Forgiveness, Feeling Connected to Others, and Well-Being: Two Longitudinal Studies

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In two studies, the authors investigated the associations between interpersonal forgiveness and psychological well-being. Cross-sectional and prospective multilevel analyses demonstrated that increases in forgiveness (measured as fluctuations in individuals' avoidance, revenge, and benevolence motivations toward their transgressors) were related to within-persons increases in psychological well-being (measured as more satisfaction with life, more positive mood, less negative mood, and fewer physical symptoms). Moreover, forgiveness was more strongly linked to well-being for people who reported being closer and more committed to their partners before the transgression and for people who reported that their partners apologized and made amends for the transgression. Evidence for the reverse causal model, that increases in well-being were related to increases in forgiveness, was also found. However, changes in feelings of closeness toward the partner appeared to account for the associations of forgiveness with well-being, but not vice versa.

Keywords: *forgiveness; closeness; well-being; apology; longitudinal*

When negotiating interpersonal relationships, people experience many motives and preferences, some in service of immediate self-interest and some in service of broader relationship concerns. Sometimes, though, people's self-interested motives and preferences may not correspond to those of a given relationship partner (de Waal, 2000; Kelley & Thibault, 1978; Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). Thus, conflicts inevitably arise and challenge relationships. By forgiving each other, it appears, people are able to overcome the negative effects conflict can have on their relationships (e.g., Fincham, 2000; McCullough et al., 1998).

In our program of research (McCullough, Bono, & Root, 2007; McCullough, Fincham, & Tsang, 2003), we have conceptualized forgiveness as prosocial changes in people's transgression-related interpersonal motivations toward a transgressor. That is, when people forgive a transgressor, they become less motivated by revenge and avoidance and more motivated by benevolence toward the transgressor (McCullough et al., 1998; McCullough, Worthington, & Rachal, 1997). In cross-sectional and longitudinal studies, forgiveness has been associated with improved interpersonal relationships between the forgiver and the transgressor (Karremans & Van Lange, 2004; McCullough et al., 1998; Tsang, McCullough, & Fincham, 2006). In addition to its apparent relational benefits, forgiveness is also positively associated with psychological well-being (Brown, 2003; Freedman & Enright, 1996; Karremans, Van Lange, Ouwerkerk, & Kluwer, 2003; Poloma & Gallup, 1991). The link of forgiveness to these two sets of outcomes (relational and psychological) may be more than coincidental: Perhaps forgiveness obtains its association with psychological well-being precisely because forgiveness helps people maintain and restore close relationships (Karremans et al., 2003).

Forgiveness, Well-Being, and Social Connectedness

Maintaining supportive relationships with kin and nonkin is important for mental and physical health in the present day (Baumeister & Leary, 1995; House,

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Landis, & Umberson, 1988), and these salutary effects may mirror the crucial role that such relationships played in human evolution (Hamilton, 1964; Nesse, 2001; Trivers, 1971). The apparent link of forgiveness to psychological well-being may therefore be due to the fact that low psychological well-being can function as a type of "information" that alerts people to relational difficulties and creates motivation for improving impaired social relations. This way of thinking about the relationship of forgiveness, psychological well-being, and relational well-being is similar to the way that self-esteem can be conceptualized as an indicator of lack of social acceptance (Leary, 2004), or that loneliness can be viewed as feedback designed to prompt people to remediate the hedonic and cognitive consequences of social isolation (Cacioppo et al., 2006). Self-determination theory provides a complementary (and more proximally focused) explanation: Forgiveness might obtain its association to well-being by influencing the forgiver's perceptions of his or her relationship with the transgressor because maintaining a proper degree of connectedness to others is a fundamental psychological need (Reis, Sheldon, Gable, Roscoe, & Ryan, 2000).

Because forgiveness involves reductions of negative motivations and the re-establishment of positive motivations toward transgressors, we posit that forgiveness helps people to regain the perception that their relationships with their offenders are characterized by closeness and commitment (Tsang et al., 2006). Therefore, we propose that forgiving a relationship partner causes people to perceive that they have "reconnected" to an important source of social support and can again take advantage of the material and emotional resources that supportive social ties can confer. As a result, well-being improves.

Forgiveness, Restored Closeness, and Well-Being: A Function of Pretransgression Closeness and Transgressor Apology?

The ability of forgiveness to facilitate psychological well-being, however, may depend on the quality of relationship partner one is forgiving. Karremans and colleagues (2003) found that forgiving was more strongly associated with psychological well-being for people who forgave a relationship partner to whom they were highly committed than for people who forgave a relationship partner to whom they were not highly committed. This comports well with the theory of reciprocal altruism (Trivers, 1971) as well as with self-determination theory (Ryan & Deci, 2000), as it is relationships that are close and committed *prior to the transgression* that hold the most potential value to the forgiver. As a result, if our informational view of psychological well-being here is accurate, then it is the forgiveness of close, committed relationship partners (and the improved relationships that result) that should lead to the most dramatic improvements in psychological well-being.

In this light, factors besides the victim's degree of commitment to the transgressor are likely to be important also. One important factor to consider is the extent to which transgressors apologize and make amends for their transgressions. Ample evidence suggests that apologies can mitigate anger and yield constructive reactions to harm and forgiveness (Hodgins & Liebeskind, 2003; Ohbuchi, Kameda, & Agarie, 1989; Zechmeister, Garcia, & Romero, 2004). Apologies are among the most robust facilitators of forgiveness (e.g., McCullough et al., 1997)—an effect that may be due in part to their ability to convince victims that their transgressors possess goodwill for them (despite having previously hurt them). Thus, in the absence of an apology, forgiveness may be less conducive for psychological well-being because the relationship may still be marked by uncertainty about a transgressor's intentions toward the victim (and thus, their future value as a relationship partner). As a result of this lingering uncertainty about a transgressor's intentions toward the victim, forgiveness of an unapologetic transgressor would be less strongly related to psychological well-being.

The Current Investigation

We conducted two studies to investigate how temporary changes in forgiveness—operationalized as transient fluctuations in avoidance, revenge, and benevolence motivations (McCullough et al., 2003; McCullough et al., 2007)—are longitudinally related to well-being. Using multilevel random coefficient models (Bryk & Raudenbush, 1992; Hedeker, 2004), we sought to extend the existing insights on the relationship between forgiveness and psychological well-being in several ways. First, to date, all the work on the relationship between forgiveness and well-being has focused on individual differences between persons rather than intra-individual differences that occur within persons over time. In light of recent research demonstrating forgiveness to be a time-varying phenomenon (McCullough et al., 2003; McCullough et al., 2007), use of evidence of within-persons (rather than between-persons) associations are required to best test whether forgiveness may lead to greater well-being. Thus, we used recent methods for studying the within-persons associations among variables (Nezlek, 2001) to examine if psychological well-being is greater for people on days when they are also more forgiving than is typical for them and, insofar as it is, whether this association appears to be mediated by increased perceptions of closeness and commitment to the transgressor.

Second, we examined whether these intra-individual relationships between forgiveness and psychological well-being were stronger for people who felt relatively close

and committed to their relationship partners before the transgression (Karremans et al., 2003). Third, because research has shown that apologies foster forgiveness and reconciliation, we also investigated whether individual differences in the degree to which transgressors were perceived to apologize and make amends for their transgressions moderated the within-person associations among forgiveness, closeness vis-à-vis the transgressor, and well-being. In Study 1 we examined the concurrent associations among these variables, and in Study 2 we conducted prospective, cross-lagged analyses to examine possible causal relations among these variables.

STUDY 1

METHOD

Participants and Procedure

Participants were 115 students in undergraduate psychology courses (91 women; *M* age = 19.76, *SD* = 2.61) at Southern Methodist University. We identified individuals who had experienced a serious interpersonal transgression within the past 7 days through in-class solicitations (and a screening instrument). Qualified participants received preliminary questionnaires. After returning these questionnaires, they were scheduled to complete up to five follow-up questionnaires in the second author's laboratory, approximately every 2 weeks on the same weekday and time (ideally). They received extra course credit for participating and $20 for completing all five assessments. All participants had experienced interpersonal transgressions within the past 7 days (*M* = 4.04 days, *SD* = 1.82). Of the 115 participants, 96 completed all five visits, 5 completed four visits, 5 completed three visits, 5 completed two, and 4 completed only one. Although aspects of these data have been analyzed and reported elsewhere (McCullough et al. 2003, Study 2), this is the only article addressing the relationship of forgiveness and psychological well-being.

