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Parting with the Past: Logical Conceptualizations and Replications of Vengefulness in Males

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Abstract: Lin and Frank (2016) failed to replicate findings from a study on self-reflection and vengeance conducted by Exline and colleagues (2008), which reported that males who self-reflected upon their potential for wrongdoing were less likely to seek revenge than males who did not self-reflect. Using novel data methods on Lin and Frank's data, Grice and colleagues (2017) discovered a multivariate profile that successfully differentiated between the groups of men. The present studies further assess the replicability of Exline and colleagues' (2008) and Grice and colleagues' (2017) work. Study 1 failed to replicate any of the findings. Studies 2 and 3 investigate explanations for the failed replications by modifying item response format. Implications and explanations for the unsuccessful replications are discussed.

Keywords: Forgiveness, Vengefulness, Perspective Taking, Interpersonal Relationships

Introduction

Exline, Baumeister, Zell, Kraft, and Witvliet (2008) published a series of seven studies on the topic of revenge. These studies expanded on previous theoretical conceptualizations of vengeful actions (Stuckless & Goranson, 1992; McCullough, Worthington, & Rachal, 1997; McCullough, Bellah, Kilpatrick, & Johnson, 2001; McCullough & Hoyt, 2002; Mullet, Neto, & Riviere, 2005; Ysseldyk, Matheson, & Anisman, 2007). Moreover, Exline and colleagues (Studies 4-7, 2008) focused on how males and females might differ in acknowledgement of their own capacity to commit a wrongful act and how this might impact vengefulness. Results from the final study (Study #7), affirmed that males who were first primed to view themselves as personally capable of wrongdoing later reported lower average motivations of vengefulness toward an offender. By comparison, the priming did not ultimately impact motivations of vengefulness for females, on average. Based upon these findings, males may be more forgiving towards their offenders if they first see themselves as capable of committing offenses similar to those committed against them (Exline et al., 2008).

As part of the Reproducibility Project (Open Science Collaboration, 2015), Lin and Frank (2016) attempted to replicate the findings of Study 7 conducted by Exline and colleagues (2008). Participants first wrote about a time in which they were deeply offended and then were assigned to either an experimental (self-reflecting) or control (non-self-reflecting) group. Individuals in both groups completed an inventory measuring vengefulness either after (experimental group) or before (control group) self-reflecting on one's own capacity to commit wrongful acts. Lin and Frank (2016) failed to replicate the findings of Exline and colleagues' (2008). Specifically, the differences between the experimental and control group means were similar for males and females, and neither gender showed changes in vengefulness; contrary to what was discovered by Exline and colleagues (see Table 1 in Study 1 Results).

Grice and colleagues (2017) used a novel, nonparametric method of data analysis to re-analyze Lin and Frank's (2016) replication data. Rather than comparing group means and variances, they investigated logical combinations of items from the vengefulness questionnaire (viz., the TRIM-18-R, see below) to examine different patterns in responses between males and females who either did or did not self-reflect prior to completing the questionnaire. Grice and colleagues (2017) emphasized that the utilization of logical combinations enables the researcher to eschew the typical aggregating process and its corresponding issues, therefore enabling one to analyze participants' responses to items holistically. Items from the TRIM-18-R were combined into logical composites and analyzed using *Logical Hypothesis Testing* (Grice, 2011; see also Qualitative Comparative Analysis, Ragin, 2008; Fiss, 2011). The composite that revealed the greatest distinction between males and females was based upon the following three items:

- Trim4: *I wish that something bad would happen to him/her*
- Trim16: *I have released my anger so I can work on restoring our relationship to health*
- Trim18: *I withdraw from him/her*

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The logical composite formed from the three items was as follows:

$$\sim Trim18 \wedge [Trim\ 4 \vee Trim16]$$

The ∨ and ∧ symbols represent logical disjunction (i.e., 'or') and conjunction (i.e., 'and'), respectively, and ~ represents logical negation. In words, the composite states that those who do not withdraw from the perpetrator or person who committed the "harmful" act against them (Trim 18), must make a choice between wishing harm towards the perpetrator (Trim 4) or giving up their resentment to the offender (Trim 16). Remarkably, the responses for 28 out of 31 males (90%) matched this logical composite, albeit only if they first self-reflected upon their capacity to commit similar offenses. When the males did not self-reflect, only 12 out of 24 (50%) matched. By comparison, approximately half of the women in each group matched the composite. These results therefore indicated that asking males to first self-reflect about their own capability to do harm could lead to a rational strategy for releasing vengeful thoughts, thereby offering partial support to Exline and colleagues' (2008) theory.

Grice and colleagues (2017, p. 16) cautioned, however, that their novel findings must themselves be replicated, particularly given the exploratory manner in which the discriminating logical composite was discovered. In the first study below we therefore provide a second replication attempt of Exline and colleagues' (2008) original Study 7 findings, as well as an attempt to replicate the findings of Grice and colleagues (2017). It is specifically hypothesized that males who first self-reflect on their capacity to commit wrongdoing will: a) report lower average motivations of revenge against the transgressor compared to males who did not first self-reflect, as demonstrated by Exline and colleagues (2008) and b) lead to the same rational strategy for releasing vengeful thoughts via the aforementioned logical composite discovered by Grice and colleagues (2017)

Study 1 Method

Power Analysis and Disclosures

Lin and Frank (2016) conducted an *a priori* power analysis following recommended guidelines (Faul, Erdfelder, Lang, & Buchner, 2007) and sampled 128 students in their attempted replication of Exline and colleagues' (2008) ANOVA interaction (η_p^2 = .06, power = .80). In order to provide a more powerful test of the original interaction, we increased the sample size to at least 206 persons (η_p^2 = .06, power = .95) in our study. We recruited participants in Studies' 1, 2, and 3 from a large, Midwestern University in the United States. All sample sizes were defined *a priori* and data analyses were conducted following each data collection phase, respectively, and all studies were completed across 3 separate semesters. Data collection ceased once the sample goal, defined in each of the studies below, was attained or at semester's end, whichever was achieved first. All measures [Exline et al., (2008) included 4 empathic understanding items, presented in addition to the personal capability items dependent upon condition (control or experimental), which we also included in our studies, for exact replication purposes. However, these items are not a central aspect of the replications at hand, and were, therefore, neither analyzed nor included within our write-up. For the specific items, refer to Exline et al., 2008, p. 500.] and manipulations presented to participants are reported within Studies 1, 2, and 3 below.

