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When Does Priming Justice Promote Forgiveness?

On the Importance of Distributive and Procedural Justice for Self and Others

Todd Lucas[1]

Peter Strelan[2]

Johan Karremans[3]

Robbie M. Sutton[4]

Erfan Najmi[5]

Zaki Malik[1]

Wayne State University, Detroit, MI USA[1]

University of Adelaide, Adelaide, SA, Australia [2]

Radboud University, Nijmegen, Netherlands[3]

University of Kent, Canterbury, UK[4]

Eastern Michigan University, Ypsilanti, MI USA

Abstract

Two studies show that thinking about justice can both enhance and impede forgiveness, depending on whether thoughts about distributive and procedural justice for self and others are activated. In Study 1 (n = 197), participants expressed more forgiveness towards a prior transgressor when primed to think about justice for self or procedural justice for others, and less forgiveness when primed to think about distributive justice for others. Study 2 (n = 231) used an alternate priming method and replicated these effects by inducing an interpersonal transgression and measuring forgiveness intentions, emotions and behavior. Study 2 also showed that priming justice influences forgiveness especially when the perceived severity of an interpersonal offense is high. The current research shows that activating justice cognitions can enhance or impinge on forgiveness in predictable ways. We discuss contributions to emerging justice theory, potential implications, and future directions.

 Key words: Justice beliefs; forgiveness; distributive justice; procedural justice; personal justice; general justice; social values; belief in a just world; Cyberball

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As an alternative to revenge, conflict with others may be resolved through forgiveness. Forgiveness encompasses a transformation that occurs when a victim converts negative responses towards a transgressor into positive responses (McCullough, Worthington, & Rachal, 1997). Instead of retaliating, seeking punishment, or demanding compensation, a forgiving person responds to wrongdoing with benevolence and compassion. Numerous health and social benefits can accrue from opting for forgiveness (e.g., McCullough, Root, Tabak, & Witvliet, 2009; Seawell, Toussaint, & Cheadle, 2014). In turn, scholars and practitioners have increasingly sought to better understand the psychological underpinnings of forgiveness (Exline, Worthington, Hill, & McCullough, 2003; McCullough et al., 2009).

Although several cognitions and dispositional antecedents have been implicated (e.g., Berry, Worthington, O'Connor, Parrott, & Wade, 2005; McCullough & Hoyt, 2002; Strelan, 2007), justice has emerged as a fundamental precursor to forgiveness (Exline et al., 2003; Strelan & van Prooijen, 2013; Wenzel & Okimoto, 2013). However, justice is multifaceted and recent studies highlight both positive and negative associations with forgiveness, depending on how justice cognitions are operationalized (Lucas, Young, Zhdanova & Alexander, 2010; Strelan & Sutton, 2011). This duality suggests a critical need to better understand the ways in which justice is precisely linked to forgiveness. In the current research, we distinguish between distributive and procedural justice for self and others to illuminate how justice both enhances and impedes forgiveness (Lucas, Zhdanova & Alexander, 2011). In doing so, we suggest that concern for personal well-being and expression of social values may be differentially activated in thinking about distributive and procedural justice for self and others in ways that affect forgiveness.

Justice and Forgiveness

Originally, justice was conceptualized as a barrier to forgiveness (e.g., Exline & Baumeister, 2000; Reed & Aquino, 2003). Indeed, the justice literature has shown that victims often attempt to restore a sense of fairness by demanding compensation or seeking revenge (e.g., Darley & Huff, 1990; Kaiser, Vick, & Major, 2004; Tripp, Bies, & Aquino, 2007). However, this research exclusively focused on retributive justice, thus grounding forgiveness in a perspective on justice concerned primarily with sanctioning transgressors (e.g., Tyler, Boeckmann, Smith, & Huo, 1997). Initial research thus overlooked that justice also encompasses prosociality, which may include the desire to distribute resources equally and treat others with respect (e.g., Lind & Tyler, 1988).

Two lines of research have since emerged to illustrate how justice may be positively linked to forgiving others. First, prime-to-behavior approaches (for review, Bargh & Morsella, 2010) have shown that justice cognitions may be momentarily activated and subsequently linked to forgiveness. Of note, Karremans and Van Lange (2005) used conceptual priming to show that individuals were more rather than less forgiving when experimentally primed with social justice. Such increases were attributed to the capacity of thinking about justice to activate prosocial as opposed to retributive values. These studies were also among the first to show that justice can be conceptually primed and linked to interpersonal behavior (see also Lucas, Rudolph, Zhdanova, Barkho, & Weidner, 2014; Ståhl, Vermunt, & Ellemers, 2008; Strelan & Van Proojen, 2013).

A second approach has linked forgiveness to individual differences (i.e., justice beliefs). Justice beliefs are multidimensional (Dalbert, 2009). A particularly important distinction separates one's general belief in justice for others (i.e., *general justice for others*) from the belief that one personally gets what one deserves (i.e., *personal justice for self*). General and personal

justice beliefs are known to uniquely relate to social attitudes (e.g., Bègue & Bastounis, 2003; Lipkus, Dalbert, & Seiglar, 1996, Sutton & Douglas, 2005; Sutton et al., 2008), including forgiveness. Whereas believing in justice for one's self is positively associated with forgiveness, believing in justice for others is negatively associated (Lucas et al., 2010; Strelan & Sutton, 2011). A positive association with personal justice suggests that forgiveness may reflect a victim's concern for personal well-being, such as deflecting self-evaluative threat or preserving a relationship with a transgressor (e.g., Karremans, Van Lange, Ouwerkerk, & Kluwer, 2003). On the other hand, a negative link to believing in justice for others may indicate protective social values, or a desire to punish others (Bègue & Bastounis, 2003).

Distributive and Procedural Justice for Self and Others

Justice may also be partitioned by distinguishing between distributive and procedural justice. Distributive justice refers to the perceived fairness of outcomes or resource allocations (Adams, 1965), whereas procedural justice refers to the perceived fairness of decision processes used to determine outcomes (Lind & Tyler, 1988; Thibaut & Walker, 1975). Although evaluations of distributive and procedural justice affect a broad range of social attitudes and behavior (for review, Jost & Kay, 2010), their connections to forgiveness have not been widely investigated (though see Aquino, Tripp, & Bies, 2006). Yet, emerging literature suggests that the general-personal and distributive-procedural justice distinctions can be concurrently specified, and that doing so can more precisely link justice to both callous and compassionate social response (Lucas et al., 2011; Lucas & Wendorf, 2012). Simultaneously specifying both justice distinctions was initially introduced as an individual difference framework that characterized people according to their beliefs about distributive and procedural justice for self and others (Lucas et al., 2011). Subsequent research has shown that this four-factor

conceptualization can also be specified as a conceptual priming framework, and that temporary activations of distributive and procedural justice for self and others can affect interpersonal attitudes and behavior (Lucas et al., 2014).

Crucially, the four-factor justice distinction may provide a framework for linking personal well-being and value expression motives to forgiveness (see also, Feather, 1999). Like justice, values can be specified not only as multidimensional individual differences (e.g., Schwartz, 1992), but also as temporary activations (e.g., Hertel & Fiedler, 1998). A four-factor conceptualization of justice suggests that retributive and benevolence-oriented values may be idiosyncratically activated by thinking about distributive and procedural justice. Specifically, distributive justice tendencies and cognitions may more strongly reflect proself values, whereas procedural justice tendencies and cognitions may more robustly reflect prosocial values (Lucas et al., 2011). This distinction is further partitioned by general and personal justice, which suggests that values more strongly guide concern for one's own well-being when extrapolated as personal justice beliefs, whereas concern for social well-being is affected when distributive and procedural justice are expanded as general justice beliefs (Lucas et al., 2011). Thus, distributive and procedural justice for self may reflect a personally-oriented consideration of forgiveness that implicates motivations to protect personal well-being, whereas distributive and procedural justice for others may reflect socially-oriented concerns that implicate motivations to express retributive and benevolence social values.

Guided by proposed connections to personal well-being and value expression motives, a four-factor approach provides a comprehensive set of hypotheses for linking justice to forgiveness. First, priming thoughts about distributive and procedural justice for self should enhance forgiveness. The theoretical basis is that personal identity will be activated, and

forgiveness will be initiated out of concern for one's own well-being, including deflecting self-evaluative threat or maintaining a transgressor relationship (i.e., personally-oriented well-being). Second, priming thoughts about procedural justice for others should also enhance forgiveness. This hypothesis stems from theorizing that tolerance and goodwill may be especially associated with thoughts about procedural justice for others (i.e., socially-oriented benevolence values). Finally, we would expect thoughts about distributive justice for others to reduce forgiveness by activating safety and security values (i.e., socially-oriented retributive values).

