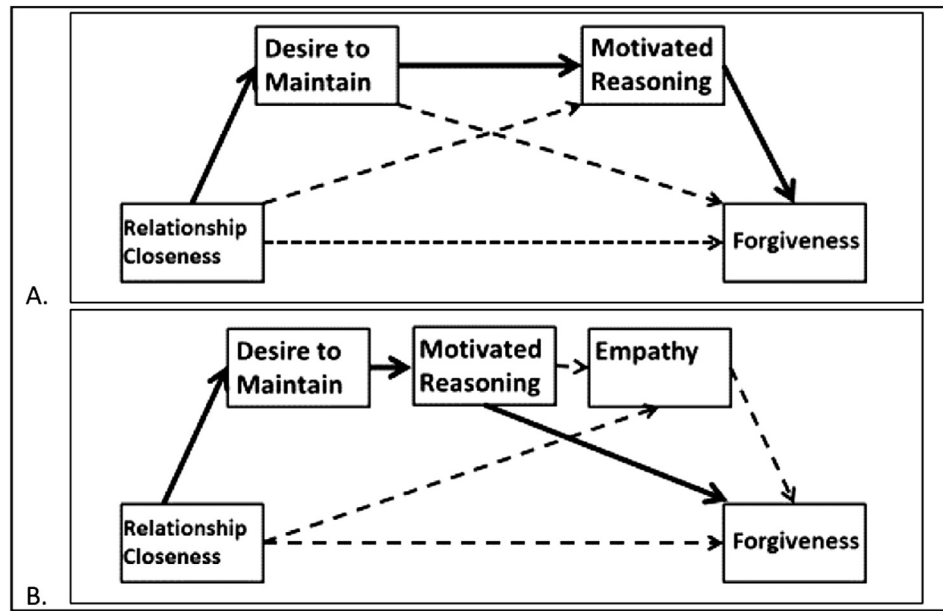


Fig. 4. Panels: (a) the model of motivated interpersonal forgiveness and (b) estimation of model comparisons, Study 2.

A question concerning measurement also can be raised for motivated reasoning. There is no standard measure of motivated reasoning upon which to rely. Indeed, past research has suggested that motivated reasoning is a multi-faceted construct, operationalized and measured in different ways (Kunda, 1990). The 4-item measure used in studies 1 and 2 was developed based upon past research and *prima facie* validity. Clearly, it is worthwhile to explore the construct in greater detail. To do so, additional items, culled from prior research, were added. These items are detailed in Table 5. Including these items provides the opportunity to conduct an exploratory factor analysis, from which it is possible to better explore the nature of motivated reasoning.

A final, and important, consideration emerges from an inspection of the interpersonal relationship literature. Most studies exploring interpersonal relationships, in general, and forgiveness, in particular, start with and are composed of a population of participants who are in a relationship (e.g., Finkel et al., 2002; Finkenauer, Wijngaards-de Meij, Reis, & Rusbult, 2010; Murray & Holmes, 1993, 1997, 1999; Murray et

al., 1996; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991; Yovetich & Rusbult, 1994). This foundation of research lays open the possibility that the processes underlying forgiveness may differ as a function of relationship status.¹² As such, we had participants indicate the status of their relationship.¹³ We report the results for those individuals still in the relationship.¹⁴

6.3.1. Method

6.3.1.1. Participants and procedure. Fifty-two undergraduate students who reported themselves to still be in a relationship with the transgressor participated in exchange for partial fulfillment of course credit. Participants completed three booklets. In the first booklet, participants were instructed to think of someone who had let them down in the past. Participants were then asked to write briefly (2–3 sentences) about the relationship prior to the transgression, after which they completed items designed to measure pre-transgression relationship closeness. In the second booklet, participants were asked to briefly write about the transgression, after which they reported their desire to maintain the relationship and motivated reasoning. In the third booklet, participants were first asked to write about how they currently felt about the person, after which they completed measures designed to measure forgiveness, and responded to whether they were still in the relationship.

Table 4
Model estimation results, Study 2.

Mediation models	β (SE)	Bootstrap 95% CI	
		Lower CI	Upper CI
<i>Panel A (model of motivated interpersonal forgiveness)</i>			
RC \rightarrow F	−0.10 (0.37)	−0.83	0.63
RC \rightarrow DTM \rightarrow F	0.81 (0.47)	−0.08	1.8
RC \rightarrow MR \rightarrow F	0.23 (0.36)	−0.43	0.98
RC \rightarrow DTM \rightarrow MR \rightarrow F	2.80 (0.51)	1.9	3.9
<i>Panel B (model comparison, EMP most proximal mediators)</i>			
RC \rightarrow F (direct effect estimated with mediators)	−0.08 (0.37)	−0.82	0.67
RC \rightarrow DTM \rightarrow F	0.79 (0.46)	−0.08	1.7
RC \rightarrow MR \rightarrow F	0.23 (0.36)	−0.43	0.95
RC \rightarrow EMP \rightarrow F	−0.03 (0.06)	−0.19	0.05
RC \rightarrow DTM \rightarrow EMP \rightarrow F	0.02 (0.05)	−0.04	0.21
RC \rightarrow MR \rightarrow EMP \rightarrow F	0.01 (0.02)	−0.01	0.08
RC \rightarrow DTM \rightarrow MR \rightarrow F	2.8 (0.55)	1.8	3.9
RC \rightarrow DTM \rightarrow MR \rightarrow EMP \rightarrow F	0.05 (0.11)	−0.16	0.28

Bold is significant.

