

CLOSING THE GAP BETWEEN INTENTION AND BEHAVIOUR: A NEW MEASURE OF
SELF-REPORTED BEHAVIOURAL FORGIVENESS

Closing the gap between intention and behaviour: A new measure of self-reported
behavioural forgiveness

Tayla Bradley

University of Adelaide, South Australia

This thesis is submitted in partial fulfilment of the Honours degree of Bachelor of
Psychological Science (Honours).

Word Count: 9, 101

Table of Contents

Title Page	1
List of Figures.....	5
List of Tables	6
Abstract.....	7
Declaration.....	8
Acknowledgements	9
Introduction.....	10
Defining Forgiveness.....	11
Types of Forgiveness.....	12
Approaches to the Measurement of Forgiveness.....	12
<i>Self-report Measures</i>	12
<i>Behavioural Measures</i>	13
Current Study Rationale.....	15
<i>Item Development</i>	15
<i>Aims</i>	16
<i>Hypotheses</i>	17
<i>Transgression-specific variables</i>	17
<i>Trait variables</i>	17
<i>Existing forgiveness measures</i>	17
Method	18
Participants.....	18
Procedure.....	18
Key Measures.....	19
<i>Transgression-specific Variables</i>	19
<i>Relationship closeness</i>	19
<i>Intent</i>	19
<i>Remorse</i>	19

<i>Hurt</i>	20
<i>Rumination</i>	20
<i>State empathy</i>	20
<i>State Anger</i>	20
<i>New Behavioural Forgiveness and Revenge Items</i>	21
<i>Trait Variables</i>	21
<i>Trait forgiveness</i>	21
<i>Agreeableness</i>	21
<i>Neuroticism</i>	22
<i>Existing Transgression-Specific Forgiveness Measures</i>	22
<i>Rye Forgiveness Scale</i>	22
<i>Decisional Forgiveness Scale</i>	22
<i>Emotional Forgiveness Scale</i>	22
Results	23
Background Variables.....	23
Factor Structure of the New Behavioural Forgiveness Measure.....	23
Construct Validity of the New Behavioural Forgiveness Measure.....	27
<i>Transgression-specific Variables</i>	29
<i>Trait Variables</i>	29
<i>Existing Transgression-specific Forgiveness Measures</i>	30
Supplementary Analyses.....	31
<i>Age Effects</i>	31
<i>Gender Effects</i>	31
<i>Predictors of Forgiveness Behaviours</i>	31
<i>Predictors of Revenge Behaviours</i>	33
<i>Exploration of the Forgiveness-Revenge Relationship in the New Behavioural Measure</i>	34

Discussion.....	36
Summary and Interpretation.....	36
<i>Factor structure of the new behavioural forgiveness measure.....</i>	<i>36</i>
<i>Supported hypotheses related to forgiveness behaviours.....</i>	<i>36</i>
<i>Unsupported hypotheses related to forgiveness behaviours.....</i>	<i>37</i>
<i>Supported hypotheses related to revenge behaviours.....</i>	<i>39</i>
<i>Unsupported hypotheses related to revenge behaviours.....</i>	<i>40</i>
<i>Predictors of forgiveness behaviours.....</i>	<i>41</i>
<i>Predictors of revenge behaviours.....</i>	<i>41</i>
<i>Why are forgiveness and revenge behaviours related?.....</i>	<i>42</i>
Strengths and Limitations.....	42
<i>Strengths.....</i>	<i>42</i>
<i>Limitations.....</i>	<i>43</i>
Implications of the Current Study.....	44
<i>Theoretical implications.....</i>	<i>44</i>
<i>Applied implications.....</i>	<i>45</i>
Future Research.....	46
Conclusion.....	46
References.....	48
Appendix: Removed Items in the New Behavioural Forgiveness Measure.....	54

List of Figures

Figure 1: The two-factor model for the new behavioural forgiveness measure.....26

Figure 2: The indirect effect of revenge on forgiveness via remorse.....35

List of Tables

Table 1: Summary of factor loadings for the new behavioural forgiveness measure.....25