Participants

Two hundred and forty-one undergraduate psychology students, recruited through the universities online recruitment system (i.e., SONA), participated in the current study in exchange for course credit, prior to the semesters end. Twenty-eight students were not assigned to one of the conditions (experimental or control), due to a failure to complete the brief writing task (see procedures below) and were therefore removed from the analyses. Of the remaining 213 participants, a minority were male (n = 69, 32.39%) and were between the ages of 18 and 35 (M = 19.23, SD = 1.85). Regarding participants' ethnicity, the majority identified themselves as Caucasian (n = 169), with the remaining participants identifying as African American (n = 16), Native American (n = 10), Hispanic/Latinx (n = 9), Asian/Asian American (n = 7), and "Other" (n = 2).

Materials

Transgression-Related Interpersonal Motivations Inventory-Revised (TRIM-18-R)

Participants completed the 18-item Transgression-Related Interpersonal Motivations Inventory-Revised (TRIM-18-R; McCullough, Root, & Cohen, 2006). The TRIM-18-R assesses three different interpersonal motivations: avoidance motivations, revenge motivations, and benevolence motivations. The specific area of interest for this study was the revenge motivations subscale (e.g., "*I want him/her to get what he/she deserves*"; McCullough et al., 2006, p. 897). Participants responded to each TRIM item based upon a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In accordance with the original study by Exline and colleagues (2008) and following instructions for the TRIM-18-R (McCullough et al., 2006), the data required mean scores to be calculated for all three subscales. In line with Exline and colleagues (2008) methodology, an overall TRIM mean score was calculated by combining the revenge, avoidance, and reverse-coded benevolence subscales (see also Exline et al., 2008; McCullough et al., 2006). Cronbach's

alpha for the three subscales ranged from .88 – .93, with the Cronbach's alpha for the revenge subscale equal to .88.

Personal Capability and Similar Offense Questions

Participants were additionally assessed on their personal capability to commit an offense equal to the one committed against them. Participants were asked four questions to which they responded using a scale ranging from 0 (*no, definitely not*) to 10 (*yes definitely*): (1) "Given the right circumstances, do you think that you could be capable of doing something just as bad (i.e., just as harmful or wrong) as what the other person did?"; (2) "Can you imagine a situation in which you could do something as bad as what the other person did?"; (3) "Do you think it's possible that you could ever do something as bad as what the other person did?"; and (4) "Thinking back over your entire life, do you think that you have ever done anything as bad as what the other person did?" (Exline et al., 2008, p. 500). The items were averaged to create a score indicating the capability to commit *equally bad* offenses; M = 2.94, SD = 2.80, α = .92 (Exline et al., 2008).

Participants also responded to a second group of personal capability questions that emphasized similarity in offense type (e.g., "*Given the right circumstances, do you think that you could be capable of doing something similar in type to what the other person did?*"; Exline et al. 2008, p. 511). Responses for the capability to commit a similar act were scored from 0 (*no, definitely not*) to 10 (*yes, definitely*) and averaged to create a score indicating one's capability to commit *similar* offenses; M = 2.82, SD = 2.67, α = .91.

The Pearson's correlation between the *equally bad* and a *similar* offense scores was near unity, $r(211)$ = .92. Consequently, and consistent with Exline and colleagues' (2008) methodology, all eight items were combined and averaged to form personal capability scores (M = 2.88, SD = 2.68, α = .96).

Procedure

All participants completed the study procedures online through Qualtrics. After reading and electronically signing the informed consent, they provided basic demographic information regarding sex, age, and ethnicity. They were then shown the following prompt: "Please take a few minutes to recall a time in which you were deeply offended, harmed, or hurt by another person, and as a result still have some anger or resentment towards that person. You must write at least 200 characters (about 30 words) to move on (Exline et al., 2008, p. 509)." Upon completion of this brief writing task, Qualtrics randomly presented one of two conditions to the participants: no self-reflect or self-reflect. Those who were in the no self-reflect condition received the TRIM-18-R questions *before* receiving the randomly shuffled capability, similarity, and empathy questions. Those who were in the experimental self-reflect condition (i.e., experimental group) received the TRIM *after* receiving the randomly shuffled capability and similar offense questions. Following Exline and colleagues' (2008) methods, the capability and similar offense questions were presented in randomized order to each participant. This study as well as all following studies were approved by the Institutional Review Board.

Study 1 Results

We first re-examined the replicability of Exline and colleagues' (2008, Study 7) original findings, then subsequently assessed the replicability of the logical composite discovered by Grice and colleagues (2017). Exline and colleagues (2008) reported an interaction between gender and condition such that the mean vengefulness scores for males who were first asked to self-reflect on their own capability of wrongdoing was lower than the corresponding mean for males who did not self-reflect. For women the difference between the condition group means was negligible (see Table 1).

A 2 (Gender: male, female) × 2 (Condition: self-reflect, control) analysis of variance (ANOVA) on revenge motivations subscale scores revealed no meaningful interaction; $F(1, 209) = 1.65$, $\eta_p^2 = .01$. A similar 2 × 2 ANOVA on overall TRIM-18-R scores also revealed no meaningful interaction; $F(1, 209) = 0.19$, $\eta_p^2 = .001$. Similar to the results reported by Lin and Frank (2016), the gender by condition interactions regarding vengefulness reported by Exline and colleagues (2008) were not replicated (see Table 1).

Table 1
Cross Study Comparisons of Overall Trim Scores and Vengefulness Scores by Gender and Condition

			$F(\eta^2)$		
Dependent Variable	Males	Women	Gender	Condition	Interaction
		Exline et al.'s (2008) Study #7			
TRIM			0.18(.00)	2.34(.02)	3.72(.02)
Control					
M(*SD*)	3.0(0.8)	2.6(0.7)			
n	25	20			
Experimental					
M(*SD*)	2.5(0.9)	2.7(1.0)			
n	58	52			
Vengefulness			5.14*(.03)	0.52(.00)	9.40**(.06)
Control					
M(*SD*)	2.6(1.1)	1.6(0.8)			
n	25	20			
Experimental					
M(*SD*)	1.9(0.8)	2.0(1.0)			
n	58	52			
		Lin and Frank (2016) Replication Attempt			
TRIM			3.52(.03)	4.63*(.03)	0.15(.00)
Control					
M(*SD*)	2.99(.77)	2.69(.78)			
n	24	47			
Experimental					
M(*SD*)	2.66(.74)	2.46(.69)			
n	31	33			
Vengefulness			4.51*(.03)	0.08(.00)	0.02(.00)
Control					
M(*SD*)	2.11(.75)	1.80(.83)			
n	24	47			
Experimental					
M(*SD*)	2.17(.95)	1.82(.94)			
n	31	33			

Table 1 (*continued*)