¹² Relationship status as a possible moderator to the forgiveness process was also suggested by an unreported study. The mediational results of this study replicated the findings from studies 1–3. However, there were some anomalous results (e.g., relationship closeness and empathy did not predict forgiveness). Though relationship status was not assessed, an exploratory examination of the raw data suggested that relationship status might account for unexplained heterogeneity in the data. The Study is not reported due to the post-hoc nature of the data exploration.

¹³ Whether participants were still in relationships was not measured in Study 1. In Study 2, participants were asked to think of an acquaintance or close friend, and as such, included only current relationships.

¹⁴ Results conducted for those not still in a relationship ($n = 51$) did not reveal significant mediational patterns. These (lack of) results are driven primarily by the lack of a significant effect of relationship closeness on forgiveness. The associations among the constructs other than relationship closeness are similar to those results conducted with those still in a relationship.

Table 5
Motivated reasoning items and factor analysis, Study 3 (bold items are those used in studies 1 and 2).

Factors Items	Factor 1 Happen again	Factor 2 I am to blame	Factor 3 Importance	Factor 4 They are to blame	Factor 5 Positive light
To what extent did you think that this type of incident happens often with this person? (Reversed)	0.80152	0.07371	−0.14202	0.10592	0.22093
To what extent did you think that an experience like this would happen again in the future with this person? (Reversed)	0.76288	0.22831	−0.16009	−0.04949	0.07637
To what extent were you positive this was a onetime mistake and wouldn't happen again?	0.62843	0.28757	−0.49059	0.11593	0.29904
To what extent did you feel that this incident wasn't a big deal?	−0.34635	−0.01740	0.26184	0.34095	0.33471
I am partly to blame for the incident in which my partner upset me.	0.28435	0.96870	−0.16533	0.11665	0.04888
To what extent did you feel that this incident was your fault?	0.11001	0.64701	−0.13647	0.29046	0.20344
My partner was going through a difficult time, and that's why he/she behaved badly.	−0.23118	0.44505	−0.04633	0.25955	0.37092
To what extent did you hope to just put this incident behind you?	0.00796	0.40177	−0.06943	0.17742	0.13697
To what extent did you think twice about spending time with this person again? (Reversed)	−0.16592	−0.07125	0.84869	0.14777	0.03380
How important was this incident to your overall judgment of the person? (Reversed)	−0.07006	−0.05495	0.48536	0.41360	0.26351
My partner upset me on purpose. (Reversed)	−0.16599	−0.24953	0.38852	0.03796	0.15190
To what extent did you blame the person for this incident? (Reversed)	0.00902	0.36678	0.09562	0.98052	0.23819
To what extent did you believe that the next time you interacted with this person, they would live up to your expectations?	0.55297	0.24288	−0.11832	0.26914	0.85865
To what extent did you see this person in a positive light?	0.07562	0.30104	0.18227	0.28398	0.48761

6.3.1.2. Relationship closeness. Recall that relationship closeness was manipulated in Study 2. In the current study, relationship closeness was measured, without prompting participants to recall either close or distant transgressors. Relationship closeness was assessed by three different approaches. As in Study 2, participants completed the single-item IOS scale.

Participants also completed two other multi-item scales in addition to the IOS. The first of these multi-item scales was the commitment scale used by Rusbult and colleagues (Arriaga & Agnew, 2001), of which the psychological attachment subscale was used. These items were: "I felt very attached to our relationship – very strongly linked to this person," "It pained me to see this person suffer," "I was very affected when things were not going well in my relationship," and "In all honesty, my family and friends were more important to me than this relationship (reversed)." These items were averaged in order to create a subscale for use in assessing relationship closeness ($\alpha = 0.81$).

The second of these multi-item scales was comprised of 5 items consistent with prior interpersonal research. Those items were "How close were you with this person?" "How satisfied were you with this person?" "How loyal were you with this person?" "How much did you trust this person?" and "How much did you love this person?" These items were averaged in order to create a subscale for use in assessing relationship closeness ($\alpha = 0.89$).

All items, save the IOS, used 11-point scales anchored with zero equal to "not at all" and ten equal to either "extremely" or "completely." An overall pre-transgression relationship closeness measure was created by averaging the IOS and the 2 subscales ($\alpha = 0.88$).¹⁵

6.3.1.3. Desire to maintain the relationship. Desire to maintain the relationship was measured with the three items used in studies 1 and 2 ($\alpha = 0.81$).

6.3.1.4. Motivated reasoning. The expanded set of items used to explore motivated reasoning are found in Table 5. These items were chosen based upon a review of the interpersonal forgiveness and motivated reasoning literatures. They include the more general questions from studies 1 and 2, along with more specific attributions such as blame, intent, responsibility (one's own and the transgressor's) and perceived harm severity.