Measures

Interpersonal forgiveness. Participants' forgiveness toward a transgressor was measured in both the initial follow-up surveys with an 18-item version of McCullough et al.'s (1998) Transgression-Related Interpersonal Motivations (TRIM) Inventory. Participants are asked to rate on 5-point Likert-type scales how much they agree or disagree with each item. The Avoidance subscale has 7 items measuring motivation to avoid contact with a transgressor (e.g., "I live as if he/she doesn't exist, isn't around"), the Revenge subscale has 5 items measuring motivation to seek revenge (e.g., "I'll make him/her pay"), and the Benevolence subscale has 6 items measuring conciliatory motivation toward the transgressor (e.g., "Despite what he/she did, I want us to have a positive relationship again"). The subscales had adequate internal consistency and test-retest stability across all measurement occasions (i.e., alphas ranged from .85 to .95, and *r*s ranged from .54 to .93). The scale has also shown good convergent and discriminant validity (McCullough, Bellah, Kilpatrick, & Johnson, 2001; McCullough et al., 1998; McCullough et al., 2003; McCullough & Hoyt, 2002).

Perceived transgression painfulness. Participants completed a single item having them rate on a 7-point Likert-type scale how painful they perceived the transgression to be (ranging from 0 = *not painful at all* to 6 = *worst pain I ever felt*) in the initial survey.[1]

Psychological well-being. In this article, we define well-being in the hedonic tradition as a person's subjective assessment of the overall presence of pleasure and absence of pain, commonly defined as happiness, and viewed well-being as embodying satisfaction with life, experiencing positive emotions more and negative emotions less, and experiencing fewer physical symptoms (Reis et al., 2000). Psychological well-being was measured with the combination of four scales in both initial and follow-up surveys. The extent to which participants felt satisfied with their lives was measured by the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). This scale has five items that measure subjective well-being and showed high internal consistency and moderate test-retest stability estimates across all five measurement occasions (alphas ranged from .89 to .96 and test-retest *r*s ranged from .71 to .92).

Moods. Positive and negative mood states were measured at initial and follow-up sessions with the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The measure consists of 20 items asking participants to rate on 5-point Likert-type scales how much they experienced different emotions (e.g., "upset" or "proud") in the past 2 weeks. Internal consistency and test-retest stability estimates across all five measurement occasions were high for both positive and negative PANAS subscales (alphas ranged from .78 to .93 and test-retest *r*s ranged from .44 to .76).

Psychosomatic symptoms. A self-report inventory was used to measure participants' experience of 27 physical symptoms (e.g., dizziness, aches and pains, and poor appetite) using items drawn from other surveys (e.g., Bartone, Ursano, Wright, & Ingraham, 1989;

Emmons, 1992). These scales also showed high internal consistency and test-retest stability estimates across all five measurement occasions (alphas ranged from .91 to .94 and test-retest *r*s ranged from .20 to .51).

Because these measures of well-being were moderately intercorrelated, we constructed an overall well-being composite by standardizing them to render them in the same scale, reverse scoring the negative indices (i.e., negative affect and physical symptoms) to render them all in the same direction, and averaging them together into an overall well-being index (alphas across all five measurement occasions ranged from .73 to .79 and test-retest *r*s ranged from .62 to .88).

Closeness to the partner before and after the transgression. Participants' feelings of closeness to their transgressors were measured in the initial survey by three self-report items: (a) "How close were you to the person who hurt you before the transgression?" (rated on a Likert-type scale from 0 = *not at all* to 6 = *extremely close*); (b) "How committed were you to the person who hurt you before the transgression?" (rated on a scale from 0 = *not at all* to 6 = *extremely committed*); and (c) the Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992).[2] The IOS presents seven pairs of circles (ranging from no overlap to extreme overlap) and instructs participants to circle the pair that best describes their relationship to the person before the transgression. Responses were coded on a 7-point scale, with 1 indicating no overlap and 7 indicating extreme overlap. These three items were combined to measure participants' sense of closeness to their relationship partners before the transgression ($\alpha = .87$).[3]

The above items were modified to measure participants' closeness, commitment, and self-other overlap with their relationship partners after the transgression and included in follow-up assessments. They were likewise combined to measure participants' feelings of closeness after the transgression (alphas ranged from .87 to .94 and test-retest *r*s ranged from .62 to .82).

Apology/making amends. How much participants thought their transgressors apologized and made amends for their transgressions was measured with the mean of two items: (a) "How apologetic was the offender toward you?" and (b) "To what extent did he or she make amends for what he/she did to you?" (both had Likert-type scales ranging from 0 = *not at all* to 6 = *completely*). The measure had good internal consistency and test-retest stability across follow-up assessments (alphas ranged from .79 to .90 and *r*s ranged from .56 to .70). An individual difference variable for overall apology/made amends was created by averaging all five measurement occasions ($\alpha = .91$).

Data Analytic Strategy

Our data conformed to a two-level hierarchical structure (repeated measures nested within individuals), so we used multilevel random coefficient models (Bryk & Raudenbush, 1992; Hedeker, 2004) using the HLM 6.2 statistical software package (Raudenbush, Bryk, Cheong, & Congdon, 2000) to analyze how people's forgiveness and feelings of closeness to their transgressors were related to within-person changes in the well-being composite variable.

First, we wished to know if people's TRIMs (avoidance, revenge and benevolence) and feelings of closeness toward their transgressors were each related to psychological well-being. We tested these hypotheses with within-person, or Level-1, models (for each TRIM and for closeness) of the form:

$$\text{Well-Being}_{ij} = \beta_{0j} + \beta_{1j}\,(\text{Time})ij + \beta_{2j}\,(\text{TRIM or Feelings of Closeness})_{ij} + r_{ij}\beta \quad (1)$$

In Equation 1, person *j*'s well-being on Day *i* is modeled as a function of person *j*'s intercept (i.e., expected well-being score when the other predictors have a value of 0), linear change in time since the transgression occurred for person *j* (i.e., number of weeks to the nearest 1/7th of a week from the first assessment), one of the TRIM subscales (i.e., Avoidance, Revenge, or Benevolence motivation) or feelings of closeness, and a residual (i.e., variance in well-being that cannot be accounted for by the intercept, linear change in well-being, or a person's TRIM score on that specific measurement occasion). We predicted between-person's differences in the within-persons associations of with the following fixed (i.e., time-invariant) covariates at Level-2:

$$\beta_{0j} = \gamma_{00} + u_{0j}; \quad (2)$$

$$\beta_{1j} = \gamma_{10} + u_{1j}; \quad (3)$$

$$\beta_{2j} = \gamma_{20} + \gamma_{21}\,(\text{Feelings of Closeness Before})_j + \gamma_{22}\,(\text{Apology})_j + u_{2j}. \quad (4)$$

Thus, we modeled the intercept and linear change β coefficients in the Level-1 models as a function of a grand mean and a person-specific residual, and we further modeled the TRIM (or feelings of closeness) β coefficients as functions of feelings of closeness to the transgressor before the transgression and apology/amends on the part of the transgressor. These multilevel models allowed us to examine whether fluctuations in well-being occurred as a function of transient fluctuations in each TRIM (or in feelings of closeness) above or below the values expected on the basis of people's

initial status and linear change (over time) in well-being. Moreover, these analyses allowed us to test if between-persons differences in closeness before the transgression and apology/making amends moderated the strength of the within-person associations between the TRIMs (or feelings of closeness) and well-being.