			$F(\eta^2)$		
Dependent Variable	Males	Women	Gender	Condition	Interaction
		Current Study #1 Replication Attempt			
TRIM			0.00(.00)	0.17(.00)	0.19(.00)
Control					
M(*SD*)	2.78(.88)	2.72(.87)			
n	34	68			
Experimental					
M(*SD*)	2.67(.88)	2.72(.86)			
n	35	76			
Vengefulness			13.10**(.06)	0.09(.00)	1.65(.01)
Control					
M(*SD*)	2.14(.65)	1.86(.83)			
n	34	68			
Experimental					
M(*SD*)	2.25(1.06)	1.68(.69)			
n	35	76			

Note. Exline et al.'s (2008) Study #7 findings, Lin and Frank's (2016) replication attempt, and our own Study #1 replication attempt results.
TRIM = Transgression Related Interpersonal Motivations Revised Inventory (TRIM-18-R).
*$p < .05$. **$p < .01$

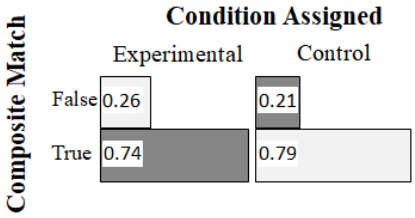
In line with Grice and colleagues' (2017) methods, we first dichotomized the three TRIM items by combining the five item responses of '*strongly disagree*,' '*disagree*,' '*neutral*,' '*agree*,' and '*strongly agree*' into two ordered categories (i.e., cut-points). These cut-points were derived by Grice and colleagues (2017) using an automated algorithm similar to logistic regression that maximized the differences between males across the two self-reflection conditions (see also Grice et al., 2016). The more specific representation of the logical composite was therefore as follows:

$$\text{Trim18}_{(1:4)} \wedge [\text{Trim 4}_{(3:5)} \vee \text{Trim16}_{(3:5)}],$$

indicating that males were not withdrawing from the offender completely (Trim18 endorsed 1-4; *Strongly Disagree* to *Agree*), and that they found themselves either wishing ill upon the person (Trim4 endorsed 3-5; *Neutral* to *Strongly Agree*) or giving up their anger toward the person (Trim16 endorsed 3-5; *Neutral* to *Strongly Agree*). Grice and colleagues (2017) found that 28 of 31 (90%) self-reflecting males fit this logical composite, whereas only half the males who did not self-reflect fit the composite.

The same composite was constructed and analyzed for the current sample. Results revealed that 26 of 35 males (74%) fit the logical composite if they first self-reflected; however, 27 of 34 males (79%) who did not self-reflect also matched the composite (see Figure 1). Consequently, males who self-reflected prior to completing the TRIM-18-R were highly similar to males who did not first self-reflect with regard to vengefulness, thus failing to replicate the pattern reported by Grice and colleagues (2017).

Figure 1. Study 1 replication attempt of Grice and colleagues' (2017) TRIM Composite



Note. The proportional frequencies for males who first self-reflected (Experimental) and males who did not first self-reflect (Control) who matched the TRIM Composite, namely, Trim18(1:4) ∧ [Trim 4(3:5) ∨ Trim16(3:5)], as expected (grey) and males who failed to match as expected (white). A total of 69 male observations are plotted.

The same automated algorithm (see Grice et al., 2016) for binning (i.e., creating the cut-points) the TRIM-18-R (henceforth referred to as the TRIM) item responses was then conducted on the current data to determine if the current sample produced the same TRIM cut-points as Grice and colleagues (2017). Results found a different cut-point for one of the TRIM items, namely the cut points for TRIM item 18 did not create the most distinction between the males when binned at '1:4' but rather when binned at '1:2.' The logical composite was therefore modified to utilize the new cut-points for TRIM item 18; namely, $\text{Trim18}_{(1:2)} \wedge [\text{Trim } 4_{(3:5)} \vee \text{Trim16}_{(3:5)}]$. Even with these new cut-points, however, the logical composite failed to differentiate between the two groups of males; 34% of the males (12 of 35) who first self-reflected matched the composite and 26% of the males (9 of 34) who did not self-reflect also matched the composite.

Study 1 Discussion

Results once again failed to replicate the findings of Exline and colleagues (2008) as analyses failed to reveal an interaction between gender and condition on vengefulness scores and on overall TRIM scores. Additionally, results failed to replicate the findings of Grice and colleagues (2017), as males who first self-reflected were just as likely to match the logical composite as those who did not first self-reflect [It is possible that persons could fit the composite in one of two scenarios: 1) by endorsing TRIM item 4 OR endorsing TRIM item 16, or 2) by endorsing both TRIM item 4 AND TRIM item 16. Perhaps the former type of men are more theoretically consistent or understandable than the latter, but both types fit the logical structure of the composite. Only 11 total males responded according to situation 2 within Study 1's composites and only 2 males responded in this same manner across studies 2 and 3. Removing these males did not impact analyses and therefore are not considered further.]. Additional analyses further revealed that the original cut-points used to dichotomize the individual TRIM items were not replicated in the current sample. The variability using the threshold analysis to bin the TRIM items into theoretically consistent cut-points makes judging the replicability of the original composite more difficult. Consequently, in Study 2 we eliminated the use of the artificial cut-points by replacing the Likert-type response format on the TRIM with a strictly dichotomous '*yes*'/ '*no*' format. Moreover, we included a neutral response (*uncertain*) for all items in order to avoid potential forced responses. The adjusted response format ('*yes*/*no*') fits better with the discrete, dichotomous nature of *Logical Hypothesis Testing* (Grice et al., 2016) and *Qualitative Comparative Analysis* (Ragin, 2008; Fiss, 2011) by allowing the theoretical composites to be formed without the need to use an automated algorithm to create artificial cut-points. The use of the discrete responses further allows the researcher to avoid any theoretical inconsistent cut-points due to the threshold analysis. For example, Grice and colleagues' (2017) composite indicated that the male would be classified correctly if they endorsed TRIM item 18 from 1 to 4, meaning strongly disagree to agree. This would indicate that men could be classified correctly while withdrawing from the offender which would not make theoretical sense. The utilization of discrete yes/no responses allows the researcher to utilize *Logical Hypothesis Testing* and *Qualitative Comparative Analysis* without worry of theoretical inconsistencies appearing within the composite due to the dichotomization of the Likert-Type Scale.

Study 2 Method

Participants

Following the original sample size goal of study 1 ($N \geq 206$), 250 undergraduate psychology students recruited through the SONA system participated in the current study in exchange for course credit. The minority of participants were male ($n = 94$, 37.60%) and were between the ages of 18 and 44 ($M = 20.21$, $SD = 3.24$). Regarding participants' ethnicity, the majority identified themselves as Caucasian ($n = 194$), with the remaining participants identifying as African American ($n = 19$), Native American ($n = 11$), Hispanic/Latinx ($n = 10$), Asian/Asian American ($n = 9$), and "Other" ($n = 7$).