6.3.1.5. Empathy. The 4-item measure of empathy commonly employed by McCullough and colleagues was used. These items are "I was empathetic towards the person," "I was concerned for the person," "I felt moved for this person," and "I felt softhearted towards this person." The items were assessed on 11-point scales anchored with zero equal to "not at all" and ten equal to "extremely." They were averaged to create a measure of empathy ($\alpha = 0.95$).

6.3.1.6. Forgiveness. Recall that studies 1 and 2 used a single-item measure of forgiveness. Study 3 used a wide array of items. In addition to the single item response used in studies 1 and 2, we used an additional 31 items to assess forgiveness. Specifically, we used the 18 item TRIM (McCullough, Root, & Cohen, 2006), two items measuring benevolence (Fincham, Beach, & Davila, 2004), seven items measuring forgiveness and benevolence from Aquino, Tripp, and Bies (2006), and four items from Hannon, Rusbult, Finkel, and Kumashiro (2010) measuring behaviors and forgiveness. These items were averaged to create a forgiveness measure ($\alpha = 0.95$), and are presented in Appendix B.

6.3.2. Results

6.3.2.1. Factor analyses and estimation of the model of motivated interpersonal forgiveness. An exploratory factor analysis was conducted on the motivated reasoning items. The factors were estimated using maximum likelihood with an oblique (Quartimin) rotation (Fabrigar & Wegener, 2011). Five factors emerged. These factors are presented in Table 5. Note that the fifth factor, positive light, is closest to the motivated reasoning measure used in studies 1 and 2. It encompasses the two constructs used to develop the measure for studies 1 and 2: positive perception of the person and expectation of future behavior.

In order to explore the differential ability of each of the factors to serve as a mediator in the model of motivated interpersonal forgiveness, we conducted analyses akin to the analysis presented in Fig. 1. Of the five motivated reasoning factors, only the positive light factor mediated

Table 6
Correlations among constructs, Study 3.

Factor	Mean	Std. dev	1	2	3	4	5
1 RC	0	0.90	–				
2 DTM	6.0	2.48	0.64	–			
3 MR	6.5	1.48	0.47	0.51	–		
4 EMP	4.7	2.57	0.50	0.60	0.34	–	
5 F	7.7	1.53	0.40	0.35	0.45	0.36	–

¹⁵ Since the IOS is a 7-point scale and the other two measures were on 11-point scales, all three scales were standardized prior to averaging.

in a manner similar to the pattern found in studies 1 and 2. These analyses are presented in Appendix C. This finding is considered in greater detail in the General Discussion. For parsimony, the positive light factor is used for the analyses conducted for Study 3. However, analyses using the motivated reasoning measure from studies 1 and 2 provide statistically equivalent results.

6.3.2.2. Independent predictors of forgiveness. Regression analyses were conducted in which forgiveness (F) was regressed on relationship closeness (RC), desire to maintain the relationship (DTM), motivated reasoning (MR, as assessed by the positive light factor), and empathy (EMP). Replicating the results of studies 1 and 2, as well as the meta-analysis of Fehr et al. (2010) and empirical findings of others, all 4 significantly predicted forgiveness: $b = 0.68$, $t(50) = 3.1$, $p < 0.003$ (RC); $b = 0.22$, $t(50) = 2.7$, $p < 0.01$ (DTM); $b = 0.39$, $t(50) = 3.6$, $p < 0.001$ (MR); $b = 0.21$, $t(50) = 2.7$, $p < 0.009$ (EMP). The correlations among F, RC, DTM, MR, and EMP are presented in Table 6.

6.3.2.3. Estimation of the model of motivated interpersonal forgiveness. The model of motivated interpersonal forgiveness was tested in the same manner as in Study 2, albeit with the positive light factor that emerged from the factor analysis. The results supported the model in that the confidence intervals for the mediational pattern in which $RC \rightarrow DTM \rightarrow MR \rightarrow F$ did not include zero, (0.02, 0.37), and as such is significant. In contrast, all other mediational patterns did include zero, and as such are not significant. These results are depicted in panel a of Fig. 5. The confidence intervals for all possible mediational patterns are presented in panel a of Table 7. Inspection of the table reveals that no other mediational patterns are significant.

6.3.2.4. Comparison of the empathy and motivated reasoning models. To compare the empathy model of forgiveness to the model of motivated interpersonal forgiveness, we estimated the model in a similar fashion to Study 2. The results revealed that the model of motivated interpersonal forgiveness mediated forgiveness, whereas empathy did not. Specifically, the confidence intervals for the mediational pattern in which $RC \rightarrow DTM \rightarrow MR \rightarrow F$ did not include zero, (0.02, 0.38), and as such is significant. In contrast, the confidence intervals for the mediational pattern in which $RC \rightarrow DTM \rightarrow MR \rightarrow EMP \rightarrow F$ did include zero (−0.02,

Table 7
Model estimation results, Study 3.