Having evaluated the associations of forgiveness and feelings of closeness with well-being, we proceeded to evaluate whether feelings of closeness mediated any obtained relationships between the TRIMs and well-being. Thus, we first regressed feelings of closeness onto each TRIM, and then we regressed well-being onto each TRIM and feelings of closeness with the following Level-1 equations:

$$\text{Feelings of Closeness}_{ij} = \beta_{0j} + \beta_{1j}(\text{Time})_{ij} + \beta_{2j}(\text{TRIM})_{ij} + r_{ij}; \quad (5)$$

$$\text{Well-Being}_{ij} = \beta_{0j} + \beta_{1j}(\text{Time})_{ij} + \beta_{2j}(\text{TRIM})_{ij} + \beta_{3j}(\text{Feelings of Closeness})_{ij} + r_{ij}. \quad (6)$$

We included between-person covariates for closeness and apology in only the TRIM parameters. These multilevel models allowed us to examine whether feelings of closeness appeared to mediate the relationships between the TRIMs and well-being.

STUDY 1 RESULTS

Descriptive Statistics

Participants reported transgressions committed by girlfriends or boyfriends (59%), friends of the same gender (19%), friends of the other gender (11%), relatives (10%), husbands or wives (3%), and "others" (9%). One person did not report the type of relationship involved. Participants described several types of transgressions, including betrayals of confidence or insults by a friend (28%), arguments or neglect by a romantic partner, spouse, or ex-romantic partner (22%); infidelity by a romantic partner or spouse (19%); rejection, neglect, or insult by a family member (10%); termination of romantic relationship (11%); insults by people other than family or friends (3%); and rejection or abandonment by a friend or prospective relationship partner (2%). Five participants did not describe their transgressions. Mean levels on the between-persons measures were as follows: closeness before the transgression was $M = 4.97$, $SD = 1.25$, and perceived apology by the transgressor across all five time points was $M = 2.44$, $SD = 1.63$. Table 1 display means and standard deviations for the repeated measures.

Are Within-Person Fluctuations in Well-Being Associated With Forgiveness?

We first examined whether people tended to experience greater well-being than expected on any given day (based on their initial status and linear change estimates in well-being) when they were also more forgiving (i.e., less avoidant and vengeful and more benevolent) toward their transgressors than was typical for them. Table 2 lists the parameter estimates for these models. Avoidance motivation covaried significantly and negatively with well-being, $t(df = 112) = -2.48$, $p = .015$, effect size $r = -.23$. For the average person, every one-unit increase in avoidance above that person's mean was associated with a .09 reduction in well-being. There was also a cross-level interaction (of marginal statistical significance) with closeness of the relationship before the transgression, $t(df = 112) = -1.89$, $p = .06$, $r = -.18$. For each unit a person felt closer to the partner before the transgression, that person tended to experience an additional .06 reduction in well-being for each one-unit increase in avoidance motivation.

The association between within-persons changes in revenge motivation and well-being was nonsignificant for the average person in our sample, $t(df = 112) = 1.12$, $p = .25$, effect size $r = -.11$. However, this association had a cross-level interaction with apology/amends on the part of the transgression, $t(df = 112) = -2.22$, $p = .03$, $r = -.20$. For each unit increase in the degree to which people thought their transgressors apologized/made amends, the association of revenge motivation and psychological well-being became –.06 units more negative. That is, the negative association between revenge motivation and well-being became stronger to the extent that participants perceived the transgressor had apologized.

For the Benevolence subscale, the opposite pattern emerged. Benevolence motivation covaried significantly and positively with well-being, $t(df = 112) = 2.92$, $p = .005$, $r = .26$. For the average person, every one-unit increase in benevolence above the mean was associated with a .13 increase in well-being. Therefore, on occasions when people reported being more benevolent than typical toward their transgressors, they also tended to report greater well-being.[4]

Are Within-Person Fluctuations in Well-Being Associated With Feeling Close to the Transgressor?

Next, we investigated whether people experienced greater well-being than expected (based on their initial status and linear change estimates) on any given day when they also felt closer to their transgressors on that day. We found that fluctuations in feelings of closeness

TABLE 1: Means and Standard Deviations for Major Variables Across Observations for Study 1 and 2

	Avoidance		*Revenge*		*Benevolence*		*Closeness*		*Well-Being*	
Time Point	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)
Study 1										
T1	3.11	(1.08)	1.83	(0.83)	3.05	(1.02)	2.38	(1.74)	–0.35	(0.76)
T2	2.96	(1.10)	1.61	(0.80)	3.25	(1.00)	2.73	(1.80)	–0.05	(0.77)
T3	2.82	(1.13)	1.53	(0.77)	3.31	(1.04)	2.58	(1.85)	0.11	(0.70)
T4	2.74	(1.10)	1.52	(0.79)	3.38	(1.04)	2.64	(1.89)	0.16	(0.75)
T5	2.70	(1.15)	1.48	(0.87)	3.39	(1.07)	2.54	(1.84)	0.18	(0.78)
Study 2										
T1	3.52	(1.02)	2.28	(1.02)	2.51	(0.91)	2.51	(1.81)	–0.61	(0.87)
T2	3.52	(1.07)	2.18	(1.02)	2.48	(0.91)	2.37	(1.72)	–0.55	(0.87)
T3	3.40	(1.10)	2.19	(1.06)	2.54	(0.99)	2.35	(1.76)	–0.41	(0.84)
T4	3.31	(1.15)	2.17	(1.06)	2.59	(1.08)	2.38	(1.80)	–0.27	(0.87)
T5	3.26	(1.21)	2.08	(1.08)	2.64	(1.10)	2.38	(1.85)	–0.15	(0.82)
T6	3.20	(1.22)	2.02	(1.04)	2.64	(1.07)	2.38	(1.85)	–0.08	(0.82)
T7	3.18	(1.23)	2.05	(1.06)	2.69	(1.08)	2.47	(1.87)	–0.05	(0.78)
T8	3.13	(1.24)	1.97	(1.04)	2.76	(1.13)	2.47	(1.94)	–0.02	(0.80)
T9	3.05	(1.27)	1.91	(1.01)	2.79	(1.16)	2.46	(1.93)	0.04	(0.77)
T10	3.03	(1.22)	1.84	(0.95)	2.75	(1.09)	2.46	(1.92)	0.05	(0.76)
T11	3.03	(1.22)	1.85	(0.96)	2.81	(1.09)	2.50	(1.94)	0.06	(0.79)
T12	3.00	(1.19)	1.84	(0.95)	2.78	(1.10)	2.49	(1.97)	0.06	(0.76)
T13	2.99	(1.16)	1.87	(0.97)	2.82	(1.04)	2.46	(1.92)	0.12	(0.68)
T14	2.92	(1.19)	1.89	(0.95)	2.85	(1.05)	2.45	(1.87)	0.11	(0.68)
T15	2.85	(1.16)	1.84	(0.96)	2.93	(1.04)	2.53	(1.89)	0.09	(0.68)
T16	2.77	(1.17)	1.79	(0.93)	3.00	(1.06)	2.69	(1.91)	0.17	(0.69)
T17	2.75	(1.19)	1.81	(1.00)	2.99	(1.10)	2.73	(2.02)	0.22	(0.69)
T18	2.71	(1.21)	1.86	(1.03)	3.02	(1.10)	2.70	(1.73)	0.18	(0.70)
T19	2.67	(1.18)	1.79	(0.97)	3.06	(1.14)	2.77	(2.04)	0.24	(0.72)
T20	2.71	(1.23)	1.81	(0.94)	3.09	(1.18)	2.81	(2.06)	0.27	(0.68)
T21	2.64	(1.20)	1.75	(0.94)	3.16	(1.15)	2.93	(2.07)	0.28	(0.71)

TABLE 2: Linear Models of Longitudinal Change in Well-Being (WB) as a Function of Forgiveness, Study 1

Measure (Parameter)	*Coefficient*	SE	t *Value*	*Effect Size* r	% *VAF*[a]	$X^2(1, N = 114)$
Avoidance motivation as measure of forgiveness						
Initial status in WB	–0.32	0.07	—	—	79.54	388.47§
Linear change in WB[b]	0.06	0.01	7.92§	0.60	0.62	220.13§
Avoidance	–0.09	0.04	–2.48***	–0.23	2.54	127.95**
Closeness before[c]	–0.06	0.03	–1.89*	–0.18	—	—
Apology/amends[c]	–0.02	0.01	–1.29NS	–0.12	—	—
Revenge motivation as measure of forgiveness						
Initial status in WB	–0.33	0.07	—	—	77.66	322.70§
Linear change in WB	0.07	0.01	7.58§	0.58	0.68	137.96§
Revenge	–0.07	0.06	–1.15NS	–0.11	6.44	103.62*
Closeness before	–0.00	0.04	–0.08NS	–0.01	—	—
Apology/amends	–0.06	0.03	–2.22**	–0.20	—	—
Benevolence motivation as measure of forgiveness						
Initial status in WB	–0.31	0.07	—	—	78.70	333.12§
Linear change in WB	0.06	0.01	7.73§	0.59	0.61	177.12§
Benevolence	0.13	0.04	2.92****	0.26	4.09	97.08NS
Closeness before	0.06	0.04	1.33NS	0.12	—	—
Apology/amends	0.02	0.02	0.62NS	0.06	—	—

a. %VAF = percentage of variance accounted for by parameters.
b. Linear change estimate is based on a 1-week unit.
c. All models included between-persons covariates for feelings of closeness before the transgression and perceived apology/amends from transgressor in only the forgiveness parameters.
*$p < .10$. **$p < .05$. ***$p < .02$. ****$p < .01$. §$p < .001$.