Materials and Procedures

Participants completed the study via Qualtrics in the same manner as study 1. As mentioned above, items on the TRIM were changed from a Likert-type format to a dichotomous '*yes*'/ '*no*' format with a neutral (*uncertain*) response option to avoid forced responses. Cronbach's alphas for the three subscales were still high, ranging from .79 – .90. The original four items for both the personal capability and the similar offense questions required the participant to imagine a scenario (two questions) and to recall an event in their own life (two questions). To shorten the study time and reduce participant fatigue, only two of the personal capability ("*Can you imagine a situation in which you could do something as bad as what the other person did*?" and "*Thinking back over your entire life, do you think that you have ever done anything as bad as what the other person did?*") and similar offense ("*Can you imagine a situation in which you could do something similar in type to what the other person did*? and "*Thinking back over your entire life, do you think that you have ever done anything similar in type to what the other person did?*") questions were retained. To maintain consistency in the underlying question format, imagining a scenario and recalling a previous experience, one question of each type was retained. The response format for these questions was also presented as: *yes*, *no*, or *uncertain*. Unfortunately, the Cronbach's alphas for the personal capability, similar offense, and combined subscales were low (.52, .60, and .60, respectively).

Study 2 Results

The following logical composite was tested in this new sample of participants:

$\text{Trim18}_{(no)} \wedge [\text{Trim } 4_{(yes)} \vee \text{Trim16}_{(yes)}]$.

Again, this composite describes participants who did not withdraw from the offender (Trim 18, endorsed '*no'*), and who subsequently found themselves either wishing ill towards the offender (Trim 4, endorsed '*yes'*) or giving up their anger towards the offender (Trim 16, endorsed '*yes'*). Results revealed only 16 of 49 males (33%) fit the logical composite if they first self-reflected. This proportion was similar to the result for the males who did not first self-reflect, as only 14 of 45 (31%) matched the composite.

Further analyses revealed that 19 males (20.21% of the sample) selected the '*uncertain*' option for Trim item 18, indicating they were hesitant to withdraw from the offender. More importantly, 28 males (29.79%) indicated they withdrew from the offender by endorsing '*yes*' for item 18 of the TRIM. These males, therefore, demonstrate an avoidant, unforgiving nature (see McCullough et al., 2006) and though they were not classified correctly via the composite, the message received from them seems clear: "I prefer to withdraw or am hesitant in my decision to withdraw." Subsequently, these males were not faced with the choice between wishing ill (Trim 4) or releasing their anger (Trim 16) towards the offender.

Study 2 Discussion

Grice and colleagues' (2017) original findings again failed to replicate in this second study. Specifically, replacing the multi-point rating scale with discrete responses (e.g., *yes*, *no*, *uncertain*) did not improve the logical composite as a discriminator between males who self-reflected prior to completing the TRIM and those who self-reflected after completing the questionnaire. Responses for the majority of males in both groups failed to fit the composite. Further analyses revealed that half of the males failed to fit the composite because they were either hesitant to withdraw (Trim 18 endorsed '*uncertain*') or withdrew (Trim 18 endorsed '*yes*') from the offending person. These males were therefore not faced with the immediate choice of wishing ill on the other person (Trim 4) or releasing their anger (Trim 16), as indicated in the composite. In other words, by withdrawing, these males were ostensibly eliminating the possibility of reconciliation with the other person. It may also be the case that the withdrawal of these males reveals a lack of desire to reflect upon the wrongdoing from the offending person's perspective, which would have hindered the efficacy of the manipulation.

Given the apparent ambiguity inherent within Trim item 18 and how it might negatively impact the accuracy of the composite, the '*uncertain*' option was replaced with '*If neither tell us why*' in Study 3. This free-response format could also provide insight into how the participants were understanding the item. In addition, we wrote two sets of new questions (herein referred to as Discrete Questions) in order to attempt to further discriminate between males who withdrew from the offender and males who do not withdraw from the offender. These new questions paralleled the three items from the TRIM in the logical composite

under investigation in studies 1 and 2, but they further target males who currently have withdrawn from the offender. Finally, given the unexpected drop in the Cronbach alpha values for the personal capability and similar offense questions in Study 2, we also included all eight of the original items in Study 3.

Study 3 Method

Participants

Due to the unsuccessful attempt of study 2, the sample size was bolstered by leaving the study open for the duration of the semester with no participant cap. Four hundred and seventy-six undergraduate psychology students, recruited through the SONA system, participated in the current study in exchange for course credit. Two participant's data points were lost due to an error in Qualtrics, which failed to assign these participants to a condition (experimental or control), therefore four hundred and seventy-four participants were utilized in the data analyses. The minority were male (n = 118, 24.89%) between the ages of 18 and 38 (M = 19.21, SD = 1.74). Regarding participants' ethnicity, the majority identified themselves as Caucasian (n = 365), with the remaining participants identifying as Hispanic/Latinx (n = 33), African American (n = 28), "Other" (n = 28), Asian/Asian American (n = 11), and Native American (n = 9).

Materials & Procedures

Participants completed the study via Qualtrics in the same manner as study 2. The '*yes*' and '*no*' response format was again used for the TRIM. The '*uncertain*' option, however, was replaced with '*If neither tell us why*' in order to gain more insight into how the participants were understanding the item. Cronbach's alpha for the three subscales ranged from .63 – .84. The original eight items used to assess personal capability and similar offense in Study 1 were administered; however, responses were recorded by marking '*yes*' or '*no*' or typing a response to the prompt '*if neither tell us why.*' Cronbach's alphas for the personal capability, similar offense, and combined subscales were high (.79, .80, and .87, respectively).

After completing the TRIM and self-reflection items in the order appropriate for each group, participants completed additional discretely scaled items based on the composite discovered by Grice and colleagues (2017). The first question (DQ1) was, '*Do you currently interact or communicate with the offending person?*' to which the participants responded '*yes*' or '*no*.' The remaining questions were presented dependent upon participants' responses to the aforementioned item. If participants responded "*yes*" they were presented with the present-tense phrased discrete items:

'do you plan on continuing your relationship with him or her (DQP2)?'; 'do you see yourself finally giving up any anger that you might have toward him/her (DQP3)?'; 'do you see yourself as hoping something bad will happen to him/her (DQP4)?' Participants endorsed each item with one of the following options: '*yes*,' '*no*,' or '*If neither tell us why*.'

If participants responded "no" to the first item (*Do you currently interact or communicate with the offending person?*), they were presented with the future-tense phrased discrete items:
'do you think you would ever consider having a relationship with him or her in the future (DQF2)?'; 'do you think you could ever give up any anger that you might have toward him/her (DQF3)?'; 'do you hope for something bad to happen to him/her in the future (DQF4)?' Participants endorsed each item with one of the following options: '*yes*,' '*no*,' or '*If neither tell us why*.'