Mediation models	β (SE)	Bootstrap 95% CI	
		Lower CI	Upper CI

<i>Panel A (model of motivated interpersonal forgiveness)</i>			
RC \rightarrow F	0.37 (0.29)	−0.20	0.94
RC \rightarrow DTM \rightarrow F	0.05 (0.18)	−0.26	0.44
RC \rightarrow MR \rightarrow F	0.13 (0.14)	−0.03	0.54
RC \rightarrow DTM \rightarrow MR \rightarrow F	0.12 (0.08)	0.02	0.37

<i>Panel B (model comparison, EMP most proximal)</i>			
RC \rightarrow F (direct effect estimated with mediators)	0.31 (0.29)	−0.26	0.89
RC \rightarrow DTM \rightarrow F	−0.04 (0.17)	−0.35	0.34
RC \rightarrow MR \rightarrow F	0.13 (0.14)	−0.03	0.55
RC \rightarrow EMP \rightarrow F	0.06 (0.07)	−0.03	0.30
RC \rightarrow DTM \rightarrow EMP \rightarrow F	0.09 (0.09)	−0.04	0.35
RC \rightarrow MR \rightarrow EMP \rightarrow F	0.00 (0.02)	−0.02	0.06
RC \rightarrow DTM \rightarrow MR \rightarrow F	0.12 (0.08)	0.02	0.38
RC \rightarrow DTM \rightarrow MR \rightarrow EMP \rightarrow F	0.00 (0.02)	−0.02	0.04

0.04), and as such is not significant. The results of this analysis are presented in panel b of Fig. 5. The confidence intervals for all possible mediational patterns are presented in panel b of Table 7. Inspection of the table reveals that no other mediational patterns are significant.

6.3.3. Discussion

Study 3 was conducted in order to address the questions and concerns associated with Study 2. Perhaps of greatest concern was the measure of the key constructs used in studies 1 and 2. Other than motivated reasoning and the desire to maintain the relationship, all constructs had been assessed with single-item measures. As such, the question arose as to whether the advantage of motivation over empathy might be attributable to differential measurement. Study 3 used multiple measures for all constructs and replicated the findings of studies 1 and 2.

A related measurement question was associated with motivated reasoning. In order to explore this construct in greater detail, Study 3 included additional items, allowing the opportunity to conduct an exploratory factor analysis. It is important to first advise caution before interpreting the analysis. The factor analysis was conducted with relatively few participants, and was not replicated across studies within the current paper. Rather, the factor analysis was conducted in order

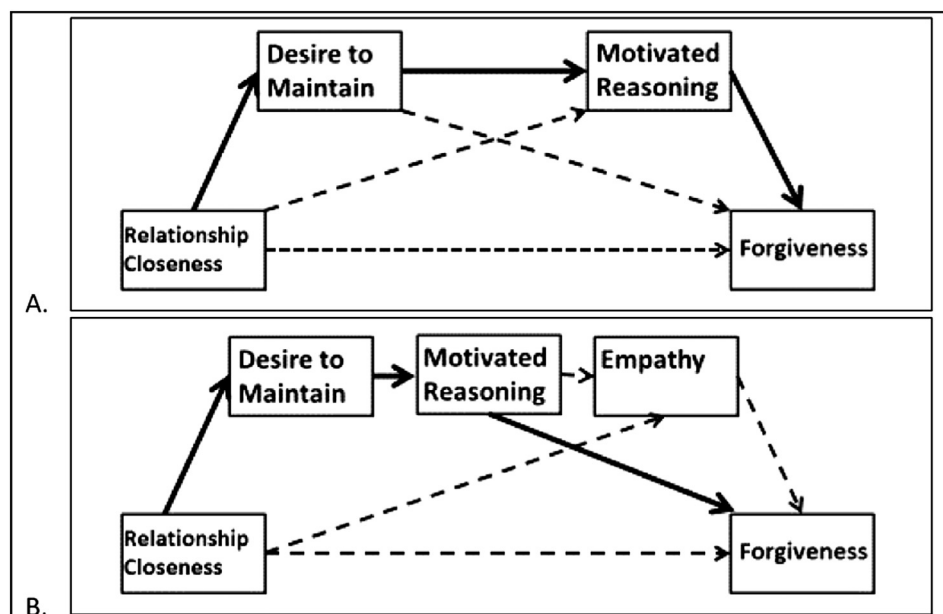


Fig. 5. Panels: (a) the model of motivated interpersonal forgiveness and (b) estimation of model comparisons, Study 3.

to explore the different possible bases upon which motivated reasoning might arise. To be clear, we do not mean to argue that the five factors uncovered definitively and robustly account for motivated reasoning. Rather, we suggest that this analysis provides an initial understanding of motivated reasoning as it relates to interpersonal forgiveness.

Given these constraints, it is still possible to remark upon two of the findings. First, as in studies 1 and 2, it is the component associated with seeing the person in a positive light in combination with expectation of future behavior that underlies the influence of motivated reasoning. Second, this differential ability of the factors to mediate the influence on forgiveness provides possible insight into reconciling past research on the role of motivated reasoning on forgiveness. Such insight is elaborated below.