Justice, Transgression Severity, and Forgiveness

Transgression severity is another key predictor of forgiveness (Fincham, Jackson, & Beach, 2005). With respect to justice, perceived transgression severity has been shown to play a moderating role; justice tendencies are more strongly associated with forgiveness when transgressions are perceived as severe (Strelan & Sutton, 2011). Of present interest, activating justice might similarly affect forgiveness only or especially when perceived transgression severity is high. This severity-moderator hypothesis is additionally supported by literature that suggests severe transgressions threaten the self more than benign transgressions, and that people may be especially motivated to guard against social-evaluative threat (e.g., Dickerson, Gable, Irwin, Aziz, & Kemeny, 2009). It follows that priming cues may be most impactful when serious as opposed to benign personal consequences are at stake (e.g., Carter-Sowell, Chen & Williams, 2008). Moreover, justice may be especially psychologically critical to individuals when one's sense of the world as a fair and predictable place is threatened (e.g., Lerner, 1980), and recent research shows that severe transgressions promote a desire to reaffirm one's social values (Okimoto & Wenzel, 2008). Assessing the moderator potential of transgression severity may

also be practically important. Namely, inducing justice as a means of altering forgiveness may

be of limited value if thinking about justice cannot alter reactions to severe transgressions.

The Present Research

   We conducted two studies to demonstrate how multifaceted thoughts about justice can be

precisely formulated as initial activations, and show that inducing specific justice cognitions may

enhance or impede forgiveness. We deliberately activated thoughts about distributive and

procedural justice for self and others and measured effects on forgiveness. In Study 2, we also

assessed perceived transgression severity as a moderator. Three sets of hypotheses guided our

research. First, forgiveness will be encouraged when thoughts about justice for self and

procedural justice for others were induced. Second, activating thoughts about distributive justice

for others will diminish forgiveness. Finally, perceived transgression severity will moderate the

effects of thinking about justice on forgiveness, and hypothesized effects will be best observed

when perceived severity was high.

<div align="center">**Study 1**</div>

   In Study 1, we examined initial activations of justice in response to a self-generated recall

of a hurtful personal transgression. Thus, our initial focus was on demonstrating the potential of

thinking about justice to influence forgiveness of a personally recalled instance of severe

interpersonal transgression. We experimentally primed distributive and procedural justice for self

and others by administering their individual difference measures. In doing so, we considered

whether thinking about justice altered forgiveness above and beyond links to individual

difference tendencies, and we evaluated whether experimental effects were due to activation of

justice cognitions rather than endorsement of justice per se. Study 1 also considered the effects of

thinking about justice on positive and negative emotional states in order to assess whether

changes in affect would be relevant to any of the hypothesized effects of thinking about justice on forgiveness.

Method

Participants

A convenience sample of 197 participants (51 male) was recruited from a large urban university in the Midwestern United States, participating online for course credit. Participants were predominantly Caucasian (76) and African American (44) (age range 18 to 55 years; $M =$ 21.80, $SD =$ 5.74).

Experimental Procedure

We randomly assigned participants to one of five versions of an online survey in which thoughts about justice were experimentally manipulated. The structure was a fully crossed 2 (distributive vs. procedural) x 2 (self vs. others) between-participants design. We also included a control condition in which there was no priming.

Thoughts about justice were manipulated using a 16-item measure of distributive and procedural justice beliefs for self and others (Lucas et al., 2011). When used to assess individual differences, this measure captures tendencies to see rules and treatment (procedural justice beliefs) and also outcomes and allocations (distributive justice beliefs) as fair for self and others. The distributive justice beliefs subscales measure beliefs about the deservedness of outcomes or allocations for one's self (DJ-self) and others (DJ-others). A sample item is 'I/Others usually receive outcomes that I/they deserve.' The procedural justice beliefs subscales measure beliefs about the deservedness of rules, processes, and treatment towards one's self (PJ-self) and others (PJ-others). A sample item is 'I am/Others are generally subjected to processes that are fair.' (1 = *strongly disagree*, 7 = *strongly agree*). Four subscale totals are created by averaging the four

appropriate items. All subscales were internally consistent (α = .86 to .96) and correlated in a range consistent with prior research (rs = .39-.65, ps < .001).

To create an experimental manipulation, participants completed only one of the four justice subscales prior to assessing forgiveness. The rationale was that completing items that frame only one specific kind of justice (e.g., *only* DJ-self) would make certain thoughts about justice more cognitively accessible. This method of priming stems from theory and research on accessibility (Higgins, 1996) and is validated by a considerable body of work on conceptual priming that suggests temporary activation of a trait construct or stereotype can exert a passive and subtle influence on subsequent behavior in other contexts (Bargh, Chen & Burrows, 1996). Like many conceptual priming approaches (Bargh & Chartrand, 2000), differential administration of a trait justice measure manipulates cognitive accessibility by enhancing the availability of a justice concept to individuals (see also Andreychik & Gill, 2009). Importantly, accessibility is distinguished from endorsement through this method, such that specific attitudes, values, or cognitions may be activated without altering an individuals' endorsement of them. The manipulation embodies a supraliminal approach to conceptual priming, as participants are aware that they are completing a justice rating scale, although unaware that the underlying content serves to prime a specific justice cognition. An identical set of instructions accompanied each of the four justice conditions and explained that subsequently presented items would ask about fairness. Instructions in the four justice conditions were accompanied by an image of Justitia, the Roman goddess of justice, intended to encourage further activation of justice (Karremans & Van Lange, 2005). At the end of the study, participants completed the three justice subscales that were not initially experimentally assigned to them in order to consider whether priming effects were due to activation of specific justice concepts, rather than changes

in endorsement of them (Andreychik & Gill, 2009). To avoid priming justice, control group

participants completed all four justice subscales at the end of the survey and did not view an

image of Justitia at any point.

Measures

Forgiveness. Participants completed the Transgression Related Interpersonal Motivations

(TRIM) scale (McCullough, Fincham, & Tsang, 2003). Participants recalled and described a

transgression (e.g., "my friend lied to me when I asked for the truth"). Items (1 = *strongly agree*;

5 = *strongly agree*) then assessed personal motivations for revenge, avoidance, and benevolence.

Items for revenge and avoidance were reversed-coded, such that higher scores on all three

subscales indicated greater forgiveness motivations. Following prior research (e.g., Burnette,

McCullough, Van Tongeren, & Davis, 2012), and because subscales were significantly

correlated (*rs* = .27 − .63, *ps* < .001), TRIM subscales were combined and averaged to indicate a

total forgiveness score (α = .90).

Positive and Negative Affect. To ensure that hypothesized effects were not due to changes in

affect, participants also completed the positive and negative affect scale as an outcome (Watson,

Clark & Tellegen, 1988). Participants indicated the extent to which they were currently

experiencing ten positively-valenced and ten negatively-valenced feelings (1 = *very slightly or*

not at all; 5 = *extremely*. Higher scores indicate greater arousal of positive (α = .91) and negative

(α = .91) affect.

Analytic Strategy

A 2 (self-other) x 2 (distributive-procedural) between-participants univariate ANOVA

was conducted to assess the effects of priming justice on forgiveness, and to consider any effect

of justice primes on positive and negative affect. Control group comparisons for justice

conditions were conducted using a one way ANOVA and LSD comparison. To ensure that any effect on forgiveness could be attributed to activating thoughts about justice, and not to changing the level or endorsement of justice beliefs, one-way ANOVAs were also used to compare the four justice individual differences subscale means across the five experimental conditions.

Results

Effects on Forgiveness

The between-participants main effects were marginal for both the self-other manipulation, $F(1, 147) = 3.34$, $p = .070$, $\eta^2_{partial} = .022$, and the distributive-procedural manipulation, $F(1, 147) = 691.25$, $p = .085$, $\eta^2_{partial} = .020$. Participants were somewhat more forgiving when primed to think about justice for self than for others ($M_{self} = 4.81$; $SD = 0.67$; $M_{others} = 4.61$; $SD = 0.78$; $d = .29$), and when primed to think about procedural as opposed to distributive justice ($M_{procedural} = 4.81$; $SD = 0.72$; $M_{distributive} = 4.59$; $SD = 0.74$; $d = .30$). Of greater interest, main effects were qualified by the predicted interaction, $F(1, 147) = 8.63$, $p = .004$, $\eta^2_{partial} = .055$. As seen in Table 1 and Figure 1, thinking about distributive versus procedural justice for the self had no effect, $t(147) = 0.84$, $p = .41$, $d = -.19$. However, participants were less forgiving when primed to think about distributive justice vs. procedural justice for others, $t(147) = 3.29$, $p = .001$, $d = .72$.