Study 3 Results

Primary Analyses

In study 3 we tested the same TRIM composite found in study 2:
$\text{Trim18}_{(no)} \wedge [\text{Trim 4}_{(yes)} \vee \text{Trim16}_{(yes)}]$,
describing a male participant who did not withdraw from the offender (Trim 18, endorsed '*no*'), and subsequently found themselves either wishing ill towards the offender (Trim 4, endorsed '*yes*') or giving up their anger towards the offender (Trim 16, endorsed '*yes*'). Results for the TRIM logical composite revealed that a meager 26 of 67 males (39%) fit the pattern if they first self-reflected, and this proportion was equal to the value for males who did not self-reflect (20 of 51, 39%). As with Studies 1 and 2 above, the two groups could not be differentiated based on the TRIM composite. As stated above, the neutral response '*if needed tell us why*' was included to gain further insight into how participants were understanding each individual TRIM item. Responses to this prompt are discussed at length in the general discussion below.

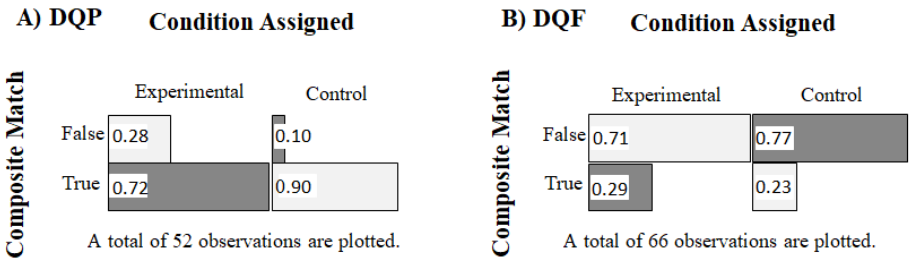
The two sets of discrete questions, phrased in either present tense or future tense (DQP or DQF), were similarly analyzed. The present tense discrete questions (DQP) were only administered to participants who endorsed '*yes*' to '*Do you currently interact or communicate with the offending person?*' (DQ1, n = 52). The following composite indicates that participants were planning on continuing the relationship with the offender (DQP2 endorsed '*yes*') and found themselves either giving up their anger toward the person (DQP3 endorsed '*yes*') or hoping for something bad to happen to the offender (DQP4 endorsed '*yes*'):
$\text{DQP2}_{(yes)} \wedge [\text{DQP3}_{(yes)} \vee \text{DQP4}_{(yes)}]$.

Results for this composite revealed that a majority of the males' responses (23 of 32, 72%) fit the pattern if they first self-reflected. However, contrary to expectation, an even larger majority (18 of 20, 90%) of males who did not first self-reflect also fit the composite.

The future tense discrete questions (DQF) were administered to males who responded '*no*' to DQ1; *n* = 66. These items address a 'hypothetical' reality in which the victim imagined a future relationship with the transgressor. In this 'imaginary world' the composite is as follows:
$DQF2_{(yes)} \wedge [DQF3_{(yes)} \vee DQF4_{(yes)}]$,

indicating that participants were considering a future relationship with the offender (DQF2 endorsed '*yes*') and found themselves either considering giving up their anger towards the offender (DQ3 endorsed '*yes*') or hoping for something bad to happen to the offender in the future (DQF4 endorsed '*yes*'). Results for this future tense composite were strikingly different from those for the present tense composite. Responses for only 10 of 35 males (29%) matched the pattern if they first self-reflected. A similar minority of males who did not self-reflect also fit the pattern; 7 of 31, 23%. The contrasting results for the DQP and DQF items are shown in Figure 2. Moreover, responses to the neutral response item '*if neither tell us why*' were analyzed and are elaborated upon within the Study 3 discussion below.

Figure 2. Study 3 DQP and DQF Composite by Condition Proportional Frequencies



Note. The proportional frequencies for males who first self-reflected (Experimental) and males who did not first self-reflect (Control) who matched as expected (grey) and males who failed to match the composite as expected (white) between the (A) DQP Composite and (B) DQF Composite.

Exploratory Analyses

Due to the unimpressive results from the composites, we conducted additional exploratory analyses. Discrete 'summed' scores were calculated for the TRIM subscales (revenge, avoidance, and benevolence). Additionally, following the methodology employed by Exline and colleagues (2008), the revenge, avoidance, and reverse coded benevolence subscale scores were combined to form a total 'unforgiveness' score. In computing the discrete summed scores, a '*yes*' was scored as '1' and a '*no*' was scored as '0'. Moreover, males (*n* = 41) who marked '*if neither tell us why*' to the TRIM-18-R items were excluded from these analyses, even if they marked this option only once. Of the original 118 males, only 77 were included in these exploratory analyses as these males did not mark '*if neither tell us why*' across any of their TRIM responses.

Male summed scores for avoidance (range: 0 – 7, *Mdn* = 2), revenge (range: 0 – 4, *Mdn* = 0), benevolence (range: 0 – 6, *Mdn* = 4), and total unforgiveness (range: 0 – 16, *Mdn* = 6) were separated into two bins using median splits. These dichotomous scores were then crossed with the personal capability condition (self-reflecting versus non-self-reflecting), as well as, with the males' responses to the first Discrete Question (DQ1: *do you currently interact or communicate with the offending person?*) with a specific observational pattern in mind. Specifically, participants who first self-reflected or endorsed '*yes*' to DQ1 were hypothesized to be classified with a pattern of high benevolence, low revenge, low avoidance, and low unforgiveness, whereas participants who did not first self-reflect or endorsed '*no*' to DQ1 were expected to be classified with the exact opposite pattern (i.e., low benevolence, high revenge, high avoidance, and high unforgiveness).

The results from the personal capability condition failed to match any of the expected patterns and are reported in their entirety within Table 2 below. As seen in the aforementioned table, both the males who first self-reflected and the males who did not first self-reflect failed to match the hypothesized patterns of observations. The exploratory results of the males' responses to the first Discrete Question (*Do you currently interact or communicate with the offending person?*), however, were vastly more impressive than the previous analyses. As expected, the majority of

males (28 of 35, 80%) who endorsed '*yes*' on DQ item 1 (DQ1) had low levels of revenge. Contrary to the hypothesized pattern, however, only a slight minority of males (18 of 42, 43%) who endorsed '*no*' on DQ item 1 had high levels of revenge. The results for male's avoidance scores followed the hypothesized patterns, as the majority of males (29 of 35, 83%) who endorsed '*yes*' to DQ1, had lower avoidance, comparatively the majority of males (29 of 42, 69%) who endorsed '*no*' to DQ1 had higher avoidance. The results for the males' benevolence scores again supported the hypothesized patterns. A majority of males (28 of 35, 80%) who endorsed '*yes*' to DQ1 had higher reported benevolence, whereas a majority of males (33 of 42, 79%) who endorsed '*no*' to DQ1, reported lower benevolence. Finally, the majority of males (31 of 35, 89%) who endorsed '*yes*' to DQ1 reported lower total unforgiveness, and a majority of males (28 of 42, 67%) who endorsed '*no*' to DQ1 reported higher total unforgiveness (see Table 2).