6.4. General discussion

This research began with the observation that there exist two broad perspectives by which to understand the psychological processes underlying interpersonal forgiveness, and strikingly, the two had not been empirically tested against one other. To explore such a test motivated the three studies reported herein. To do so however, first required developing a more formal model of motivated reasoning and forgiveness. The results of this research yield two findings. The first finding is support for the model of motivated interpersonal forgiveness. The second finding is that the model of motivated interpersonal forgiveness is able to better predict interpersonal forgiveness than the empathy model of forgiveness.

6.4.1. The model of motivated interpersonal forgiveness

The model of motivated interpersonal forgiveness is based upon the seminal paper by Finkel et al. (2002), synthesizing and linking two of the key findings: The influence of relationship closeness on forgiveness is mediated by the desire to maintain the relationship, and the influence of commitment (which includes relationship closeness and desire to maintain the relationship) on forgiveness is mediated by motivated reasoning. As predicted from the synthesis proposed in the model of motivated interpersonal forgiveness, the influence of relationship closeness on forgiveness was sequentially mediated by the desire to maintain the relationship and motivated reasoning. Each of these two, mediating constructs, is worthy of consideration.

6.4.1.1. The power of desire. Clearly, the desire to maintain the relationship plays a powerful role within the present research. It is the construct that drives motivated reasoning, which in turn leads to forgiveness. It is possible that this power extends beyond the present research. Desire to maintain the relationship, along with motivated reasoning, may mediate the influence of relationship closeness on other important interpersonal thoughts, feelings, and behaviors beyond forgiveness. And importantly, it is possible that desire to maintain the relationship may be instigated by non-relationship closeness constructs, such as financial or psychological dependence. These possibilities could be the focus of future research.

6.4.1.2. The nature of motivated reasoning. The results of the current research are straight-forward. Motivated reasoning serves as the most proximal mediator of forgiveness out of the constructs examined herein. That is, how victims make sense of a transgression is key to forgiveness. However, the results of prior research have not been as clear. Sometimes motivated reasoning mediated the influence, sometimes only partially mediated, and sometimes not at all. Why these seemingly inconsistent results? A brief survey of select findings, in combination with the present results, provides potential insight.

The measure of motivated reasoning spans a continuum ranging from specific to general. On one end lies the relatively specific approach advanced by Menzies-Toman and Lydon (2005). They measured motivated reasoning by estimating the difference between objective and

subjective severity of a transgression. The extent to which a victim rated an offense as more severe than an independent observer was used to infer motivated reasoning. In this case, motivated reasoning did not mediate the influence of relationship closeness on forgiveness.

A more general approach has been frequently employed, in which participants are asked questions designed to assess a range of attributions, such as blame, responsibility, intent. As an example, Finkel et al. (2002) asked participants questions such as “I thought that my partner didn't try hard enough to behave in a positive manner.” In this case, motivated reasoning partially mediated the influence of relationship closeness on forgiveness.

At the most general are approaches that measure the extent to which a transgressor is perceived positively. Recall that Murray and colleagues conceptualize motivated reasoning as how much an individual is seen in a positive light. They refer to this perception as positive illusion, and find that such positive illusion consistently mediates the influence of relationship closeness on an array of interpersonal behaviors.

Hook et al. (2015) adopt a similarly general approach. They measure the extent to which a person is perceived negatively. Though Hook et al. did not test for mediation, an examination of the results reveals that their general measure is more highly associated with forgiveness ($r = 0.6$) than the more specific attributions (e.g., responsibility and blame, $r = 0.2$). These results are consistent with the present research, and especially the results of Study 3.

The features of motivated reasoning that best capture its influence in the present research are the extent to which 1) a person is seen in a positive light and 2) one believes that they will be harmed again in the future. These features are broader than the measures assessing responsibility, blame, intent, harm severity, importance, etc. Not surprisingly, the present research revealed that the general factor of positive illusion served as a mediator, whereas the other, more specific measures of motivated reasoning did not.

This dimension of specificity to generality may explain past results. General thoughts and inferences (such as seeing the person in a positive light and expectations of future behavior) are most likely the result of more specific thoughts (such as responsibility and intent). As such, the more general measure is likely to be able to capture different patterns of specific thoughts, whereas the more specific measures are not as likely to capture the general. Thus, assessing whether one is seen in a positive light and is likely to disappoint again may be a better measure of motivated reasoning than the extent to which the person intended to harm and/or is to blame. Clearly, future research could examine this possible explanation.

6.4.2. Situating the findings within broader research

One benefit of the present research is that it provides a model by which to integrate and synthesize a broad set of findings. Most clearly, it provides a framework by which to understand the many findings related to relationship closeness, motivated reasoning, empathy, and forgiveness.

6.4.2.1. Other antecedents of forgiveness. Fehr et al.'s (2010) meta-analysis provides support for the relationship of apology, rumination, negative mood, and anger to forgiveness. It is worthwhile considering how the model of motivated interpersonal forgiveness relates to these other constructs. Within the context of the present research, we propose that it may be particularly interesting to consider these constructs as they relate to motivated reasoning.