TABLE 3: Mediation Models for Study 1 and Study 2[a]

Predictor(X) > Mediator(M) > Outcome(Y)	β*(yx)*	β*(mx)*	β*(ym.x)*	β*(yx.m)*	*Sobel's* t
Study 1					
Avoidance > Closeness > Well-Being	–.09***	–.70§	.06**	–.04NS	2.21**
Revenge > Closeness > Well-Being	–.07NS	–.42§	N/A	N/A	N/A
Benevolence > Closeness > Well-Being	.13****	.83§	.07**	.08NS	2.62****
Study 2					
Avoidance yesterday > Closeness > Well-Being	–.04***	–.25§	.10§	–.01NS	4.38§
Revenge yesterday > Closeness > Well-Being	–.04**	–.16§	.10§	–.03NS	3.55§
Benevolence yesterday > Closeness > Well-Being	.01NS	.16§	N/A	N/A	N/A

NOTE: N/A = Nonapplicable results because the presumed predictor was not associated with the presumed outcome in the bivariate regression.
a. All Level-1 models included fixed Level-2 covariates (centered around grand means) representing feelings of closeness before the transgression and perceived apology from transgressor in the TRIM parameters of those models.
$^{**}p < .05$. $^{***}p < .02$. $^{****}p < .01$. $^{\S}p < .001$.

to the transgressor covaried significantly and positively with well-being, $t(df = 112) = 2.09$, $p = .04$, $r = .19$. For the average person, every one-unit increase in feelings of closeness (above his or her mean) was associated with a .06 increase in well-being. Moreover, the strength of this association was moderated by the extent to which that person perceived the transgressor apologized/made amends, $t(df = 112) = 2.27$, $p = .04$, $r = .21$. Thus, for each unit-increase in the extent to which someone perceived that his or her transgressor apologized/made amends, a one-unit increase in closeness was associated with an additional .04 increase in well-being above that person's mean.

Do Feelings of Closeness Mediate the Relationship Between Well-Being and Forgiveness?

Having found that well-being was associated with transient fluctuations in people's TRIMs (viz., Avoidance and Benevolence) *and* transient fluctuations in people's feelings of closeness to their transgressors, we proceeded to examine whether feelings of closeness mediated the associations of avoidance and benevolence with well-being.

According to Baron and Kenny (1986), to test whether a variable such as feelings of closeness mediates the associations between the TRIMs and well-being, several conditions must be satisfied. First, the predictor variable (i.e., each TRIM) must be associated with the outcome variable (i.e., well-being). Second, the presumed mediator (i.e., feelings of closeness) must likewise be associated with the outcome (i.e., well-being). Third, the predictor (each TRIM) must be associated with the presumed mediator (closeness). Lastly, upon regressing the outcome of well-being onto both the predictor (each TRIM) and presumed mediator (closeness) simultaneously, the presumed mediator (closeness) must maintain a significant association with the presumed outcome (well-being). These conditions can be evaluated with Sobel's (1982) test for mediation. Krull and MacKinnon (2001) showed that these criteria can be used to test mediation in multilevel models. We used Preacher and Leonardelli's (2001) online calculation tool for mediation tests to conduct the Sobel test.

Results, so far, supported the first two conditions for mediation. The first two columns of data in Table 3, labeled β(*yx*) and β(*mx*), display the coefficients produced from individually regressing outcome *y* (i.e., well-being) and presumed mediator *m* (i.e., feelings of closeness) onto the predictor variables *x* (i.e., each TRIM). They show that although all three TRIMs were associated with feelings of closeness, only avoidance and benevolence motivation were associated with well-being. The third column, labeled β(*ym.x*), shows that feelings of closeness remained significantly associated with well-being when avoidance or benevolence motivation were controlled. The fourth column, labeled β(*yx.m*), shows that the associations well-being had with avoidance and benevolence motivation were no longer significant when feelings of closeness were controlled. This pattern supports the hypothesis that feelings of closeness mediated the associations of avoidance and benevolence with well-being. The Sobel tests, whose *t* values are in the fifth column, demonstrate that the degree of mediation was statistically significant.[5]

STUDY 1 DISCUSSION

In Study 1, we examined whether the well-established correlation between measures of forgiveness and measures of well-being (e.g., Brown, 2003; Hebl & Enright, 1993; Karremans et al., 2003; Krause & Ellison, 2003; McCullough et al., 1998; Seybold, Hill, Neumann, & Chi, 2001) existed at the within-persons level. This hypothesis was largely supported. Results also supported the notion that the relationship of forgiveness

and well-being can differ between people depending on how close and committed people are to their transgressors prior to the transgression and the degree to which people perceived their transgressors to have apologized and made amends for their hurtful behavior. In general, feelings of closeness to one's transgressor prior to the transgressor and the perception that one's transgressor has apologized and made amends appear to strengthen the association of forgiveness and well-being. This is consistent with Karremans et al.'s (2003) research on the role of commitment as a moderator of the association of forgiveness with psychological well-being.

Evidence also supported the notion that when people felt closer and more committed than typical to their partners they also experienced elevations in well-being, and that these increases in feelings of closeness were greater for people whose transgressors apologized and made amends more. Moreover, evidence showed that increases in feelings of closeness could explain the within-persons associations between forgiveness and well-being.

STUDY 2

The purpose of Study 2 was to explore with greater statistical rigor the possibility that the observed associations between forgiveness and well-being are causal in nature. That is, we wanted to know if the covariance structure among the TRIMs, feelings of closeness, and well-being supported the hypotheses that (a) being relatively forgiving on a given day is associated with greater well-being on the successive day and (b) being relatively forgiving on a given day is associated with better well-being on the successive day by way of increasing feelings of closeness toward the transgressor on the successive day. An additional aim of Study 2 was to test the reverse causal model for the correlations obtained in Study 1, namely, if well-being exerts a causal influence on forgiveness via feelings of closeness.

Participants and Procedure

Participants were 165 students in undergraduate psychology courses (112 women) at the University of Miami. Again, all participants had experienced a transgression within the past 7 days (M = 4.37 days, SD = 1.85; M age = 19.61, SD = 3.82) at the time of enrollment. They received course credit for participating and $20 for completing the tasks described here (and a separate laboratory session not described here). We visited these courses throughout the semester, screened, then enrolled participants who qualified by giving them preliminary and 21 follow-up surveys. They were instructed to complete one each day, date and complete each honestly (without responding later to skipped days), and then return completed packets to the laboratory (after approximately 21 days). Completion rates were very high, with 109 participants (66.9%) completing all 21 diary entries and only 9 (5.5%) completing under 10. Though we evaluated the links of forgiveness and well-being using this dataset in only the present paper, other details of the data set can be obtained from McCullough et al. (2007).

Measures

We used the same or shorter instruments (to reduce burden) as in Study 1 to measure forgiveness, satisfaction with life, positive/negative mood (9-item version), physical symptoms (16-item version), feelings of closeness to the transgressor before and after the transgression, and perceptions of transgressor apology/amends. Likewise, all instruments were included in initial and follow-up surveys. The major difference was that participants completed instruments daily (rather than bimonthly) and wherever they chose (rather than in a laboratory). All measures had comparable internal consistency and test-retest reliabilities to Study 1.