Table 2
Study 3 Male TRIM-18-R Motivations By Personal Capability and DQ1 Response

	Personal Capability		DQ1 Response	
TRIM Motivations	Self-Reflecting	Non-Self-Reflecting	Yes	No
Revenge				
Low n (%)	**33 (69%)**	19 (66%)	**28 (80%)**	24 (57%)
High n (%)	15 (31%)	**10 (34%)**	7 (20%)	**18 (43%)**
Avoidance				
Low n (%)	**26 (54%)**	16 (55%)	**29 (83%)**	13 (31%)
High n (%)	22 (46%)	**13 (45%)**	6 (17%)	**29 (69%)**
Benevolence				
Low n (%)	27 (56%)	**13 (45%)**	7 (20%)	**33 (79%)**
High n (%)	**21 (44%)**	16 (55%)	**28 (80%)**	9 (21%)
Unforgiveness				
Low n (%)	**28 (58%)**	17 (59%)	**31 (89%)**	14 (33%)
High n (%)	20 (42%)	**12 (41%)**	4 (11%)	**28 (67%)**

Note. The proportional frequencies and expected patterns (bolded) for males' summed responses across the TRIM-18-R subscales (*revenge*, *avoidance*, and *benevolence*) compared against the Personal Capability condition assigned (self-reflecting and non) and responses to DQ1 (*Do you currently interact or communicate with the offending person?*). A total of 77 male observations are included.

Study 3 Discussion

Results from study 3 replicated the negative findings of study 2, as the TRIM composite once again failed to support any classification differences between self-reflecting and non-self-reflecting males. An insufficient amount of information was gathered from the TRIM composite alone in study 2; therefore, in study 3 we allowed for open-ended responses with the inclusion of the response choice "*if neither tell us why*" and distributed the sets of Discrete Question items. The new items presented in study 3 were used to form new logical composites in a further attempt to differentiate between the two groups of males (self-reflecting versus non-self-reflecting) who are either intentionally withdrawing from the offender or currently in relations with the offender. These items were formed into two separate composites: the present tense DQP composite and the future tense DQF composite. For the DQP composite, there was no clear difference between self-reflecting males and non-self-reflecting males as the majority of males in both groups fit the composite well. Similarly, the two groups of males were not distinguishable on the DQF composite. Unlike the DQP composite proportions, the majority of males in both conditions failed to adequately conform with the DQF composite.

This stark difference in the patterns for the two sets of discrete questions may be further explained from the neutral qualitative responses. While the '*if neither tell us why*' response to any of the DQ items (DQP or DQF) was only endorsed a few times (n = 11, 9.32%) by the males, there is a clear message to be considered from their qualitative responses. The males responding to the DQP items rarely endorsed the '*if neither tell us why*' item, as a meager 6% of the males (3 out of 52) endorsed the neutral response for at least one of the three DQP items. However, in consideration of these 3 responses, only 1 of them provides further insight into how the person understands the item. In response to DQP item 1 (*do you plan on continuing your relationship with him or her*?), the participant indicated that he planned on continuing the relationship for the sake of the previous friendship, but that he had no desire to resume a close friendship or anything more than an acquaintanceship with the offending person. The remaining 2 neutral responses came in response to DQP item 3 (*do you see yourself finally giving up any anger that you might have toward him/her*?) and indicated that they might release their anger or already had released the anger towards the offending person.

The males responding to the DQF items endorsed the neutral item (*if neither tell us why*) at a slightly higher rate, as roughly 12% (8 of 66) of these males endorsed the neutral response for at least one of the

three DQF items. The responses of particular interest for these males occurred in response to DQF item 2 (*do you think you would ever consider having a relationship with him or her in the future*?) and item 3 (*do you think you could ever give up any anger that you might have toward him/her?*). The males who were considering having a relationship with the offender in the future (DQF2) and endorsed the neutral item (*if neither tell us why*) wrote that it was 'contingent' upon the offender's reconciliatory behaviors (e.g., if the person paid them back, apologized, or if the person truly changed). One male indicated that he would only consider having a relationship with the offender if their paths crossed, therefore indicating that he would not go out of his way to reconnect with the offender but more or less is leaving it up to 'fate.' The males who were considering giving up anger towards the offender (DQF3) indicated similar contingencies for their release of anger towards the offender (e.g., if the person's personality changed, if they own up to what they did) or that they had already released their anger. Lastly, one male indicated that a discriminatory offense was committed against him, and that these acts frequently occur with a number of individuals he has encountered. Due to these acts, all he has is anger towards the people who discriminate against him. For this male, reconciliation with the most recent offender has become an impossible task due to the repetition of discriminatory offenses from multiple others, but rather this individual only has anger towards any person that is discriminatory towards himself or others like him.

The results of the third study indicate that the TRIM composite was once again unable to discern any clear differences between the self-reflecting male and non-self-reflecting male. However, in consideration of the two discrete composites (DQP and DQF) and the qualitative responses from the DQP and DQF items, it is evident that there are differences between these two groups of males, and that researchers have thus far inadequately assessed these differences. For instance, both groups of males (self-reflecting and non) who currently communicate with the offending person matched the DQP composite well, indicating that the relationship with the offender may be of key importance in the consideration of the release of anger or revenge motivation. Previous literature may support the differences between the DQP and DQF groups, in that, Fehr and colleagues' (2010) meta-analysis found relationship closeness to be a situational correlate for forgiveness. The current research indicates that whether the relationship exists at all seems to be equally important in determining male's forgiveness motivations. Specifically, the men who currently have any relationship with the offender endorsed the TRIM items consistent with a person who would be said to have greater forgiving motivation; meaning less avoidance and revenge, and higher benevolence. Whereas the men who did not have a relationship with the offender were the exact opposite and would be said to have greater unforgiving motivations; meaning more avoidance and revenge, and lower benevolence. More importantly to the authors' knowledge, this paper represents the first demonstration of the importance of the current relationship with the offender at the individual level.