Apologies have been found to lead to forgiveness (e.g., McCullough et al., 1997, 1998; Tabak, McCullough, Luna, Bono, & Berry, 2012; but see Struthers, Eaton, Santelli, Uchiyama, & Shirvani, 2008). Note, however, that apologies can be considered as one instantiation of a broader set of possible partner responses (e.g., Rusbult & Buunk, 1993; Wieselquist, Rusbult, Foster, & Agnew, 1999). Research has shown that partner responses, such as amends, can lead to forgiveness absent explicit apology (Hannon et al., 2010). Recent research provides insight

into understanding the role of partner response from the perspective of the model of motivated interpersonal forgiveness. Lemay and Clark (2015) advance a model of motivated cognition in relationships. This model hypothesizes that how partner responses are perceived is a function of motivated reasoning. By extension to the present research, perceptions of apologies, amends, and other post-transgression behaviors are likely to be shaped by motivated reasoning.

Negative mood and anger are associated with less forgiving. One possible role of affect within the model of motivated interpersonal forgiveness is offered by Weiner's attributional theory of achievement motivation and emotion (1985). This theory posits that emotions are built upon one's understanding of a situation or incident. If this is the case, then affect is most likely to operate primarily as a consequence of motivated reasoning: The more positively a transgression is construed, the less likely that negative affect will follow.

And what of rumination? It seems plausible that the extent to which a victim has been able to make sense of the transgression, the easier it will be to stop thinking about the transgression and let the incident go. If so, rumination may be affected by motivated reasoning, such that successful motivated reasoning frees a victim from rumination.

If these perceptions of partner response (including apologies and amends), negative affect, and rumination do follow from motivated reasoning, an interesting question arises. Namely, is it that these constructs mediate the influence of motivated reasoning on forgiveness, or instead, that motivated reasoning influences forgiveness and each of these constructs simultaneously and independently? If so, then these constructs may be associated with forgiveness because of motivated reasoning. That is, their correlations with forgiveness may not indicate a causal, but instead a spurious, relationship, with motivated reasoning being the third variable. Such possibilities could be explored in future research.

6.4.2.2. Connections with evolutionary models of forgiveness. McCullough and colleagues (McCullough, Kurzban, & Tabak, 2013) have recently advanced an evolutionary model in order to explain the functional bases of both revenge and forgiveness. They posit that forgiveness is the result of two relatively independent constructs: the expectation of future harm from the transgressor and the expectation of future value from the relationship with the transgressor. They find that forgiveness is most likely to emerge when there is a low expectation of future harm from the relationship and a high expectation of future value from the relationship (Burnette, McCullough, Van Tongeren, & Davis, 2012). Within the context of the present research, expectation of future harm is conceptualized as one of the two, key components of motivated reasoning. And it seems plausible that expectation of future value from the relationship is associated with and/or the result of relationship closeness. When considered from the perspective of the model of motivated interpersonal forgiveness, then, rather than being the result of independent systems, the two are most likely related, such that expectation of future value leads to reduced expectations of future harm. This potential relationship is interesting as a possible area for future research.

6.4.2.3. The role of empathy in pro-social behavior. The current findings are consistent and dovetail with a decades-old movement away from the notion that empathy plays a unique role in pro-social behavior. In the 1980s, the role of empathy was highlighted not only in interpersonal forgiveness, but in a wide range of pro-social behavior. Empathy was hypothesized to play a key role in altruistic helping behavior (Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983), as well as other pro-social behaviors such as sharing, consideration of others, and willingness to donate (Eisenberg & Miller, 1987). Since then, a growing body of research has called the empathy hypothesis into question. Importantly, research has demonstrated that it is relationship closeness (as

measured by the IOS), rather than empathy, that leads to altruistic helping (e.g., Cialdini, Brown, Lewis, Luce, & Neuberg, 1997; see also, Galinsky, Ku, & Wang, 2005; Galinsky & Moskowitz, 2000; Goldstein, Vezich, & Shapiro, 2014). Thus, the current research can be considered to help place the interpersonal forgiveness literature more squarely within the realm of contemporary theory and research related to the role of empathy in altruism and pro-social behavior.

6.4.3. Advantages and limitations of the current research

Note that we adopted two methodological approaches. Autobiographical recall has frequently been used to explore interpersonal forgiveness (e.g. Bono, McCullough, & Root, 2008; Exline, Baumeister, Bushman, Campbell, & Finkel, 2004; Fincham et al., 2004; Kearns & Fincham, 2005; Karremans, Van Lange, & Holland, 2005; McCullough et al., 1998; McCullough, Bellah, Kilpatrick, & Johnson, 2001; Zechmeister & Romero, 2002). The advantages to using this approach are that one is able to 1) explore real world events in participants' lives, 2) study responses to actual failures, and 3) have participants recollect experienced emotions and reactions. A disadvantage to this approach, however, is that it relies on memory. Recent research (Luchies et al., 2013) has revealed that relationship closeness (as assessed by trust) can bias memories: Greater trust leads to a transgression being recalled in a manner that allows the relationship to be maintained.