Statistical Models and Data Analyses

Our first aim was to replicate the findings from Study 1 using cross-lagged analyses. Thus, we first examined if people's TRIM scores or feelings of closeness on any given day were each prospectively associated with their well-being on the next day, and then we examined if their TRIM scores were prospectively associated with feelings of closeness toward their transgressors on the next day, while controlling for their well-being and feelings of closeness on the same day, to test whether feelings of closeness served as a mediator between the TRIMs and well-being. We computed the following HLM equations (separately for each TRIM):

$$\text{Well-Being}_{ij} = \beta_{0j} + \beta_{1j}(\text{Time})_{ij} + \beta_{2j}(\text{Well-Being})_{i-1,j} + \beta_{3j}(\text{TRIM})_{i-1,j} + \beta_{4j}(\text{Feelings of Closeness})_{i-1,j} + r_{ij}; \quad (7)$$

$$\text{Feelings of Closeness}_{ij} = \beta_{0j} + \beta_{1j}(\text{Time})_{ij} + \beta_{2j}(\text{Well-Being})_{i-1,j} + \beta_{3j}(\text{TRIM})_{i-1,j} + \beta_{4j}(\textit{Feelings of Closeness})_{i-1,j} + r_{ij}. \quad (8)$$

To assess the possibility that forgiveness on a given day led to increased well-being the next day, we evaluated the statistical significance of the β_{3j} coefficients for each TRIM. To assess the possibility that feelings of closeness on a given day led to increased well-being on the next day, we computed a model like Equation 7, but

without a TRIM as a predictor variable, and evaluated the statistical significance of the β coefficient for feelings of closeness on Day $i - 1$. Then we proceeded to examine if any of the TRIMs' prospective associations with well-being were mediated by feelings of closeness. We did this by estimating a model akin to Equation 7 separately for each TRIM, but with person j's feelings of closeness on Day i added as another predictor variable. These multilevel models allowed us to evaluate whether: (1) forgiveness was associated with well-being on the next day; (2) feelings of closeness were associated with well-being on the next day; (3) forgiveness was associated with feelings of closeness toward the transgressor on the next day; and (4) the prospective association of forgiveness with well-being could be accounted for by increased feelings of closeness on the next day.

As in Study 1, we included between-persons covariates representing closeness before the transgression and apology/amends in only the TRIM on Day i-1 parameters (or in the feelings of closeness on Day $i - 1$ parameter). This allowed us to examine if any prospective links of the TRIMs (or feelings of closeness) with well-being differed as a function of prior closeness and apology/amends.

Finally, our second aim in Study 2 was to examine if well-being was prospectively related to the TRIMs and whether feelings of closeness served as a mediator in this reverse causal model. We did this by computing HLMs similar to those above for each TRIM (but using no between-person covariates[6]):

$$\text{TRIM}_{ij} = \beta_{0j} + \beta_{1j}(\text{Time})_{ij} + \beta_{2j}(\text{Well-Being})_{i-1,j} + \beta_{3j}(\text{TRIM})_{i-1,j} + \beta_{4j}(\text{Feelings of Closeness})_{i-1,j} + r_{ij}; \quad (9)$$

$$\text{Feelings of Closeness}_{ij} = \beta_{0j} + \beta_{1j}(\text{Time})_{ij} + \beta_{2j}(\text{Well-Being})_{i-1,j} + \beta_{3j}(\text{TRIM})_{i-1,j} + \beta_{4j}(\text{Feelings of Closeness})_{i-1,j} + r_{ij}. \quad (10)$$

RESULTS

Descriptive Statistics

As in Study 1, our sample included many types of partners and transgressions. Participants reported transgressions committed by girlfriends or boyfriends (50%), friends of like gender (19%), relatives (13%), friends of the other gender (9%), husbands or wives (1%) and "others" (8.0%). They also described several types of transgressions, including infidelity by a romantic partner or spouse (29%); friends' insults or betrayals of confidence (20%); rejection, neglect, or insult by a family member (13%); termination of a romantic relationship (13%); neglect by a romantic or ex-romantic partner or spouse (10%); rejection or abandonment by a friend or prospective relationship partner (10%); and insults by others (5%). The between-persons measures had comparable means to Study 1: Closeness before the transgression was $M = 4.90$, $SD = 1.29$; overall perceived apology/amends was $M = 2.39$, $SD = 1.82$ (all on 7-point scales). Table 1 displays descriptive statistics for the repeated measures.

Is Forgiveness on a Given Day Associated With Greater Well-Being on the Successive Day?

Multilevel models showed that on any given Day $i - 1$, when people had higher levels of avoidance or revenge motivation toward their transgressors than was typical for them, they tended to also have lower levels of well-being on the following Day i than we could expect based on their well-being trajectories alone [for avoidance $t(df = 161) = -2.38$, $p = .02$, effect size $r = -.18$; for revenge $t(df = 161) = -1.96$, $p = .05$, effect size $r = -.15$], even after controlling for the covariation among avoidance (or revenge), well-being, and feelings of closeness on Day $i - 1$ (see Table 4). Moreover, we found cross-level interactions with both of our individual difference variables. That is, the prospective association of avoidance and well-being was stronger for people who were closer to their partners before the transgression, $t(df = 161) = -2.12$, $p = .04$, effect size $r = -.16$, and for people who thought that their transgressors were more apologetic for the transgression $t(df = 161) = -2.33$, $p = .02$, effect size $r = -.18$. The prospective association of revenge and well-being was also stronger (with marginal statistical significance) for people who were relatively close to their partners before the transgression, $t(df = 161) = -1.65$, $p = .10$, effect size $r = -.13$.

The link between benevolence on any given Day $i - 1$, and well-being on the following Day i, was nonsignificant for the average person in our sample, $t(df = 161) = 0.63$, $p = .13$, effect size $r = .12$. However, this association was moderated by between-persons differences in perceived apology/amends, $t(df = 159) = 3.64$, $p = .001$, effect size $r = .27$. Together, these results suggest that forgiveness may lead to later levels of well-being, particularly when forgiveness is measured in terms of reduced avoidance and revenge motivation (Finkel, 1995). As with Study 1, these results also provide evidence that the associations between forgiveness and well-being were stronger when people were forgiving someone to whom they felt closer before the transgression or someone who apologized/made amends more.

TABLE 4: Linear Models of Cross-Lagged Correlations Between Well-Being (WB) and Forgiveness, Study 2[a]

Measure (Parameter)	*Coefficient*	SE	t *Value*	*Effect Size* r	% *VAF*[b]	$X^2(1, N = 164)$
Avoidance motivation as measure of forgiveness						
Initial status in WB	–0.24	0.06	—	—	85.39	1111.60§
Linear change in WB[c]	0.02	0.00	8.60§	0.53	0.04	244.42§
Avoidance yesterday	–0.04	0.02	–2.38***	–0.18	0.96	183.97****
Closeness before[d]	–0.03	0.01	–2.12**	–0.16	—	—
Apology/amends[d]	–0.02	0.01	–2.33***	–0.18	—	—
Revenge motivation as measure of forgiveness						
Initial status in WB	–0.24	0.06	—	—	84.62	1110.27§
Linear change in WB	0.02	0.00	9.10§	0.58	0.04	240.69§
Revenge yesterday	–0.04	0.02	–1.96**	–0.15	2.10	184.92****
Closeness before	–0.03	0.01	–1.65*	–0.13	—	—
Apology/amends	–0.01	0.01	–0.91NS	–0.07	—	—
Benevolence motivation as measure of forgiveness						
Initial status in WB	–0.25	0.06	—	—	84.80	1175.90§
Linear change in WB	0.02	0.00	9.46§	0.60	0.04	268.36§
Benevolence yesterday	0.01	0.02	0.63NS	0.05	1.46	197.40****
Closeness before	–0.01	0.09	–0.36NS	–0.03	—	—
Apology/amends	0.18	0.06	3.64****	0.27	—	—

a. All models also included Level-1 parameters for previous day's feelings of closeness and well-being (estimates not shown here).
b. %VAF = Percentage of variance accounted for by parameters.
c. Linear change estimate based on a 1-day unit.
d. All models included between-persons covariates for feelings of closeness before the transgression and perceived apology/amends from transgressor in only the forgiveness parameters.
*$p < .10$. **$p < .05$. ***$p < .02$. ****$p < .01$. §$p < .001$.