The results from the qualitative responses from the DQF composite suggest that the males who are not in the relationship with the offender may first be faced with overcoming feelings of recompense and that reconciliation is contingent upon something from the transgressor (e.g., an apology or behavioral change in heart/attitude). These males are ostensibly unable to fit the composite, perhaps due to their own contingencies placed on the offender. Moreover, these males may be unable to release their anger or undecided on their vengeful motivations simply because they have removed themselves from the offender. While the actual reasons for the majority of males are unknown, the qualitative responses to the neutral item "*if neither tell us why*" inform us that at a bare minimum some of these males are placing the responsibility on the offender and that it is "up to them" or that they must "change and reconcile" prior to facing their own internal task of releasing anger or vengeful desires (i.e., forgiving them). Furthermore, apologies have been shown to be a strong predictor for forgiveness (e.g, Fehr et al., 2010), which would suggest that one potential difference, outside of the current relationship differences, between the DQP and DQF composite may reside in the reception of an apology from the offender. This point, however, is unable to be verified in the present study as no information was collected about whether the offender has apologized for the offense or not.

General Discussion

Across all three studies, results failed to support the findings of Exline and colleagues (2008) and Grice and colleagues (2017). We nevertheless argue that several important conclusions can be drawn from the results of the three studies. First and foremost, the results further emphasize the importance of conducting exact replication experiments. Given that the results across the current studies did not align with those conducted previously (e.g., Exline et al., 2008; Grice et al., 2017), this suggests that such data regarding vengefulness in males, as they were originally operationalized, may not be stable. This may ultimately have adverse downstream effects regarding the appropriateness of conclusions that may be drawn, and how such interpretations may be applied to other work in this area. It is particularly problematic for processes aiming to clarify the

mechanisms by which vengefulness may influence thoughts and behaviors of males who had transgressions committed against them without first exactly replicating the proposed findings. Moreover, the failure to replicate the gender effect, as demonstrated by Exline and colleagues (2008) in Studies 4 – 7, may cast doubt on the results of subsequent studies which arose prior to any replication attempts of the original results (e.g., Exline & Zell, 2009; Fehr et al., 2010). As demonstrated by the Reproducibility Project (Open Science Collaboration, 2015), it is critical to ensure that the proposed phenomena or theory produces consistent findings prior to further investigation of the phenomenon or expansion of the theory.

Second, the ambiguity of the Likert-type rating scale used in the TRIM-18-R may help explain the inconsistencies between our results and the results of Grice and colleagues (2017). When examining the scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) one could argue that there is no 'true' difference between a value of '1' and a value of '2.' A '1' on the scale, in our case, indicates '*strong disagreement*' and a '2' indicates '*disagreement*.' Therefore, to indicate a lack of vengefulness, participants must disagree with the revenge items and the extent to which they disagree becomes irrelevant (*strongly disagree* vs *disagree* are both a degree of disagreement). The utilization of *Logical Hypothesis Testing* (see Grice, 2011) is an alternative methodology to traditional approaches; however, the ambiguity of the multi-rating point scale may have impacted the cut-points derived from the automated algorithm from Grice and colleagues' (2017) sample to our sample in Study 1. The utilization of discrete responses in Studies 2 and 3 avoided the use of automated cut-points and artificial dichotomization in general, but unfortunately the results of the logical composite did not improve. Though the present data might not demonstrate the utility of this process, perhaps due to the theory being ineffective itself rather than the methodologies, a researcher using discrete responses may explore logical combinations of items by way of theoretically-justified cut-points, rather than using artificially-dichotomized options which might be influenced by the data itself (e.g., the threshold analysis) and may not ultimately align with patterns of concepts as intended by the theory. For example, the threshold analysis conducted by Grice and colleagues binned TRIM item 18 from 1 (strongly disagree) to 4 (agree), which statistically maximized the most difference between the self-reflecting and non-self-reflecting males (see Grice et al., 2017), but theoretically did not make sense for the composite itself.

Third, and perhaps the most important for advancing the work of Exline and colleagues (2008) and research on forgiveness in general, greater attention should be given to the relationship between the participant and the offender, specifically concerning the implications the relationship (or lack thereof) may have on revenge, avoidance, and benevolent motivations. The exploratory results from Study 3 suggest there were no differences in revenge, avoidance, and benevolent motivations between the males who self-reflected and the males who did not; however, there were large differences between the males who currently communicated with the offender and those who did not. Specifically, the majority of males who currently had a relationship and communicated with the offender endorsed the revenge and avoidance items (i.e., lower revenge and avoidance scores) with lower frequencies than their non-communicative male counterparts. Moreover, the majority of communicative males more frequently endorsed the benevolence items than the non-communicative males. Our findings further support previous literature suggesting that relational closeness is an important component of forgiveness (e..g, Fehr et al., 2010). At the individual level, the majority of men who were currently in relation with the offender responded in a more forgiving manner according to the TRIM-18-R (i.e., high benevolence, low avoidance, and low revenge), whereas the men who were not in relation with the offender responded in a more unforgiving manner (i.e. low benevolence, high avoidance, and high revenge).

Fourth, Study 2 revealed that half of the males were uncertain in their withdrawal, or outrightly withdrawing from the offender. To address this issue, we removed the uncertain option and added a qualitative free-response option, *if neither tell us why*, to gather more information in Study 3 from the TRIM and DQ composites. The qualitative information gained from the males is quite informative and must be considered further. Researchers are quick to utilize multi-rating point scales and tend to rely purely on statistics (e.g., Cronbach's alpha) to determine how participants are responding to the items; however, the reliance upon mean scores and statistics alone does not actually inform us as to how participants are understanding the items. If the research first noted by Exline and colleagues (2008) is to progress, then the reliance upon multi-rating point scales and the accompanying aggregate statistical analyses must be abandoned and replaced with qualitative information about the individuals themselves. In consideration of this point, the male responses after endorsing the '*if neither tell us* why' to TRIM items 4, 16, and 18 (the same items used to form the TRIM composites) offer further insight. A common theme emerged from the males who responded to TRIM item 4. Specifically, a few males endorsed the neutral response to wishing ill towards the offender. These males indicated they did not care what happened, they did not wish ill

towards the offender directly, but did not seem to mind if something bad did happen to the offender (i.e., Karma). The response to this item informs us that these males may not be motivationally vengeful, per the TRIM-18-R; however, situationally, it is clear they do not care about the offender and are not demonstrating a prosocial change in behavior towards the offender (i.e., forgiveness) as defined by forgiveness researchers (for example, Worthington, 2005). The responses to TRIM item 16 further emphasize that the item may be ineffective at fully encapsulating what is occurring within the participant. The responses to the neutral item were again considered, and a theme once again emerged from the males; namely, the males have released their anger, but they do not want to rebuild a relationship with the offender. Once again the males who endorsed the neutral response to TRIM item 16 were not demonstrating a benevolent motivation, nor were they demonstrating the opposite. Rather, these males indicated they were no longer angry, but they did not want anything to do with the offender (i.e., avoiding). These males were not demonstrating a prosocial change in behavior towards the offender, despite the fact they were no longer angry or seemingly resentful. Moreover, the responses to TRIM item 18 offered minimal insight into how participants understood and responded to the items, or how they did not understand them, as one individual admitted he was unfamiliar with the word 'withdraw.' The remaining two males indicated they sometimes avoided the person and they never wanted to see the offender again, respectively. Overall, the qualitative results reveal males who do not conform to the traditional definition of forgiveness (increase in prosocial behaviors towards the offender, while decreasing in negative behaviors towards the offender; see Worthington, 2005). They do not have vengeful intent towards the offender, nor do they have a prosocial benevolence towards the offender. Instead, they want nothing to do with the offender.