Given this disadvantage, we chose to replicate with the use of a hypothetical scenario. Such an approach has also been frequently used to explore interpersonal forgiveness (e.g., Berry, Worthington, Parrott, O'Connor, & Wade, 2001; Karremans et al., 2003). The advantages to this approach are that one is able to 1) overcome the concern of biased memory, 2) assess immediate reactions to a situation, 3) equate the scenario across participants, and 4) measure relationship closeness before participants are exposed to the failure. A disadvantage is that the event did not actually happen to the participant. Importantly, it is possible that such an approach may tap individuals' naïve theories of forgiveness, rather than their forgiveness processes *per se*.

When these two methods are used in tandem, they provide an elegant solution: The strengths of one approach balance the other approaches' weaknesses, and vice-versa. Together these two methods provide convergent validity: Results that replicate across both approaches become free of the concerns associated with either approach by itself. Not surprisingly, researchers often use both approaches together (e.g., Finkel et al., 2002; Karremans et al., 2003).

We do not mean to imply, however, that the present approach has no disadvantages. Perhaps the greatest concern has to do with the sequential nature of the model of motivated interpersonal forgiveness. The model advances a specific sequential order: Relationship closeness precedes and leads to desire to maintain the relationship, such desire precedes and leads to motivated reasoning, and such motivation precedes and leads to forgiveness. Though the analytic estimations in the current research support such a sequence, convergent validity would be provided by a longitudinal study.¹⁶ Such an approach would allow measurement of the constructs across time, which would afford the opportunity to better test the sequential order hypothesized by the model (e.g., Finkel et al., 2002; Murray & Holmes, 1997).

Such a longitudinal approach would also allow for examination of whether the model can predict other related and important relationship outcomes following relationship challenges. For example, the research by Neff and Karney (2004) reveals that stressors external to the relationship (e.g., financial hardship) undermine marital quality, and that this influence is mediated by motivated reasoning.

¹⁶ Unreported analyses revealed that the order of the two mediators was important. The results when the order of desire and motivated reasoning were reversed did not reveal the sequential mediation uncovered when desire preceded motivated reasoning.

The present research suggests that this influence of stress may be moderated by desire to maintain the relationship: Those who strongly wish to maintain the relationship may construct more positive cognitive narratives and positive illusions than those whose desire is less, even in the face of hardships, analogous to transgressions. And these differences in motivated reasoning would likely lead to differences in marital quality. Other important relationship decisions and outcomes could similarly be influenced by the psychological processes explicated by the model of motivated interpersonal forgiveness. Might relationship longevity, decisions to marry, separate, divorce, have children, and purchase a home be influenced by such processes? Namely, relationship longevity and other major life transitions would seem to always involve some challenge or conflict that causes stress on the relationship in a manner similar to a transgression. The current work advances our understanding of the processes through which interpersonal forgiveness occurs. Future research could fruitfully investigate the extent to which the model generalizes beyond interpersonal forgiveness.

Appendix A

A.1. Study 2

Manipulation and Scenario (adapted from the Transgression Narrative Test of Forgiveness; Berry et al., 2001).

A.2. Study 2: complete scenario

Participants were randomly assigned to one of two conditions; to think of either an acquaintance or a close friend.

A.2.1. Close friend

First, we would like you to think of one of your best friends, a person you are extremely close with. Please think of this person and type their initials below.

A.2.2. Acquaintance

First, we would like you to think of one of your acquaintances, someone that you are not extremely close with. Please think of this person and type their initials below.

Describing the relationship, part of the manipulation:

We would like you to think about (initials of person inserted here) (the initials you entered on the last page) and write a short paragraph about your relationship with (initials of person inserted here). Please tell us how close you are to (initials of person inserted here) and how long you have known each other. And any specific memories you have about your relationship.

After thinking of a specific person, participants were instructed to read and imagine the scenario happening to themselves.

A.2.3. Scenario

Now we would like for you to carefully read the scenario below. Please take your time and really imagine this happening to you. Think about and reflect upon how you would feel and react.

You are applying for a job that you are very excited about, this could be your dream job. (Initials of person inserted here) offers to drop off your job application for you at the post office by the deadline for submission. A week later, you get a letter from the potential employer saying that your application could not be considered because it was postmarked after the deadline and they had a very strict policy about this. (Initials of person inserted here) said that he or she met an old friend, went to lunch, and lost track of time. When (initials of person inserted here) remembered the package, it was close to closing time at the post office and they would have had to rush frantically to get there; (initials of person

inserted here) decided that deadlines usually aren't that strictly enforced so they waited until the next morning to deliver the package.

Imagine how you would feel if this happened to you.