Control Group Comparisons

The effect of priming justice was significant for the control group comparison, $F(4, 192) = 3.95$, $p = .004$. As seen in Table 1, when compared to the control group, thinking about justice for self resulted in greater forgiveness for distributive justice, $t(193) = 1.97$, $p = .050$; $d = .42$, but not procedural justice, $t(193) = 1.17$, $p = .25$; $d = .25$. For other-primed participants, thinking about procedural justice also resulted in significantly greater forgiveness than the control group,

$t(193) = 1.99$, $p = .048$; $d = .40$, whereas thinking about distributive justice resulted in less

forgiveness, though this comparison was not significant, $t(193) = -1.44$, $p = .152$; $d = .31$. To

supplement control group comparisons, we conducted planned contrasts in which distributive

justice for self, distributive justice for others, and procedural justice for others were individually

compared to the mean of all other conditions. Given specific directional hypotheses about each

of the four experimental cells relative to the control group, we conducted these comparisons as

one-tailed tests. Forgiveness was significantly higher among participants who thought about

distributive justice for self, $t(193) = 1.87$, $p = .031$, $d = .27$, and procedural justice for others,

$t(193) = 1.89$, $p = .030$, $d = .27$, whereas forgiveness was significantly lower for participants who

thought about distributive justice for others, $t(193) = -3.31$, $p < .001$, $d = .48$.

Individual Differences in Justice Beliefs

One-way ANOVAs confirmed no significant differences across the five experimental

conditions for measures of either distributive justice beliefs for self, $F(4, 192) = 0.85$, $p = .498$,

$\eta^2_{partial} = .018$, or procedural justice beliefs for self, $F(4, 192) = 1.06$, $p = .379$, $\eta^2_{partial} = .022$.

Similarly, experimental conditions did not differ for either distributive justice beliefs for others,

$F(4, 192) = 0.52$, $p = .995$, $\eta^2_{partial} = .001$, or procedural justice beliefs for others, $F(4, 192) =$

1.21, $p = .309$, $\eta^2_{partial} = .025$. Thus, the effect of justice primes on forgiveness could be attributed

to activating thoughts about justice.

Positive and Negative Affect

For positive affect there was no effect of the self-other manipulation, $F(1, 143) = 1.31$, p

$= .255$, $\eta^2_{partial} = .009$, the distributive-procedural manipulation, $F(4, 143) = 1.13$, $p = .290$, $\eta^2_{partial}$

$= .008$ or their interaction $F(1, 143) = 0.41$, $p = .499$, $\eta^2_{partial} = .003$. Likewise, no significant

effect on negative affect emerged for the self-other manipulation, $F(4, 143) = 2.10$, $p = .150$,

$\eta^2_{partial} = .014$ or the interaction, $F(4, 143) = 0.44$, $p = .507$, $\eta^2_{partial} = .003$. However, a significant main effect of distributive-procedural manipulation emerged for negative affect, $F(1, 143) = 4.54$, $p = .035$, $\eta^2_{partial} = .031$. The procedural justice primes elicited greater negative affect than distributive justice ($M_{procedural} = 2.16$, $SD = 0.98$ vs. $M_{distributive} = 1.83$, $SD = 0.81$). To ensure that effects on forgiveness were robust, a 2 x 2 ANCOVA was performed while covarying for negative affect. Main effects remained for the self-other manipulation, $F(1, 142) = 5.58$, $p = .020$, $\eta^2_{partial} = .038$ the distributive-procedural manipulation, $F(1, 142) = 3.78$, $p = .054$, $\eta^2_{partial} = .026$, and their interaction, $F(1, 142) = 6.83$, $p = .010$, $\eta^2_{partial} = .046$. Thus, while thinking about procedural justice also increased negative affect, this did not explain effects on forgiveness.

Discussion

Study 1 confirmed the hypothesis that activating thoughts about justice for self or procedural justice for others would promote forgiveness, whereas activating thoughts about distributive justice for others would reduce forgiveness. Similar to other conceptual priming studies (e.g., Andreychik & Gill, 2009), analysis of individual differences suggested that these effects were not due merely to changing the endorsement of justice beliefs. Thus, Study 1 suggests that merely thinking about justice may be sufficient to alter forgiveness of others. This effect was not explained by affective arousal, although thinking about procedural justice was associated with significantly greater negative affect. Somewhat unexpectedly, forgiveness was enhanced by thinking about distributive justice for self more so than procedural justice for self.

Although generally supporting hypotheses, Study 1 was limited in several ways. First, a recall-based measure was used to assess forgiveness, such that effects could be due to the potential of priming justice in different ways to lead participants to differentially recall prior offenses rather than altering forgiveness per se. Second and related, measurement of forgiveness

in Study 1 was non-behavioral. Third, the self-report transgression measure instructed participants to recall a hurtful rather than benign personal transgression. In doing so, Study 1 truncated transgression severity and did not provide an opportunity to consider its potential to act as a moderator of justice priming effects.

To address these limitations, we conducted a second study in which forgiveness was assessed in response to a deliberately induced interpersonal transgression, thus reducing the potential for recall bias to impinge. In tandem, we measured forgiveness not only through self-report, but also as a behavioral response to the induced interpersonal transgression. Finally, we evaluated the potential of perceived transgression severity to moderate effects of thinking about justice on forgiveness, and we developed an alternate method of priming justice that allowed us to simultaneously assess associations with justice tendencies.

Study 2

Method

Participants

We recruited 439 U.S. participants (205 male) via the paid labour-sourcing site, Mechnical Turk. Two subsequently described procedures were used to identify careless responding, which included general inattentiveness or providing a satisficing response to the experimental manipulation of justice, defined as engaging the manipulation task without sufficient cognitive effort (Krosnick, 1991). These procedures identified 208 careless responders (47.38%) and resulted in a final effective sample size of 231 participants (89 male). The frequency of careless responding that we identified was remarkably consistent with prior experimental studies that have used similar detection methods (Oppenheimer, Meyvis & Davidenko, 2009). To further validate procedures used to identify careless responders, we

compared the study completion timestamps of excluded and included participants to one another.

Excluded responders completed the online session significantly faster than participants who were

included, $M_{Excluded} = 939.14$s, $SD = 706.59$ vs. $M_{Included} = 1083.81$s, $SD = 488.92$; $t(401) = -2.428$,

$p = .016$; $d = .24$. The final effective sample was predominantly Caucasian (74.90%) and ranged

in age from 18 to 68 years ($M = 35.43$, $SD = 11.09$).

Experimental Procedure

Inducing Transgression. To enact an interpersonal transgression, we employed Dorn et al.'s

(2013) adaption of the Cyberball paradigm (Williams & Jarvis, 2006) to forgiveness. Cyberball

has been widely used to study social exclusion. Participants play a computerized game of toss,

ostensibly with two or more other players whose computer responses are predetermined and can

be experimentally manipulated. After a few tosses, other players exclude the participant for the

rest of the round. Research supports that participants feel rejected or ostracized by this behavior,

and that exclusion is psychologically hurtful (e.g., Eisenberger, Liberman, & Williams, 2003).

Thus, the Cyberball paradigm is a useful surrogate for creating a laboratory-based interpersonal

transgression.

Following Dorn et al. (2013), we specified two rounds of ball tossing. In round one,

participants played with two other participants (Jon and Steve), who excluded the participant

after he or she had received two throws. After completing subsequently described measures and

the justice priming task, participants engaged in a second round of ball tossing that once again

included two other players. One participant was retained from the prior transgression round of

ball tossing (Steve), while one ostensibly new participant was introduced (Bill). Participants

were a priori alerted that one participant from the first round of Cyberball would be retained in

the second round, and forgiveness was assessed by considering each participant's self-reported

forgiveness towards prior players, as well as their behavior towards the retained player in the second round.

Cyberball 4.0 and Qualtrics software were used to specify and deliver both rounds, and fidelity checks were completed after each round. After the first round, ostracism manipulation check items asked participants to rate the extent to which they were ignored and excluded on 5-point scales, and to estimate the percentage of throws they received during their first Cyberball interaction. Participants were also instructed to report the names of the two other players whom they had just interacted with after both rounds. After the second round, participants were additionally asked to identify the participant with whom they played a second time (Steve). Participants were identified as inattentive and excluded from the final analysis if they failed to accurately report the names of other players in either round, or if they failed to report that they had previously played with Steve. Correctly identifying Steve was vital to assessing subsequent forgiveness attitudes and behavior in denoting that each participant was sufficiently attentive to remember and ultimately react to their transgressor from the first round of Cyberball.