Are Feelings of Closeness on a Given Day Associated With Greater Well-Being on the Successive Day?

Next, we investigated whether people experienced greater well-being than expected on any given day (on the basis of their initial status and linear change estimates) when they felt closer to their transgressors on the previous day. The link between feelings of closeness on any given Day $i - 1$ and well-being on the following Day i was nonsignificant for the average person in our sample, $t(df = 161) = 0.89$, $p = .38$, effect size $r = .07$. However, this association was moderated by between-persons differences in perceived apology/amends, $t(df = 161) = 2.99$, $p = .004$, effect size $r = .23$. Thus, the relationship of closeness and well-being was stronger among people whose transgressors had apologized and made amends than it was among those whose transgressors had not done so.

Does Forgiveness Obtain Its Link to Well-Being by Way of Feelings of Closeness to the Transgressor?

Because increases in avoidance and revenge on any given day were associated with reductions in well-being the next day, we next examined whether people's TRIMs on Day $i - 1$ were associated with people's feelings of closeness toward the transgressor on Day i and whether feelings of closeness on Day i mediated the prospective associations of avoidance and revenge with well-being, after controlling for the covariation between these TRIMs, well-being, and feelings of closeness on Day $i - 1$. The first column in Table 3 displays the coefficients produced from regressing the outcome (well-being) on Day i upon the predictor variables (each TRIM) on Day $i - 1$. Column two shows the results of regressing the presumed mediator (feelings of closeness) on Day i upon each TRIM on Day $i - 1$. These coefficients indicate that avoidance, revenge, and benevolence motivation on Day $i - 1$ were each associated with feelings of closeness on Day i. The third and fourth columns display the unique associations of well-being on Day i with feelings of closeness on Day i and with avoidance or revenge motivations on Day $i - 1$ (respectively), when predictor and mediator are entered simultaneously in regression models. These coefficients indicate that feelings of closeness (our presumed mediator) had unique and significant associations with well-being when avoidance or revenge motivations on Day $i - 1$ were statistically controlled. Together with the Sobel tests, whose t values are in the fifth column, this pattern supports the conclusion that the observed increases in well-being on Day i associated with

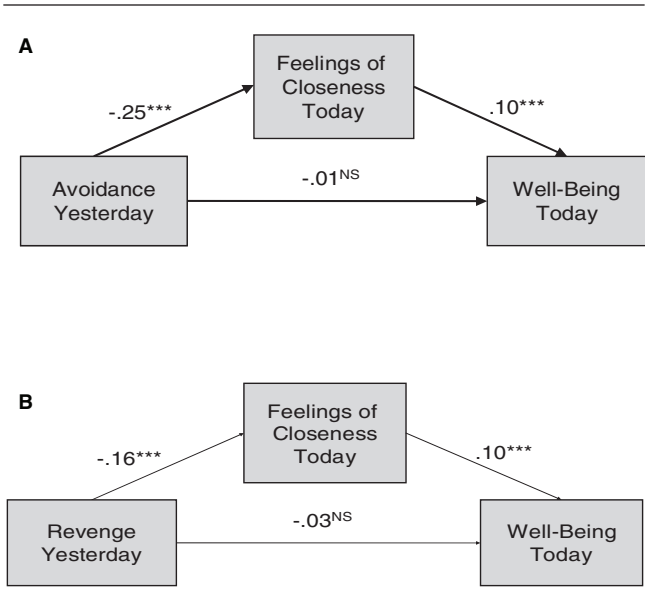

Figure 1 Models of the Prospective Associations of Forgiveness (i.e., Changes in Transgression-Related Interpersonal Motivations) With Well-Being

NOTE: The figure shows that for the average person in the sample, feelings of closeness completely mediated the associations that both avoidance (1a) and revenge (1b) had with later increases in well-being. $^{*}p < .05$. $^{**}p < .01$. $^{***}p \leq .001$.

reduced avoidance and revenge motivations on Day i – 1 are mediated by increased feelings of closeness with the transgressor on Day i (see figures 1a and 1b).[7]

Is Well-Being on a Given Day Linked to Forgiveness or Feelings of Closeness on a Successive Day?

Having found evidence that forgiveness is linked to increases in well-being in a cross-lagged fashion and that the association between the forgiveness and well-being in these analyses could still be explained by feelings of closeness (at least with respect to avoidance and revenge), our second aim for Study 2 was to further test the causal viability of our mediational models. This required ruling out evidence that the covariance structure among the TRIMs, feelings of closeness, and well-being also supports closeness' mediation of any prospective associations between well-being and the TRIMs.

Multilevel models for the reverse causal models showed that on any given Day i – 1, when people had higher levels of psychological well-being than was typical for them, they also tended to have lower levels of avoidance, $t(df = 163) = -2.91$, $p = .005$, effect size $r = -.22$, and revenge, $t(df = 163) = -4.03$, $p < .001$, effect size $r = -.30$, on the next Day i than we could expect from their avoidance or revenge trajectories alone. On the other hand, when people had above-typical well-being on any given Day i – 1, they also had higher levels of benevolence, $t(df = 163) = 2.75$, $p = .007$, effect size $r = .21$, on the next Day i than we could expect from their benevolence trajectories alone. These findings emerged, moreover, after controlling for the covariation among well-being, each TRIM, and feelings of closeness on Day i – 1. Thus, this provides evidence that psychological well-being may also lead to increases in forgiveness.

Next we examined whether people's well-being on any given Day i – 1 was associated with their feelings of closeness toward the transgressor on the following Day i, after controlling for the covariation between each TRIM, well-being, and feelings of closeness on Day i – 1. Results demonstrated that when people had higher well-being than was typical for them on Day i – 1, they did not have significantly greater feelings of closeness to their transgressors on the next Day i than could be expected from their closeness trajectories alone, $ts(df = 163) = -0.20$, 0.41, and 0.28, $ps = .85$, .68, and .78 (for models using the avoidance, revenge or benevolence on Day i – 1 parameters, respectively). Therefore, feelings of closeness did not operate as a mediator in well-being's prospective associations with increases in the TRIMs. Taken together, these results indicate that well-being may lead to increases in forgiveness, but that this does not occur via changes in feelings of closeness.

STUDY 2 DISCUSSION

The results from Study 2 largely replicated the findings from Study 1. Fluctuations in all three motivations underlying forgiveness were uniquely related to subsequent psychological well-being. Specifically, we found that reductions in avoidance and revenge motivations on any given day were related to greater well-being on the next day for the average person; and that increases in benevolence, on the other hand, were more strongly related to greater well-being on the next day the more a person perceived his or her transgressor to have apologized or made amends. Results again supported the idea that forgiveness (in terms of reduced avoidance) may be more strongly related to well-being for people who reported greater closeness/commitment to the relationship before the transgression. Finally, results from Study 2 replicated the finding that the positive association between forgiveness and well-being can be accounted for by feelings of closeness toward the transgressor.

Study 2 also provided support for the proposition that transgressors may play a productive role in helping

victims forgive (and, thereby, experience improved well-being), by apologizing and making amends for their transgressions. The fact that Study 2 replicated so many of the findings from Study 1—using a prospective design that allowed us to test one important condition for causal conclusions (i.e., that changes in a putative *x* variable precede the changes in a putative *y* variable)—yields some additional (though by no means conclusive) evidence to the notion that the links of forgiveness to closeness and well-being may in fact be causal in nature.

However, it is important to note that Study 2 results were not perfectly consistent with Study 1 results. For example, in Study 1, avoidance and benevolence motivation were both (cross-sectionally) associated with well-being, but in Study 2, avoidance, but not benevolence, was (prospectively) associated with well-being.[8] In Study 1, revenge motivation was not (cross-sectionally) associated with well-being, but in Study 2, it was (prospectively) associated with well-being. Frankly, we are at a loss to offer a coherent explanation for these discrepancies and are tempted to conclude that they simply represent the vagaries of sampling error, but future work may reveal a more substantive explanation.