Appendix B

Item	Measures	Correlation with forgiveness
	Forgiveness	
1	Berry et al., 2001 I have forgiven this person	–
2	McCullough et al., 2006 Even though his/her actions hurt me, I have goodwill for him/her.	0.51
3	McCullough et al., 2006 I want us to bury the hatchet and move forward with our relationship.	0.59
4	McCullough et al., 2006 Despite what he/she did, I want us to have a positive relationship again.	0.60
5	McCullough et al., 2006 Although he/she hurt me, I am putting the hurts aside so we can resume our relationship.	0.38
6	McCullough et al., 2006 I have given up my hurt and resentment.	0.44
7	McCullough et al., 2006 I have released my anger so I can work on restoring our relationship to health	0.63
8	Fincham et al., 2004 It was easy to feel warmly again toward my partner	0.53
9	Fincham et al., 2004 I am able to act as positively toward my partner now as I was before it happened	0.70
10	Aquino et al., 2006 I let go of the negative feelings I had against them.	0.71
11	Aquino et al., 2006 I let go of my hate and desire for vengeance.	0.57
12	Aquino et al., 2006 I let go of my hurt and pain.	0.56
13	Aquino et al., 2006 I let go of the resentment I felt toward them.	0.68
14	Hannon et al., 2010 I became really angry (e.g., yelled, made accusations)	0.21
15	Hannon et al., 2010 I tried to get even with my partner	0.14
16	Hannon et al., 2010 I remained calm about the incident	0.06
17	Hannon et al., 2010 I tried to work things out with my partner	0.63
18	Aquino et al., 2006 I made an effort to be more friendly and concerned.	0.39
19	Aquino et al., 2006 I tried to make amends.	0.52
20	Aquino et al., 2006 I gave them back a new start, a renewed relationship.	0.57
21	McCullough et al., 2006 I am trying to keep as much distance between us as possible.	0.49
22	McCullough et al., 2006 I am living as if he/she doesn't exist, isn't around.	0.34
23	McCullough et al., 2006 I don't trust him/her.	0.48
24	McCullough et al., 2006 I am finding it difficult to act warmly toward him/her.	0.57
25	McCullough et al., 2006 I am avoiding him/her.	0.45
26	McCullough et al., 2006 I cut off the relationship with him/her.	0.41
27	McCullough et al., 2006 I withdraw from him/her.	0.40
28	McCullough et al., 2006 To what extent have you tried to forget about how the person let you down?	0.02
29	McCullough et al., 2006 I'll make him/her pay.	0.16
30	McCullough et al., 2006 I wish that something bad would happen to him/her.	0.20
31	McCullough et al., 2006 I want him/her to get what he/she deserves.	0.24
32	McCullough et al., 2006 I'm going to get even.	0.35
33	McCullough et al., 2006 I want to see him/her hurt and miserable.	0.42

Appendix C. Estimation of mediational models using the five motivated reasoning factors, Study 3.

		Bootstrap 95% CI	
	β (SE)	Lower CI	Upper CI
<i>Happen again</i>			
RC \rightarrow F (direct effect estimated with mediators)	0.49 (0.28)	−0.07	1.1
RC \rightarrow DTM \rightarrow F (M1)	0.14 (0.19)	−0.19	0.54
RC \rightarrow MR \rightarrow F (M2)	0.02 (0.11)	−0.15	0.33
RC \rightarrow DTM \rightarrow MR \rightarrow F (M1 & M2)	0.04 (0.06)	−0.07	0.20
<i>I am to blame</i>			
RC \rightarrow F (direct effect estimated with mediators)	0.53 (0.28)	−0.03	−0.03
RC \rightarrow DTM \rightarrow F (M1)	0.11 (0.19)	−0.21	0.52
RC \rightarrow MR \rightarrow F (M2)	−0.02 (0.08)	−0.23	0.13
RC \rightarrow DTM \rightarrow MR \rightarrow F (M1 & M2)	0.07 (0.07)	−0.01	0.28
<i>Importance</i>			
RC \rightarrow F (direct effect estimated with mediators)	0.66 (0.29)	0.09	1.2
RC \rightarrow DTM \rightarrow F (M1)	0.10 (0.19)	−0.23	0.52
RC \rightarrow MR \rightarrow F (M2)	−0.15 (0.12)	−0.49	0.01
RC \rightarrow DTM \rightarrow MR \rightarrow F (M1 & M2)	0.07 (0.07)	−0.01	0.30
<i>They are to blame</i>			
RC \rightarrow F (direct effect estimated with mediators)	0.52 (0.28)	−0.05	1.1
RC \rightarrow DTM \rightarrow F (M1)	0.15 (0.18)	−0.15	0.56
RC \rightarrow MR \rightarrow F (M2)	−0.01 (0.07)	−0.18	0.11
RC \rightarrow DTM \rightarrow MR \rightarrow F (M1 & M2)	0.03 (0.06)	−0.06	0.18
<i>Positive light</i>			
RC \rightarrow F (direct effect estimated with mediators)	0.37 (0.28)	−0.20	0.94
RC \rightarrow DTM \rightarrow F (M1)	0.05 (0.18)	−0.26	0.44
RC \rightarrow MR \rightarrow F (M2)	0.13 (0.14)	−0.03	0.54
RC \rightarrow DTM \rightarrow MR \rightarrow F (M1 & M2)	0.12 (0.08)	0.02	0.37

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