Manipulation of Justice. We used the same 2 (distributive vs. procedural) x 2 (self vs. others) between-participants experimental design, in which participants were primed to think specifically about distributive or procedural justice for self or others. We once again included a control group condition in which participants were not primed to think about justice. The justice manipulation was employed following the Cyberball induced transgression, after completion of fidelity checks. The subsequently described manipulation task was introduced to participants as an activity to keep them engaged while waiting for a new player to join for the second round of Cyberball.

We developed an alternate method of priming justice for Study 2 (see supplemental material), adapted from Gardner, Gabriel, and Lee's (1999) self construal manipulation. In its original form, participants are asked to count the number of pronouns that appear in a short written essay. The short essay is deliberately written either in the first-person singular (e.g., I, my, me) or in the first-person plural form (e.g., we, our, us). The task of counting pronouns is known to shift the equilibrium of self-construal, making aspects of independence or interdependence more salient (Gardner et al., 1999). For present purposes, two original and justice-themed short essays were developed. To enact an experimental manipulation of justice for self versus others, each essay was written either in the first-person singular or in the third-person plural (e.g., they, them, their), and participants were instructed to count the number of times that a pronoun appeared in the essay. To simultaneously enact an experimental manipulation of distributive versus procedural justice, the content of justice stories was also experimentally varied. Participants counted pronouns in a passage written either about distributive justice or about procedural justice. In both essays, participants were also instructed to count the number of times the word "fair" appeared. In each of the four justice conditions, a pronoun appeared 16 times and the word "fair" appeared 6 times. To create a control condition, participants read a short essay that did not contain pronouns and was unrelated to justice. Instead, control group participants were instructed to count the number of times that an adverb (e.g., simply, quickly, absolutely), and the word "yellow" appeared. There were 16 adverbs in the control condition and 6 uses of the word "yellow." The task of counting pronouns/adverbs was also used to identify a satisficing response to the experimental manipulation of justice; participants were identified as careless if they reported counting fewer than 12 pronouns/adverbs or more than 20 pronouns/adverbs ($M = 15.41$, $SD = 2.77$).

Measures

Self-reported forgiveness. Participants completed the Decisional Forgiveness Scale (DFS) and the Emotional Forgiveness Scale (EFS; Hook, Worthington, Utsey, Davis, & Burnette, 2012; Worthington, Hook, Utsey, Williams, & Neil, 2007), both of which were administered just prior to participating in the second round of Cyberball (1 = *strongly disagree;* 5 = *strongly agree*). The eight-item DFS (α = .83) assesses forgiveness intentions by measuring the extent to which one has made a decision to forgive someone for a prior specific offense. The eight-item EFS (α = .89) captures the extent to which one has experienced emotional forgiveness following a specific offense. Participants were instructed to answer items for both subscales with reference towards the players that had just excluded them in the initial round of Cyberball, one of whom they would interact with once again. Separate DFS and EFS scores were calculated by averaging scale items, with higher scores indicating greater forgiveness. The two scales were moderately correlated (r = .655, p < .001).

Forgiveness behavior. Following Dorn et al. (2013), we counted the number of tosses each participant allotted in round two to Steve (the prior transgressor). This total was converted to a percentage out of 8 total throws allotted to each participant in the second round. A higher percentage of tosses to Steve indicated greater forgiveness. Due to a server error, behavioral responses were only recorded for 149 participants. However, this total fulfilled the a priori recruitment goal of approximately 30 behavioral responses per experimental cell, which exceeds recent sample size recommendations (Simmons, Nelson, & Simonsohn, 2011).

Perceived transgression severity. Participants completed four need-threat measures commonly used with Cyberball (Williams, 2009). These measures were administered after the initial Cyberball exclusion but prior to experimental manipulation of justice. Need-threat scales

separately assessed needs for belonging, self-esteem, meaningful existence, and control. Cyberball-induced transgressions threaten each of these needs, resulting in less belonging, lower self-esteem, a sense of meaninglessness, and less perceived control (e.g., Carter-Sowell et al., 2008; Eisenberger et al., 2003; Williams, Cheung & Choi, 2000). Moreover, need threat measures are essential in measuring individual differences in the effects of Cyberball exclusion, which affects some individuals more than others (Williams, 2009). Consistent with previous research (Williams, 2009), we created a need-threat composite as the average of the four subscale means, with higher scores indicating greater need-threat. All need threat items were answered on a 5-point Likert-type scale ranging from 1 (*not at all*) to 5 (*extremely*) ($\alpha = .70$).

<u>Beliefs about justice.</u> All participants completed the same 16-item measure of distributive and procedural justice beliefs for self and others as in Study 1, which was administered as straight-forward individual difference measures in Study 2. Four subscale scores were once again created by averaging the four appropriate items. All subscales were again internally consistent ($\alpha = .93$ to .96) and correlated in a range consistent with prior research ($rs = .52-.73$, $ps < .001$).

Analytic Strategy

Three-step hierarchical multiple regressions were performed to assess interactive effect of need-threat and justice priming on forgiveness. Significance was assessed using r square change and the regression weights of predictors newly entered at each step. The need-threat composite was mean-centered and entered at the first step, along with vectors for the self-other (-1 = self; 1 = others) and distributive-procedural (-1 = distributive; 1 = procedural) justice manipulations, where the main effect of each was assessed. Two-way interactions were entered and assessed at the second step and included the interaction of need-threat with each justice manipulation, as well as the two-way interaction of self-other and distributive-procedural manipulations. The

hypothesized three-way interaction of need-threat with both of the justice manipulations was

assessed on the third and final step. Significant interactions were probed by modeling the effects

of justice manipulations separately for individuals high and low in need-threat (Aiken & West,

1991). To ensure an adequate number of observations for these comparisons, we selected cases

one-half standard deviation above and below the mean.

<div align="center">**Results**</div>

Self-reported forgiveness

Table 2 presents multiple regression results for the DFS and EFS. For both regressions,

the first step was significant. Regression weights revealed that only the main effect of need-

threat was significant, and that individuals experiencing greater need-threat from exclusion self-

reported lower decisional and emotional forgiveness prior to the second round of Cyberball. Of

greater interest, need-threat was qualified by the hypothesized three-way interaction with justice

manipulations at the third step of each regression. We probed interactions separately for high and

low need-threat by conducting 2 (self versus others) x 2 (distributive versus procedural)

ANOVAs with LSD comparison for both the DFS and EFS. No significant effects of priming

justice emerged for participants low in need-threat. However, the self-others x distributive-

procedural interaction was significant for participants high in need-threat for both the DFS ($F(1,$

$39) = 8.53, p = .006, \eta^2_{partial} = .179$) and the EFS ($F(1, 39) = 9.46, p = .004, \eta^2_{partial} = .195$) . As

seen in Table 1 and in Figure 2, self-reported forgiveness was higher for distributive justice than

procedural justice among participants primed to think about self for both the DFS ($p = .190, d =$

$.48$) and the EFS ($p = .093, d = .71$), though these differences were not statistically significant

suggesting that the distinction between distributive and procedural justice was less critical when

priming self-justice. However, self-reported forgiveness was significantly lower for distributive

than procedural justice among participants primed to think about others for both the DFS ($p =$

.011, d = -1.54) and the EFS (p = .014, d = -1.26).

Forgiveness behavior

Table 2 also presents results of the multiple regression analysis conducted for Cyberball

forgiveness behavior. The first step approached significance, and regression weights revealed

once again that only the main effect of need-threat was significant. Identical to self-report

measures, individuals experiencing greater need-threat from exclusion in the initial round were

less likely to behave forgivingly towards the transgressor in the second round. Of greater interest,

the effect of need-threat was once again qualified by the hypothesized interaction with justice

manipulations at the third step, which also approached significance. We similarly probed this

interaction by separately considering individuals high and low in need-threat using a 2 (self

versus others) x 2 (distributive versus procedural) univariate ANOVAs with LSD comparison

(Table1 and Figure 2). For participants low in need-threat only the main effect of the

distributive-procedural justice manipulation was significant, $F(1, 27) = 11.79$, $p = .002$, $\eta^2_{partial} =$

.304. Low need-threat participants behaved more forgivingly when primed with procedural

justice (M =4.09, $SD = 0.30$) than when primed with distributive justice ($M = 3.50$, $SD = 0.63$).

For high need-threat participants, only the hypothesized self-others x distributive-procedural

interaction was significant $F(1, 29) = 4.489$, $p = .043$, $\eta^2_{partial} = .134$. Similar to the pattern

observed for self-reported forgiveness, forgiveness behavior was higher for distributive than

procedural justice among participants primed to think about self, $t(29) = 2.17$, $p = .038$, $d = 1.02$.

Also similar, forgiveness behavior was lower for distributive than procedural justice among

participants primed to think about others, $t(29) = -0.96$, $p = .346$, $d = -0.45$), though the other-

justice LSD comparison was not statistically significant, suggesting a somewhat smaller direct effect on forgiveness behavior as compared to self-report forgiveness.