Finally, Study 2 provided evidence that well-being is also associated with subsequent increases in forgiveness and that, therefore, both causal orderings of the forgiveness and well-being relationship may be simultaneously possible. Importantly, however, these final analyses also demonstrated that well-being's association with subsequent forgiveness could not be accounted for by feelings of closeness to the transgressor. Therefore, Study 2 also indicated that it is only in the case of the association of forgiveness with later well-being that feelings of closeness appear to serve a mediating role.

GENERAL DISCUSSION

In the present article, we adduced data from two separate studies to test the hypothesis that forgiveness is associated with psychological well-being. Furthermore, we hypothesized that it obtains this association by helping people restore a subjective sense of closeness and commitment to a transgressing relationship partner. The two studies were quite consistent in their support of these hypotheses, in keeping with other recent findings (Karremans & Van Lange, 2004; McCullough et al., 1998; Tsang et al., 2006). These results are largely consistent with the idea that psychological well-being can serve as an indicator of the availability of positive social relations, that positive social relations are a crucial human need (Ryan & Deci, 2000; Trivers, 1971), and that helping to restore valuable social relations is how forgiveness obtains its positive association with well-being. The present studies therefore contribute to the research on forgiveness, relationship closeness, and psychological well-being by demonstrating that the between-persons relationships between these constructs, obtained in previous studies, also obtain at the within-persons level. Moreover, by using time-lagged analyses in Study 2 to demonstrate that forgiveness at any given point in time is associated with later levels of psychological well-being (even after controlling for previous levels of psychological well-being), we found support for the notion that the associations between forgiveness and well-being are causal in nature.

Overall, the links between forgiveness and psychological well-being were stronger in relationships characterized by two qualities: (a) greater closeness and commitment to the relationship (at least from the victim's perspective) and (b) a high degree of apology and making amends from the transgressor following the transgression. If a relationship is personally valuable to the victim (e.g., if the transgressor was a close friend or loved one), then the disruption of this relationship also limits the victim's access to the social-psychological resources that the relationship provided (e.g., emotional and material social support, love, a sense of social inclusion, etc.), which leads to psychological distress. By forgiving and thereby promoting the restoration of the relationship, those social-psychological resources become available again to the victim. Likewise, failures to forgive an apologetic partner are more negatively associated with well-being than are failures to forgive an unapologetic one, perhaps because apologies send signals that a relationship is likely to possess value to the forgiver in the future, whereas an unapologetic offender's future relationship intentions remain more uncertain. The notion that it is the close, committed relationships that are likely to have future value to the forgiver are the ones in which forgiveness is most closely linked to better well-being is highly consistent with evolutionary accounts of the psychological processes underlying reciprocal altruism (Trivers, 1971).

Finally, we found evidence that well-being was also associated with increases in forgiveness, a notion that, as far as we know, has not been examined empirically. While this finding aligns well with the common belief that forgiveness is difficult to practice, it implies further that one is more capable of practicing it when well-being is high. Nonetheless, this last finding suggests that future researchers should attend to the notion that forgiveness and well-being may be bidirectionally related when untangling the relationships between the two.

Directions for Future Research

Controlled experiments might be the logical next step for exploring the associations between forgiveness

and well-being in greater detail. Second, because our findings show that "reconnecting" with valued relationship partners who transgress is important to well-being, large longitudinal research programs on relationships or well-being may benefit from incorporating a focus on forgiveness. This, moreover, would enable measurement of pretransgression closeness/commitment prior to a transgression, thereby avoiding a limitation for which our studies could be criticized.

Given the importance of apology as an apparent moderator of the associations between forgiveness and well-being (McCullough et al., 1997), further research is also needed to investigate how other conciliatory strategies on the part of the transgressor (e.g., compensation, gifts, expressions of remorse, and nonverbal expressions of distress, shame, etc.) might promote forgiveness, and thereby, psychological well-being. Research involving both victims and transgressors may be particularly useful for answering such questions. Third, it is worth investigating whether the apparent associations of forgiveness with relational well-being and psychological well-being have implications for understanding the relationship of forgiveness with physiological functioning and physical health (Lawler et al., 2003; Witvliet, Ludwig, & Vander Laan, 2001).

In their recent interest in the concept of forgiveness, psychologists have tended to study its various dimensions in isolation: Some studies have examined the relationship causes and consequences of forgiveness, some have focused on the social precursors of forgiveness, and some have focused on forgiveness' associations with health and well-being. In the present study, we have tried to integrate these concerns to provide a richer and more comprehensive picture of the basic links between forgiveness, relationship processes, and well-being.

NOTES

1. It is interesting that individual differences in transgression painfulness did not significantly moderate the Transgression-Related Interpersonal Motivations' (TRIMs) associations with well-being in either study, except for that between revenge and well-being in Study 1 (effect size $r = .18$). Thus, it was not included in analyses.

2. One limitation in our studies was that we measured pretransgression closeness and commitment after the transgression had already occurred. Although there is no way to know whether this method introduced bias or error, it is unlikely that such artifacts would make results invalid. If it introduces systematic elevations or deflations in participants' reports, this would affect their absolute scores on the measure but not their rankings relative to other participants. Thus, correlations with other variables would not be affected. If the bias introduces unsystematic error, this would simply handicap our ability to find any results—a limitation that would likely create underestimates of the importance of pretransgression closeness as a moderator of the forgiveness/well-being association.

3. To confirm that the closeness scale was distinct from the TRIM subscales, we conducted a maximum likelihood factor analysis on the 18 TRIM items and the 3 closeness items using data from the first assessments in both studies. We used oblimin rotation (delta = 0). Four factors emerged after nine iterations. The first factor accounted for 42.8% of the variance (6 Avoidance items), with pattern loadings > .59. The second factor accounted for 13.9% of the variance (all 5 Revenge items), with pattern loadings > .75. The third factor accounted for 7.3% of the variance (all 3 Closeness items), with pattern loadings > .79. The fourth factor accounted for 5% of the variance (4 Benevolence items), with pattern loadings > .47. One Avoidance item and one Benevolence item did not load on their target or nontarget factors with pattern loadings > .11, and another Benevolence item loaded on the revenge factor (–.36). The Avoidance factor was correlated with the Revenge, Benevolence, and Closeness factors at $r(N = 280) = .42$ and –.44, and –.59, respectively; the Revenge factor was correlated with the Closeness and Benevolence factors at $r(N = 280) = –.13$ and –.30, respectively; and the Closeness factor was correlated with the Benevolence factor at $r(N = 280) = .13$.

4. Gender and age differences in the within-persons associations of the TRIMs with well-being were consistently nonsignificant across Studies 1 and 2.

5. The traditional Sobel test for mediation does not consider potential covariance between the a and b paths for lower level mediation in random effects multilevel models (Kenny, Korchmaros, & Bolger, 2003). This can lead to inaccurate estimations of mediated effects when lower level associations vary randomly at upper levels. We used Korchmaros and Kenny's (2003) approach for calculating percentage amounts of mediation after adjusting for the ab covariance in the avoidance model (the association of benevolence and well-being did not vary randomly across upper level units). In Study 1, closeness still mediated avoidance's association with well-being 100%.

6. Between-persons closeness before the transgression and apology were not included in the reverse causal model to simplify analyses. Also, testing if these variables moderated well-being's prediction of closeness had less empirical rationale than did testing if they moderated forgiveness' prediction of closeness. Regardless, reverse models exploring these covariates did not alter results.

7. In Study 2, closeness still mediated the prospective associations of avoidance and revenge with well-being 100%, respectively, after using Korchmaros and Kenny's (2003) ab covariance adjustment.

8. It is worth noting that we found benevolence and well-being to be cross-sectionally associated in both datasets ($t = 7.99$ in Study 2). The quick prospective decay of this effect suggests that conciliatory stances following transgressions may only correspond to immediate, short-lived boosts in well-being, perhaps like bursts of self-empowerment.