Fifth, the exploratory analyses conducted in Study 3 may offer conceptual clarity to Exline and colleagues' (2008) theory of forgiveness and personal capability. The combined revenge, avoidance, and reverse-coded benevolence subscales can be interpreted as a total "unforgiving motivation" (see McCullough & Hoyt, 2002; McCullough et al., 2006; Worthington et al., 2015). Males in the experimental (self-reflecting) and control (non-self-reflecting) groups did not conform to the expected TRIM motivational patterns. Males who indicated they were currently communicating with the offender, however, did correspond with the expected TRIM motivational pattern. These males reported lower overall unforgiveness motivations, lower levels of revenge, lower levels of avoidance, and higher levels of benevolence, indicating they may have already forgiven the offender or that they possessed motivations and behavioral dispositions towards forgiving the offender (see McCullough et al., 1997; 1998; 2001; McCullough & Hoyt, 2002; McCullough, Fincham, & Tsang, 2003; Paleari, Regalia, & Fincham, 2005; Carmody, & Gordon, 2011). In contrast, those who were not currently communicating with the offending person reported higher unforgiving motivation scores and lower benevolence scores, indicating they had not yet forgiven the offender or lacked the right motivation and behavioral disposition to forgive (see McCullough et al., 1997; 1998; McCullough & Hoyt, 2002; Pearce, Strelan, & Burns, 2018).

Finally, research might also benefit from re-investigating the impact of rumination on revenge, avoidance, and benevolent motivations at the level of the individual, without the use of multi-point rating scales. Rumination has received conflicting reports inside of the literature. Some findings indicate that ruminating might cause a downwards comparison (Wills, 1981; Wood, Taylor, & Lichtman, 1985; McCullough et al., 2007), which could cause the victim to view the perpetrator in a hypervigilant state, thereby potentially increasing vengeful motivations. Other research has supported the notion that vengefulness may be subdued if one's self-reflection leads to increased pro-social feelings towards the transgressor (Yssledyk et al., 2007; Exline et al., 2008; Exline & Zell, 2009). Our results suggest that neither of these theories may be adequate, as the self-reflection resulted in neither any increased vengeful motivation, nor decreased vengeful motivation. Furthermore, the slight majority of males who self-reflected actually endorsed less benevolence motivations towards the offender, whereas the slight majority of males who did not self-reflect endorsed higher benevolence towards the offender (see Table 2). While only a slight majority in either direction, these results suggest that having the participants self-reflect may indeed initiate a downward comparison that impacts benevolent motivations, but not revenge motivations. This finding seems to align with literature that has shown that rumination can hinder the forgiveness process by increasing focus on the negative thoughts and emotions towards the event and offender (see Fehr et al., 2010; McCullough et al., 2007). However, this finding should be interpreted with caution as only a slight difference emerged between the two groups of men and would need to be further replicated with *a priori* hypotheses. The perspective-taking task may only be effective for participants who are currently communicating or open to communicating with the offender, however, this remains unknown. These findings further create a conflict among the perspective-taking/personal capability literature. For example, a recent meta-analysis by Fehr and colleagues (2010) found perspective-taking to be a dispositional correlate for

forgiveness such that the task of perspective taking was positively related to forgiveness. Perspective taking is the act of cognitively considering another's point of view (see Davis, 1983) and is closely related with Exline and colleagues' (2008) theory of personal capability. Contrastingly, the current research indicates that male self-reflection on personal capability did not create substantial differences in forgiveness motivations compared to men who did not self-reflect. If this research is to progress, then it must part with the past and embrace a future that recognizes that forgiveness is first an intention, or perhaps a motivation, and then an action (e.g., relational restoration), which remains seldom studied in the lab apart from the overreliance on self-report scales and measures (see Worthington et al., 2015).

Limitations and Future Research

These results emphasize the need for increased attention towards the impact that the current relational status and rumination has on forgiveness motivations towards the offender and relational restoration (see Rusbult, Hannon, Stocker, & Finkel, 2005) with the offender. Moreover, the results from the exploratory analyses must themselves be scrutinized and replicated in an exact fashion prior to any continuation of this research.

The main limitation of our research is that our samples consist of purely undergraduate students. Studies have suggested that vengeance motivations can change depending on age (Rey & Extremera, 2016), and the limited range of age demographics from using undergraduate students does not accurately represent the population. Further, neither Exline and colleagues (2008; Study 7) nor our own studies, gathered any explicit information to determine differences due to the severity or type of transgression. The role of transgression type and severity may additionally impact the personal capability task, especially if the transgressor has never committed the offense that the person committed against them. If this were so, then according to the personal capability mechanism, this person would be entirely unable to take the perspective of the offender, as they have themselves, never committed such an offense; therefore, the manipulation would likely be entirely ineffective for that individual. Additionally, our study was not culturally diverse, and research suggests that differences in cultures may impact one's motivations to retaliate against an offender (seek vengeance) or forgive them (Mellor et al., 2012; Hook, Worthington, & Utsey, 2009; Hook, Worthington, Utsey, Davis, et al., 2012). While our study samples' ethnicity breakdowns were similar to that of Exline and colleagues (2008), Lin and Frank (2016) sampled more Asian American students. Research suggests there are differences between Western (individualistic) cultures and Eastern (collectivistic) cultures (Mellor et al., 2012; Hook, Worthington, & Utsey, 2009; Hook, Worthington, Utsey, Davis, et al., 2012). Therefore, the discrepancies between our results and Grice and colleagues' (2017) composite discovered in Lin and Frank's (2016) data could be due to cultural differences between the samples. Additionally, Exline and colleagues (2008) used a slightly modified TRIM-18-R, while our study copied the TRIM-18-R as provided by Lin and Frank (2016) and McCullough and Hoyt (2002). This could be a limitation in our "exact" replication, although we believe the differences were not likely to impact the results in a meaningful way.

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Data Statement

Raw quantitative data for all three studies will be supplied within the Open Science Framework (OSF) data repository, at time of publication. Due to the sensitive nature of the topics written about, survey respondents were assured that responses to qualitative items would remain anonymous; therefore, all qualitative data will be recoded to remove any identifiable information (e.g., names) and will only be made available by requesting it from the corresponding author.

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