Control group comparisons

Control group comparisons of self-report forgiveness were conducted by performing one-way ANOVAs for the DFS and EFS, in which the five experimental conditions indicated a single between-participants factor. Since we hypothesized that the effects of priming justice would be moderated by perceived transgression severity, this analysis was conducted separately for high and low need-threat. As with prior conducted four cell comparisons, no significant effects emerged for participants low in need-threat for self-report forgiveness measures. Also similar, a between-participants effect was evident for participants high in need-threat for both the DFS ($F(4, 55) = 2.38$, $p = .072$, $\eta^2_{partial} = .143$) and the EFS ($F(4, 55) = 2.274$, $p = .036$, $\eta^2_{partial} = .167$). LSD comparison revealed that relative to the control group, self-reported forgiveness was higher among participants primed to think about distributive justice for self for the EFS ($p = .058$, $d = 0.71$), though less so for the DFS ($p = .219$, $d = 0.47$). In tandem, self-reported forgiveness was lower among participants primed to think about distributive justice for others for the DFS ($p = .054$, $d = -0.99$), though this effect was less evident for the EFS ($p = .213$, $d = -0.72$). Thinking about procedural justice for others promoted greater forgiveness relative to the control group for the EFS ($p = .085$, $d = 0.60$), though this effect was less evident for the DFS ($p = .418$, $d = 0.34$).   Finally control group comparisons for thinking about procedural justice for self were not notable either for the DFS ($p = .951$, $d = -0.02$) or the EFS ($p = .925$, $d = 0.04$).

To supplement control group comparisons, we once again conducted one-tailed contrasts in which distributive justice for self, distributive justice for others, and procedural justice for others were individually compared to the mean of all other conditions including the control

group. Self-report forgiveness was significantly higher among participants who thought about distributive justice self for both the DFS ($t(55) = 1.90$, $p = .036$, $d = .51$) and the EFS ($t(55) = 2.12$, $p = .019$, $d = .57$). Forgiveness was significantly lower among participants who thought about distributive justice for others for both the DFS ($t(55) = -2.67$, $p = .005$, $d = .72$) and the EFS ($t(55) = -2.30$, $p = .013$, $d = .62$). Finally, forgiveness was higher among participants who thought about procedural justice for others for both the DFS ($t(55) = 1.25$, $p = .108$, $d = .34$), and the EFS ($t(55) = 1.87$, $p = .033$, $d = .50$).

Control group comparisons for forgiveness behavior were also conducted using a one-way ANOVA. The between-participants effect was marginally significant for participants low in need-threat, $F(4, 28) = 2.161$, $p = .099$, $\eta^2_{partial} = .236$. LSD comparison revealed that relative to the control group, forgiveness behavior was marginally lower among participants primed to think about distributive justice for self, $t(28) = 1.90$, $p = .067$, $d = 0.84$. No other control group comparisons were significant for low need-threat. The between-participants effect was not significant for participants high in need-threat, $F(4, 46) = 1.35$, $p = .268$, $\eta^2_{partial} = .114$. However, pairwise control group comparisons among high need threat suggested that relative to the control group, forgiveness behavior was higher among participants primed to think about distributive justice for self ($p = .175$, $d = 0.64$). Though differences were in the expected direction, there were no significant control group differences for distributive justice for others ($p = .766$, $d = -0.129$) or procedural justice for others ($p = .409$, $d = 0.39$).

Individual differences in justice beliefs

To assess whether effects on forgiveness were robust to individual differences, we reconducted hierarchical multiple regressions while controlling for four-factor justice beliefs on a newly included initial step. Although the first step of this regression was significant for both

the DFS ($\Delta r^2 = .040$, $p = .223$) and the EFS ($\Delta r^2 = .040$, $p = .223$), no individual regression

weights were significant for either self-report measure ($ps > .13$). Of greater interest, the main

effect of need-threat remained significant for both the DFS ($\Delta r^2 = .057$, $p = .013$, $\beta = -.241$, $p <$

$.001$) and the EFS ($\Delta r^2 = .198$, $p < .001$, $\beta = -.456$, $p < .001$). Similarly, the three-way

interaction of need-threat with justice manipulations remained significant for both the DFS (Δr^2

$= .023$, $\beta = .156$, $p = .032$) and the EFS ($\Delta r^2 = .042$, $\beta = .208$, $p = .002$), and no newly

significant effects emerged for either regression. For forgiveness behavior, the newly entered

first step was not significant($\Delta r^2 = .022$, $p = .640$). Similar to self-report measures of

forgiveness, the main effect of need-threat remained significant ($\Delta r^2 = .072$, $p = .041$, $\beta = -.276$,

$p = .005$) , as did the three-way interaction of need-threat with justice manipulations ($\Delta r^2 = .031$,

$\beta = .195$, $p = .055$) Thus, the interactive effect of need-threat and justice-priming on both self-

report forgiveness and forgiveness behavior appeared robust to individual differences in justice

beliefs.

Internal meta-analysis

Findings were not totally consistent across Study 1 and Study 2, and the statistical

significance of control group comparisons was relatively modest in both studies. To further

assess robustness of all priming effects, we conducted an internal meta-analysis across both

studies (cf. Giner-Sorolla, 2012; Sjöström & Gollwitzer, 2015). Specifically, we used Cohen's d

to conduct fixed effects meta-analyses that assessed whether the effects of justice primes were

overall significant when compared to a control group (Sibley, 2008). We used the only available

forgiveness measure available in Study 1 to calculate effect sizes for each priming condition

relative to the control group, whereas separate effects sizes for decisional forgiveness, emotional

forgiveness, and forgivenenss behavior were included from Study 2 for the high need-threat

group only. We thus computed four meta-analytic summaries, each based on four control group comparison effect sizes. Across both studies, we obtained a significant effect size of $d = .51$, 95% CI [.17, .85] with homogenous effects ($Q = 0.53$, $p = .91$) for the distributive justice for self prime, and a non-significant effect size of $d = .07$, 95% CI [-.27, .41] with homogenous effects ($Q = 1.26$, $p = .74$) for the procedural justice for self prime. In parallel, we obtained an significant effect size of $d = -.44$, 95% CI [-.80, -.08] with homogenous effects ($Q = 1.47$, $p = .69$) for the distributive justice for others prime, and a significant effect size of $d = .43$, 95% CI [.05, .77] with homogenous effects ($Q = 0.42$, $p = .94$) for the procedural justice for others prime. Thus, meta-analytic summaries indicated that thinking about distributive justice for self and procedural justice for others both significantly increased forgiveness relative to a control group, whereas thinking about distributive justice for others decreased forgivenesss.

Discussion

Study 2 corroborated that thinking about distributive justice for self and procedural justice for others promoted greater forgiveness, whereas thinking about distributive justice for others reduced forgiveness. Study 2 also extended the results of Study 1 in several ways. First, in using a non-recall based measure of forgiveness, Study 2 addressed the possibility that effects of justice priming on forgiveness in Study 1 might have been due to affecting transgression recall as opposed to affecting forgiveness per se. Study 2 also provided some evidence that forgiveness behavior might be affected by priming justice. Third, Study 2 demonstrated that effects of thinking about justice on forgiveness are moderated by perceived transgression severity, and that thinking about justice especially affects forgiveness when the perceived severity of an interpersonal transgression is high.

General Discussion

The current research employed a multidimensional justice framework to highlight the ways in which thinking about distributive and procedural justice for self and others prevent and promote forgiveness. In doing so, the current research suggests that motivations to protect one's own well-being, as well as differential activation of retributive versus benevolent social values may be psychological processes by which justice variably affects forgiveness.

A robust effect of thinking about distributive justice for self suggests that concern for personal well-being may indeed be at the core of many instances of forgiveness. However, an unexpected but consistent finding was that activating thoughts about procedural justice for self did not enhance forgiveness. This result can be considered alongside initial theory that suggests procedural justice for self may better connect to interpersonal than personal forms of well-being, such as well-being at work (Lucas et al., 2011). It is conceivable that opting not to forgive a transgressor may better promote some forms of social well-being (e.g., McNulty, 2011), though future studies are needed.

Future research should also further explore activation of social values as the channel through which thinking about distributive and procedural justice for others prevents and promotes forgiveness. Strelan and Sutton (2011) suggest that justice may prevent and promote forgiveness precisely because of divergent connections to underlying retributive and benevolence social values (see also Karremans & Van Lange, 2005). The present research extends this work in suggesting that differential activation of retributive and benevolence values may be tied to thinking about justice for others in terms of fair outcomes or processes. Future research could bolster these suggested connections by experimentally examining the extent to which priming unique social values alters specific justice cognitions, or vice versa.