REFERENCES

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, *63*, 596-612.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Bartone, P. T., Ursano, R. J., Wright, K. M., & Ingraham, L. H. (1989). The impact of a military air disaster on the health of assistance workers. *Journal of Nervous and Mental Disease*, *177*, 317-328.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529.

Brown, R. P. (2003). Measuring individual differences in the tendency to forgive: Construct validity and links with depression. *Personality and Social Psychology Bulletin*, *29*, 759-771.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models*. Newbury Park: Sage.

Cacioppo, J. T., Hawkley, L. C., Ernst, J. M., Burleson, M., Berntson, G. G., Nouriani, B., et al. (2006). Loneliness within a nomological net: An evolutionary perspective. *Journal of Research in Personality*, *40*, 1054-1085.

de Waal, F. B. M. (2000). Primates—A natural heritage of conflict resolution. *Science*, *289*, 586-590.
Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, *49*, 71-75.
Emmons, R. A. (1992). Abstract versus concrete goals: Personal striving level, physical illness, and psychological well-being. *Journal of Personality & Social Psychology*, *62*, 292-300.
Fincham, F. D. (2000). The kiss of the porcupines: From attributing responsibility to forgiving. *Personal Relationships*, *7*, 1-23.
Finkel, S. E. (1995). *Causal analysis with panel data*. Thousand Oaks, CA: Sage.
Freedman, S. R., & Enright, R. D. (1996). Forgiveness as an intervention goal with incest survivors. *Journal of Consulting and Clinical Psychology*, *64*, 983-992.
Hamilton, W. D. (1964). The genetical evolution of social behaviour. *Journal of Theoretical Biology*, *7*, 17-52.
Hebl, J. H., & Enright, R. D. (1993). Forgiveness as a psychotherapeutic goal with elderly females. *Psychotherapy*, *30*, 658-667.
Hedeker, D. (2004). An introduction to growth modeling. In D. Kaplan (Ed.), *The Sage handbook of quantitative methodology for the social sciences* (pp. 215-234). Thousand Oaks, CA: Sage.
Hodgins, H. S., & Liebeskind, E. (2003). Apology versus defense: Antecedents and consequences. *Journal of Experimental Social Psychology*, *39*, 297-316.
House, J. S., Landis, K. R., & Umberson, D. (1988). Social relationships and health. *Science*, *241*, 540-545.
Karremans, J., & Van Lange, P. A. M. (2004). Back to caring after being hurt: The role of forgiveness. *European Journal of Social Psychology*, *34*, 207-227.
Karremans, J. C., Van Lange, P. A. M., Ouwerkerk, J. W., & Kluwer, E. S. (2003). When forgiving enhances psychological well-being: The role of interpersonal commitment. *Journal of Personality and Social Psychology*, *84*, 1011-1026.
Kelley, H., & Thibault, J. W. (1978). *Interpersonal relationships: A theory of interdependence*. New York: John Wiley.
Kenny, D. A., Korchmaros, J. D., & Bolger, N. (2003). Lower level mediation in multilevel models. *Psychological Methods*, *8*, 115-128.
Korchmaros, J. D., & Kenny, D. A. (2003). *Step by step procedure for estimating lower-level mediation in random-effects multilevel models using HLM5* .Unpublished manuscript.
Krause, N., & Ellison, C. G. (2003). Forgiveness by god, forgiveness of others, and psychological well-being in late life. *Journal of the Scientific Study of Religion*, *42*, 77-94.
Krull, J. L., & MacKinnon, D. P. (2001). Multilevel modeling of individual and group level mediated effects. *Multivariate Behavioral Research*, *36*, 249-277.
Lawler, K. A., Younger, J. W., Piferi, R. L., Billington, E., Jobe, R., Edmondson, K., et al. (2003). A change of heart: Cardiovascular correlates of forgiveness in response to interpersonal conflict. *Journal of Behavioral Medicine*, *26*, 373-393.
Leary, M. R. (2004). The sociometer, self-esteem, and the regulation of interpersonal behavior. In R. F. Baumeister & K. D. Vohs (Eds.), *Handbook of self-regulation: Research, theory, and applications* (pp. 373-391). New York: Guilford.
McCullough, M. E., Bellah, C. G., Kilpatrick, S. D., & Johnson, J. L. (2001). Vengefulness: Relationships with forgiveness, rumination, well-being, and the Big Five. *Personality and Social Psychology Bulletin*, *27*, 601-610.
McCullough, M. E., Bono, G., & Root, L. M. (2007). Rumination, affect, and forgiveness: Three longitudinal studies. *Journal of Personality and Social Psychology*, *92*, 490-505.
McCullough, M. E., Fincham, F. D., & Tsang, J. (2003). Forgiveness, forbearance, and time: The temporal unfolding of transgression-related interpersonal motivations. *Journal of Personality and Social Psychology*, *84*, 540-557.
McCullough, M. E., & Hoyt, W. T. (2002). Transgression-related motivational dispositions: Personality substrates of forgiveness and their links to the Big Five. *Personality and Social Psychology Bulletin*, *28*, 1556-1573.
McCullough, M. E., Rachal, K. C., Sandage, S. J., Worthington, E. L., Jr., Brown, S. W., & Hight, T. L. (1998). Interpersonal forgiving in close relationships. II: Theoretical elaboration and measurement. *Journal of Personality and Social Psychology*, *75*, 1586-1603.
McCullough, M. E., Worthington, E. L., Jr., & Rachal, K. C. (1997). Interpersonal forgiving in close relationships. *Journal of Personality and Social Psychology*, *73*, 321-336.
Nesse, R. M. (2001). Natural selection and the capacity for commitment. In R. M. Nesse (Ed.), *Evolution and the capacity for commitment* (pp. 1–36). New York: Russell Sage.
Nezlek, J. B. (2001). Multilevel random coefficient analyses of event- and interval-contingent data in social and personality psychology research. *Personality and Social Psychology Bulletin*, *27*, 771-785.
Ohbuchi, K., Kameda, M., & Agarie, N. (1989). Apology as aggression control: Its role in mediating appraisal of and responses to harm. *Journal of Personality and Social Psychology*, *56*, 219-227.
Poloma, M. M., & Gallup, G. H. (1991). Unless you forgive others: Prayer and forgiveness. In M. M. Poloma & G. H. Gallup (Eds.), *Varieties of prayer* (pp. 85-106). Philadelphia: Trinity Press.
Preacher, K. J., & Leonardelli, G. J. (2001, March). *Calculation for the Sobel test: An interactive calculation tool for mediation tests* [Computer software]. Available from http://www.unc.edu/~preacher/sobel/sobel.htm
Raudenbush, S. W., Bryk, A., Cheong, Y. F., & Congdon, R. (2000). *HLM 5: Hierarchical linear and nonlinear modeling*. Lincolnwood, IL: Scientific Software International.
Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, *26*(4), 419-435.
Rusbult, C. E., Verette, J., Whitney, G. A., Slovik, L. F., & Lipkus, I. (1991). Accommodation processes in close relationships: Theory and preliminary empirical evidence. *Journal of Personality and Social Psychology*, *60*, 53-78.
Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68-78.
Seybold, K. S., Hill, P. C., Neumann, J. K., & Chi, D. S. (2001). Physiological and psychological correlates of forgiveness. *Journal of Psychology and Christianity*, *20*(3), 250-259.
Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhart (Ed.), *Sociological methodology 1982* (pp. 290-312). San Francisco: Jossey-Bass.
Trivers, R. L. (1971). The evolution of reciprocal altruism. *Quarterly Review of Biology*, *46*, 35-57.
Tsang, J., McCullough, M. E., & Fincham, F. (2006). The longitudinal association between forgiveness and relationship closeness and commitment. *Journal of Social and Clinical Psychology*, *25*, 448-472.
Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070.
Witvliet, C. v. O., Ludwig, T. E., & Vander Laan, K. L. (2001). Granting forgiveness or harboring grudges: Implications for emotion, physiology, and health. *Psychological Science*, *12*, 117-123.
Zechmeister, J. S., Garcia, S., & Romero, C. (2004). Don't apologize unless you mean it: A laboratory investigation of forgiveness and retaliation. *Journal of Social and Clinical Psychology*, *23*, 232-564.

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