Connections between justice and forgiveness could also be further illuminated by attending to other cognitive and emotional processes. For example, ruminative thinking and impulsiveness have been previously identified as mechanisms linking beliefs about justice for self and others to forgiveness (Lucas et al., 2010). It could be that these cognitive intermediaries also link more precise four-factor operationalizations of justice to forgiveness. Related, Lucas et al.(2014) have shown that activating distributive justice for others may increase social callousness through links to collective angst – future-oriented uncertainty about the existence of one's social group (Wohl, Squires & Caouette, 2012). Collective angst could conceivably transmit a deleterious effect of distributive justice for others on forgiveness of groups as opposed to individuals. Other research suggests that feelings of power, defined as control over outcomes in a relationship, may encourage interpersonal forgiveness (Karremans & Smith, 2010).

 Finally, future research could consider potential implications of the current research in an intervention environment. Building on the initial work of Karremans and Van Lange (2005), the current research suggests that altering thoughts about justice through initial activation may be a useful vehicle for deliberately encouraging forgiveness. Future research must also consider other approaches for deliberately inducing thoughts about justice, perhaps including activation of injustice as well as justice cognitions (e.g., Lucas et al., 2014), or formal and sustained justice training as opposed to temporary activation of justice (e.g., Brinkman, Jedinak, Rosen, & Zimmerman, 2011). However, whether forgiveness uniformly promotes well-being, and thus should be artificially enhanced, remains a subject of considerable debate (e.g., McNulty, 2011).

A handful of limitations suggest a cautious interpretation of the current research and future directions. First, this research relied on predominantly White American convenience samples. Future research must assess generalizability of the current findings, especially including

studies that can attend to cultural components of justice and forgiveness (e.g., Lucas, Kamble, Wu, Zhdanova & Wendorf, 2015). Second, some results were marginally significant, especially control group comparisons and Study 2 behavioral forgiveness. We are reassured to some extent by moderate to large effect sizes (Cohen, 1988), and also meta-analytic summaries that clarified overall patterns of significance for control group comparisons. Nevertheless, future studies are needed to further bolster the presently observed patterns. Related, we did not include measures of other possible confounding or moderating variables. For example, forgiveness depends on the closeness of a victim to a transgressor (Karremans & Aarts, 2007), and it is possible that justice priming effects may similarly depend on characteristics of the victim-transgressor relationship. We also did not assess retributive or restorative justice, which have both been well explored in the forgiveness literature (e.g., Strelan, Feather & McKee, 2011). Another important limitation concerns careless responding in Study 2. Using methods to identify inattentive as well as satisficing response, we excluded roughly half of responses. Although this number is consistent with others who have considered attentiveness in online experimentation (Oppenheimer et al., 2009), Study 2 results nonetheless warrant caution and suggest the need for future replication.

Limitations notwithstanding, this research provides a vital step forward in identifying how justice can promote and prevent forgiveness. In doing so, this research further connects justice to burgeoning literature implicating priming and automaticity effects of justice on interpersonal behavior. Considering distributive and procedural justice for self and others may aid in efforts to understand how, when and why forgiveness conveys personal and social consequences, especially to the extent that these thoughts about justice may be precisely and a priori activated.

References

Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (ed.), *Advances in experimental social psychology*. New York: Academic Press.

Aiken, L. S. & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage, Thousand Oaks, CA

Andreychik, M. R . & Gill, M.J. (2009). Ingroup identity moderates the impact of social explanations on intergroup attitudes: External explanations are not inherently prosocial. *Personality and Social Psychology Bulletin*, 35, 1632-1645.

Aquino, K., Tripp, T.M., Bies, R.J. (2006). Getting even or moving on? Power, procedural justice, and types of offense as predictors of revenge, forgiveness, reconciliation, and avoidance in organizations. *Journal of Applied Psychology, 91, 653-658.*

Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of Research Methods in Social and Personality Psychology* (pp. 253-285). New York: Cambridge University Press

Bargh, J.A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, *71*, 230-244.

Bargh, J. A., & Morsella, E. (2010). Unconscious behavioral guidance systems. In C.R. Agnew, D.E. Carlston, W.G. Graziano, & J.R. Kelly (Eds.), *Then a miracle occurs: Focusing on behavior in social psychological theory and research* (pp. 89-118). New York: Oxford University Press.

Bègue, L., & Bastounis, M. (2003). Two spheres of belief in justice: extensive support for the bidimensional model of belief in a just world. *Journal of Personality, 71*, 435–463.

Berry, J. W., Worthington, E. L., Jr., O'Connor, L. E., Parrott, L., I. I. I., & Wade, N. G. (2005). Forgivingness, vengeful rumination, and affective traits. Journal of Personality, 73, 183– 250.

Brinkman, B.G., Jedinak, A., Rosen, L.A., & Zimmerman, T.S. (2011). Teaching children fairness:

Decreasing gender predjudice among children. *Analyses of Social Issues and Public Policy, 11*,

61-81.

Burnette, J. L., McCullough, M. E., Van Tongeren, D. R., & Davis, D. E. (2012). Forgiveness

results from integrating information about relationship value and exploitation risk. *Personality

and Social Psychology Bulletin*, *38*, 345-356.

Carter-Sowell, A. R., Chen, Z., & Williams, K. D. (2008). Ostracism increases social usceptibility. *Social

Influence*, *3*, 143-153.

Dalbert, C. (2009). Belief in a just world. In M. R. Leary & R. H. Hoyle (Eds.), *Handbook of Individual

Differences in Social Behavior* (pp. 288-297). New York: Guilford Publications.

Darley, J. M., & Huff, C. (1990). Heightened damage assessment as a result of the intentionality of the

damage-causing act. *British Journal of Social Psychology*, *29*, 181-188.

Dickerson, S. S., Gable, S. L., Irwin, M. R., Aziz, N., & Kemeny, M. E. (2009). Social-evaluative threat

and proinflammatory cytokine regulation an experimental laboratory investigation. *Psychological

Science*, *20*, 1237-1244.

Dorn, K., Hook, J. N., Davis, D. E., Van Tongeren, D. R., & Worthington Jr, E. L. (2014). Behavioral

methods of assessing forgiveness. *The Journal of Positive Psychology*, *9*, 75-80.

Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of

social exclusion. *Science*, *302*, 290-292.

Exline, J. J., & Baumeister, R. F. (2000). Expressing forgiveness and repentance: Benefits and barriers. In

M. E. McCullough, K. Pargament, & C. Thoresen (Eds.), Forgiveness: Theory, research, and

practice (pp. 133–155). New York: Guilford.

Exline, J. J.**,** Worthington, E. L., Jr., Hill, P., & McCullough, M. E. (2003). Forgiveness and justice: A

research agenda for social and personality psychology. *Personality and Social Psychology

Review, 7*, 337-348.

Feather, N. T. (1999). *Values, achievement, and justice: Studies in the psychology of deservingness*. Dordrecht: Kluwer Academic Publishers.

Fincham, F.D., Jackson, H., & Beach, S.R. (2005). Transgression severity and forgiveness: Different moderators for objective and subjective severity. *Journal of Social and Clinical Psychology*, *24*, 860-875.

Gardner, W.L., Gabriel, S.., & Lee, A.Y. (1999), "'I' value freedom, but 'we' value relationships: Self-construal priming mirrors cultural differences in judgment," *Psychological Science, 10*, 321–26.

Giner-Sorolla, R. (2012). Science or art? How aesthetic standards grease the way through the publication bottleneck but undermine science. *Perspectives on Psychological Science*, *7*, 562-571.

Hertel, G., & Fiedler, K. (1998). Fair and dependent versus egoistic and free: Effects of semantic and evaluative priming on the 'Ring Measure of Social Values'. *European Journal of Social Psychology*, *28*, 49-70.

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins, & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133-168). New York: Guilford Press.

Hook, J. N., Worthington, E. L., Utsey, S. O., Davis, D. E., & Burnette, J. L. (2012). Collectivistic self-construal and forgiveness. *Counseling and Values*,*57*, 109-124.

Jost, J.T., & Kay, A.C. (2010). Social justice: History, theory, and research. In S.T. Fiske, D. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th edition, Vol. 2, pp. 1122-1165). Hoboken, NJ: Wiley.

Kaiser, C. R., Vick, S. B., & Major, B. (2004). Just world beliefs and the desire for revenge after September 11, 2001. *Psychological Science, 15,* 503-506.

Karremans, J. C., & Aarts, H. (2007). The role of automaticity in determining the inclination to forgive close others. *Journal of Experimental Social Psychology, 43*, 902–917.

Karremans, J. C., & Smith, P. K. (2010). Having the power to forgive: When the experience of power increases interpersonal forgiveness. *Personality and Social Psychology Bulletin, 36*, 1010–1023.

Karremans, J. C., & Van Lange P. A. M. (2005). Does activating justice help or hurt in promoting forgiveness? *Journal of Experimental Social Psychology, 41*, 290-297.

Karremans, J. C., Van Lange, P. A., 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.

Krosnick, J. A. (1991). Response strategies for coping with the cognitive demands of attitude measures in surveys. *Applied Cognitive Psychology*, *5*, 213-236.

Lerner, M.J. (1980). *The Belief in a Just World A Fundamental Delusion*. Perspectives in Social Psychology. New York: Plenum Press.

Lind, E. A., & Tyler, T. R., (1988). *The social psychology of procedural justice*. New York: Plenum.

Lipkus, I. M., Dalbert, C., & Seigler, I. C. (1996). The importance of distinguishing the belief in a just world for self versus others. *Personality and Social Psychology Bulletin*, *22*, 666-677.

Lucas, T., Kamble, S. V., Wu, M. S., Zhdanova, L., & Wendorf, C. A. (2015). Distributive and procedural justice for self and others: Measurement invariance and links to life satisfaction in four cultures. *Journal of Cross-Cultural Psychology, 47*, 234-248.

Lucas, T., Rudolph, C., Zhdanova, L., Barkho, E., & Weidner, N. (2014). Distributive justice for others, collective angst, and support for exclusion of immigrants. *Political Psychology*, *35*, 775- 793.

Lucas, T., Young, J. D., Zhdanova, L., & Alexander, S. (2010). Self and other justice beliefs, impulsivity, rumination, and forgiveness: Justice beliefs can both prevent and promote forgiveness. *Personality and Individual Differences, 49*, 851–856.

Lucas, T., & Wendorf, C.A. (2012). Perceived justice and worker well-being. How and for whom do unethical work practices matter? In R.A. Giacalone & M.D. Promislo (Eds.) *Handbook of unethical work behavior: Implications for individual well-being* (pp. 237-252). New York: ME Sharpe.

Lucas, T., Zhdanova, L., & Alexander, S. (2011). Procedural and distributive justice beliefs for self and others: Assessment of a four-factor individual differences model. *Journal of Individual Differences, 32,* 14-25.

McCullough, M. E., Fincham, F. D., & Tsang, J.A. (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 dispostions: Personality substrates of forgiveness and their links to the Big Five. *Personality and Social Psychology Bulletin, 28*, 1556–1573.

McCullough, M. E., Root, L. M. Tabak, B., & Witvliet, C. V. O. (2009). Forgiveness. In S.J. Lopez (Ed.), *Handbook of Positive Psychology* (2nd ed.). New York: Oxford.

McCullough, M. E., Worthington, E. L., & Rachal, K. C. (1997). Interpersonal forgiving in close relationships. *Journal of Personality and Social Psychology, 73,* 321–336.

McNulty, J. K. (2011). The dark side of forgiveness: The tendency to forgive predicts continued psychological and physical aggression in marriage. *Personality and Social Psychology Bulletin*, *37*, 770-783.

Okimoto, T. G., & Wenzel, M. (2008). The symbolic meaning of transgressions: Towards a unifying framework of justice restoration. *Advances in Group Processes*, *25*, 291-326.

Oppenheimer, D. M., Meyvis, T., & Davidenko, N. (2009). Instructional manipulation checks: Detecting satisficing to increase statistical power. *Journal of Experimental Social Psychology*, *45*, 867-872.

Payne, B. K., Brown-Iannuzzi, J. L., & Loersch, C. (2016). Replicable effects of primes on human behavior. *Journal of Experimental Psychology: General*, *145*, 1269-1279.

Reed, A. I., & Aquino, K. F. (2003). Moral identity and the expanding circle of moral regard towards outgroups. *Journal of Personality and Social Psychology, 84,* 1270–1286.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25,* 1–65.

Seawell, A.H., Toussaint, L.L., & Cheadle, A.C.D. (2014). Prospective associations between unforgiveness and physical health and positive mediating mechanisms in a nationally representative sample of older adults. *Psychology & Health, 29,* 375-389.

Sibley, C.G. (2008). *Utilities for examining simple meta-analytic averages* [computer software]. University of Aukland.

Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology undisclosed flexibility in data collection and analysis allows presenting anything as significant. *Psychological Science*, *22*, 1359-1366.

Sjöström, A., & Gollwitzer, M. (2015). Displaced revenge: Can revenge taste "sweet" if it aims at a different target?. *Journal of Experimental Social Psychology*, *56*, 191-202.

Ståhl, T., Vermunt, R., & Ellemers, N. (2008). For love or money? How activation of relational versus instrumental concerns affects reactions to decision-making procedures. *Journal of Experimental Social Psychology*, *44*, 80-94.

Strelan, P. (2007). The prosocial, adaptive qualities of just world beliefs: Implications for the relationship between justice and forgiveness. *Personality and Individual Differences, 43*, 881-890.

Strelan, P., Feather, N. T., & McKee, I. (2011). Retributive and inclusive justice goals and forgiveness: The influence of motivational values. *Social Justice Research, 24,* 126–142.

Strelan, P., & Sutton, R. M. (2011). When just-world beliefs promote and when they inhibit forgiveness. *Personality and Individual Differences*, *50*, 163-168.

Strelan, P. & Van Prooijen, J. (2013). Retribution and forgiveness: The healing effects of punishing for just deserts. *European Journal of Social Psychology, 43,* 544-553.

Sutton, R. M., & Douglas, K. M. (2005). Justice for all, or just for me? More support for self-other differences in just world beliefs. *Personality and Individual Differences, 39,* 637-645.

Sutton, R. M., Douglas, K. M., Wilkin, K., Elder, T. J., Cole, J. M., & Stathi, S. (2008). Justice   for

     whom, exactly? Beliefs in justice for the self and various others. *Personality and Social*

     Psychology Bulletin, 38, 528-541.

Thibaut, J., & Walker, L., (1975). *Procedural justice: A psychological analysis.* Hillsdale, NJ: LEA.

Tripp, T. M., Bies, R. J., & Aquino, K. (2007). A vigilante model of justice: Revenge, reconciliation,

     forgiveness, and avoidance. *Social Justice Research, 20,* 10-34.

Tyler, T. R., Boeckmann, R. J., Smith, H. J., & Huo, Y. J. (1997). *Social justice in a diverse society*.

     Westview Press

Watson, D., L.A., Clark & 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.

Wenzel, M., & Okimoto, T. G. (2014). On the relationship between justice and forgiveness: Are

     all forms of justice made equal?. *British Journal of Social Psychology*, *53*, 463-483.

Williams, K. D. (2009). Ostracism: A temporal need-threat model. *Advances in Experimental*

     Social Psychology, *41*, 275-314.

Williams, K. D., Cheung, C. K., & Choi, W. (2000). Cyberostracism: effects of being ignored over the

     Internet. *Journal of Personality and Social Psychology*,*79*, 748-762.

Williams, K. D., & Jarvis, B. (2006). Cyberball: A program for use in research on interpersonal

     ostracism and acceptance. *Behavior Research Methods*, *38*, 174-180.

Wohl, M. J. A., Squires, E. C, & Caouette, J. (2012). We were, we are, will we be? The social

     psychology of collective angst. *Social Psychology and Personality Compass, 6,* 379-391.

Worthington Jr, E. L., Hook, J. N., Utsey, S. O., Williams, J. K., & Neil, R. L. (2007). *Decisional and*

     emotional forgiveness. Paper presented at the International Positive Psychology Summit,

     Washington, DC.

Table 1

Forgiveness Means and Standard Deviations of Forgiveness as a Function of Justice Primes.

Study 1			TRIM		
	DJ-Self	PJ-Self	DJ-Others	PJ-Others	Control
	3.54(0.69)	3.41(0.67)	3.00(0.69)	3.53(0.77)	3.23(0.77)
Study 2			Decisional Forgiveness		
	DJ-Self	PJ-Self	DJ-Others	PJ-Others	Control
Low Need-threat	3.92(0.83)	4.14(0.34)	4.14(0.58)	3.84(0.77)	3.92(0.79)
High Need-threat	3.92(1.06)	3.43(0.99)	2.55(0.90)	3.79(0.69)	3.46(1.20)
			Emotional Forgiveness		
Low Need-threat	3.33(1.15)	3.81(0.77)	3.64(0.49)	3.36(0.69)	3.38(0.63)
High Need-threat	2.75(0.93)	2.13(0.80)	1.59(0.47)	2.73(1.20)	2.10(0.90)
			Forgiveness Behavior		
Low Need-threat	40.63(11.97)	51.79(4.72)	45.19(6.33)	51.79(4.72)	48.21(11.25)
High Need-threat	47.50(12.91)	27.78(24.03)	32.50(30.10)	43.06(14.13)	35.71(22.39)

Notes. Standard deviations given in parentheses.

Table 2

Study 2 Need-Threat and Justice Priming Predicting Forgiveness

	Decisional Forgiveness	Emotional Forgiveness	Forgiveness Behavior
Step1 Model Δr²	**.06****	**.23*****	**.06⁺**
Need-threat	-.25***	-.48***	-.25***
Self-Others	-.03	-.07	-.02
Distributive-Procedural	-.01	.03	-.01
Step 2Model Δ r²	**.01**	**.01**	**.01**
Need-Threat x Self-Others	-.04	.02	-.01
Need-Threat x Distributive-Procedural	-.02	-.01	-.06
Self-Others x Distributive-Procedural	.07	.08	.07
Step 3Model Δ r²	**.02***	**.04****	**.02⁺⁺**
Need-Threat x Self-Others x Distributive-Procedural	.16*	.20*	.16⁺⁺

Notes. Coefficients are standardized regression weights. ***p<.001, **p<.01, *p<.05, ⁺p<.10, ⁺⁺ *p*=.11.

DFS = Decisional Forgiveness Scale, EFS = Emotional Forgiveness Scale,

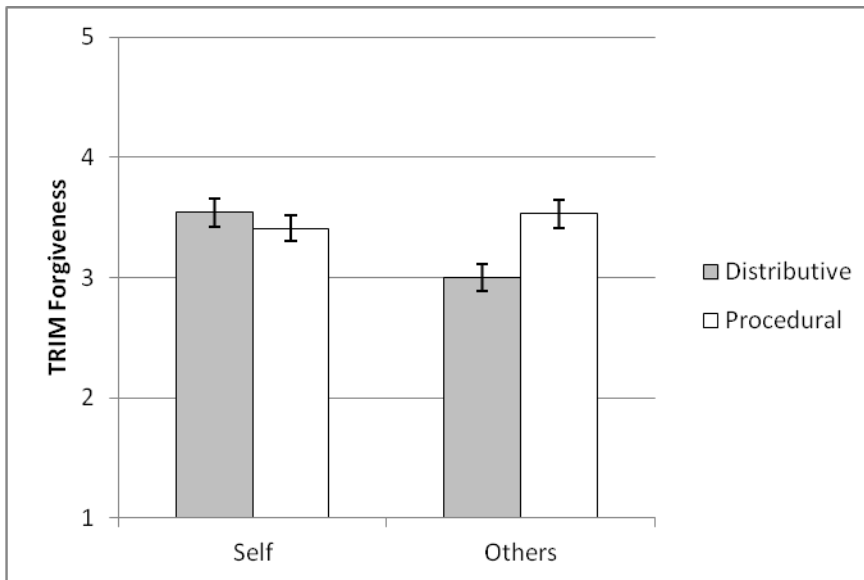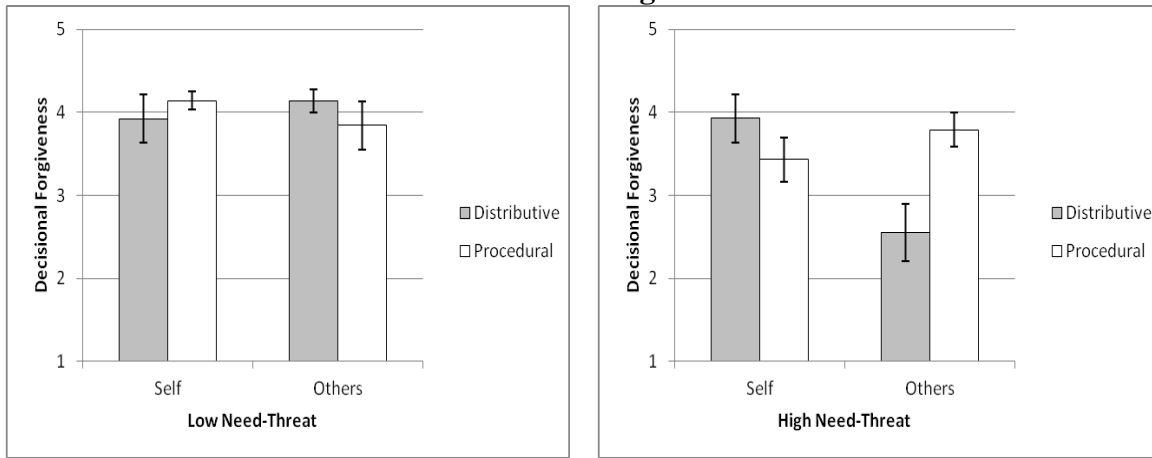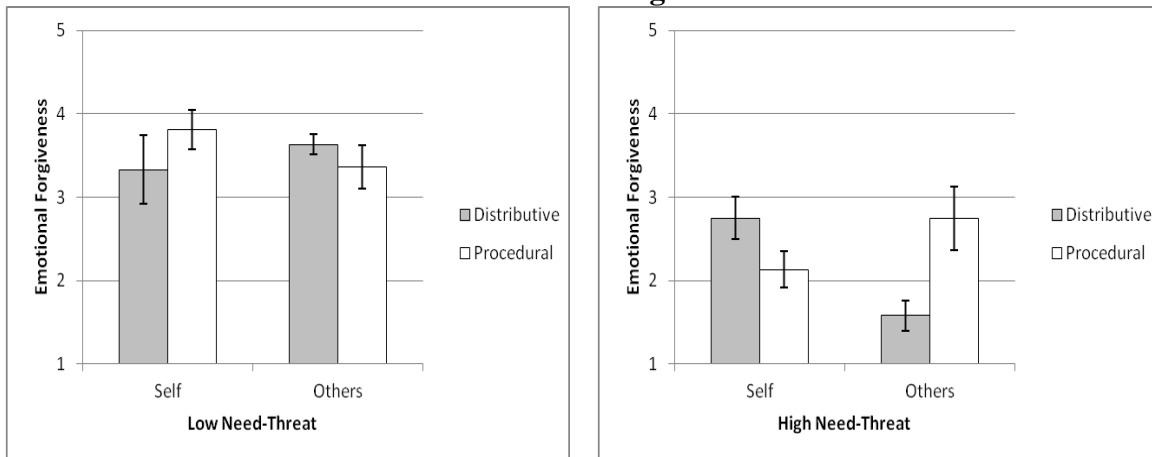Forgiveness Behavior = Cyberball Behavior.

Figure 1. Study1 justice primes predicting forgiveness motivations.
Error bars represent +/- 1 standard error.

Decisional Forgiveness
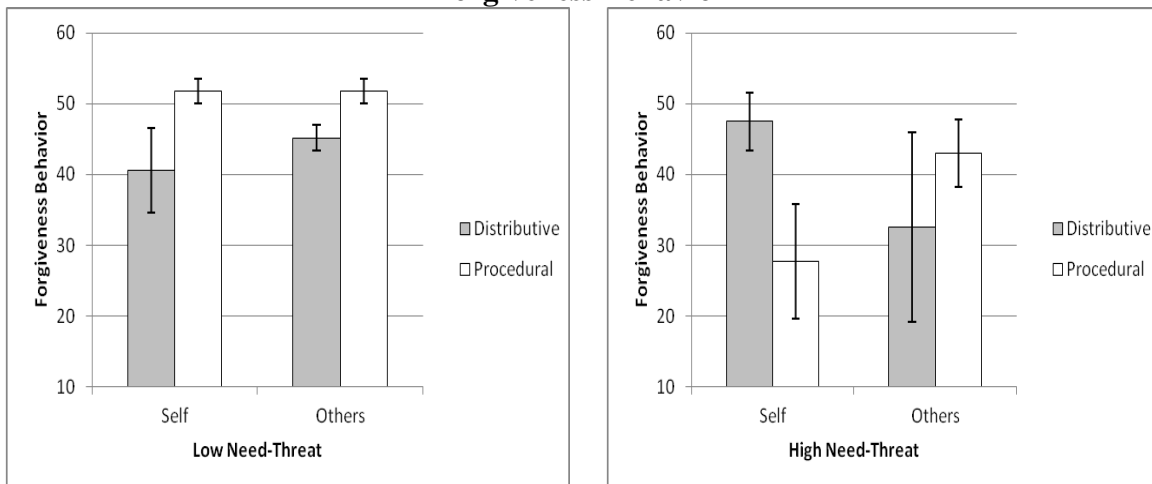

Emotional Forgiveness

Forgiveness Behavior

Figure2.Study 2 need-threat and justice primes predicting self-report decisional and emotional forgiveness and Cyberball forgiveness behavior. Error bars represent +/- 1standard error.