Table 2: Bivariate correlations between forgiveness and revenge behaviours, transgression-specific and trait variables, and existing forgiveness measures.....28

Table 3: Multiple regression analysis predicting forgiveness behaviours from transgression-specific variables, trait variables and existing forgiveness measures.....32

Table 4: Multiple regression analysis predicting revenge behaviours from transgression-specific variables, trait variables and existing forgiveness measures.....34

Abstract

Forgiveness is critical to the successful functioning of human relationships, yet its inherent complexity makes it difficult to measure. The overwhelming majority of forgiveness measures are self-report, and require individuals to report on their motivations towards a transgressor. However, individuals' reported motivations are often inconsistent with their demonstrable behaviours. This study aimed to address this inconsistency through the development of a new measure of self-reported behavioural forgiveness. Participants ($N = 121$) recalled a hurtful transgression and indicated whether they had performed a range of forgiveness and revenge behaviours towards the offender. Measures of transgression-specific variables, trait variables and existing forgiveness instruments were also presented. As expected, the new behavioural forgiveness measure fit a two-factor structure, distinguishing forgiveness and revenge, which were positively related. The new measure demonstrated good construct validity and internal consistency. Remorse appeared to mediate the positive relationship between forgiveness and revenge behaviours. The results suggested that individuals may act in both a vengeful and forgiving manner when transgressed against, however, this is inconsistent with previous research. Therefore, it may be important to measure forgiveness on the basis of performed behaviours, rather than reported motivations; the new behavioural forgiveness measure could provide a means for doing so.

Declaration

This thesis contains no material which has been accepted for the award of any other degree or diploma in any University, and, to the best of my knowledge, this thesis contains no material previously published except where due reference is made. I give permission for the digital version of this thesis to be made available on the web, via the University of Adelaide's digital thesis repository, the Library Search and through web search engines, unless permission has been granted by the School to restrict access for a period of time.

Acknowledgements

This thesis is dedicated to my Baba; your soul may have left halfway through this journey, but your spirit gave me strength for its entirety. I hope I have made you proud.

I would like to thank my Mum and Dad for their endless love and support, their humbling words on occasions of success, and their wisdom, guidance and motivating words during the more stressful periods. I also want to thank my brother, Damon, for always providing a much-needed optimistic perspective and a sense of reassurance and calm amongst all the chaos. To the rest of my family, thank you for your continued faith in my success and your valuable input, your genuine interest in my research, and for all your support in recruiting participants. I would also like to thank Dion for reminding me of my ability when I doubted it, and for providing me with confidence which I often lacked this year.

Finally, I would like to thank my supervisors, Dr. Peter Strelan and Prof. Nicholas Burns, for their patience and continued mentorship throughout this year; their knowledge and experience has been invaluable.

Closing the gap between intention and behaviour: A new measure of self-reported behavioural forgiveness

Forgiveness is critical to the successful functioning of human relationships, and has been shown to be important in the restoration of these connections, as well as, personal wellbeing, following a transgression (McCullough & Witvliet, 2002). Given the fallible nature of humanity, and therefore, the inevitability of such transgressions, forgiveness is now widely studied by psychologists. Yet, despite the development of many instruments to measure the construct, there remains an important measurement discrepancy; a self-report measure of forgiveness *behaviours* does not exist. Therefore, the aim of this study is to develop and test such a measure.

This centrality of forgiveness to human life means that it has considerable implications and a profound manifestation throughout society. For this reason, forgiveness has become a recent subject of psychological investigation. Initial research highlighted the potential benefits of forgiveness for an individual's mental health and wellbeing (Smedes, 1984), and the psychological processes which may facilitate or hinder forgiveness have also been studied (McCullough, 2001). For example, there is agreement that empathy and positive attributions and appraisals about the transgressor and the transgression respectively, are all involved in, and have significant influence on the forgiveness process (McCullough, 2001). Further, many robust predictors of forgiveness have been established, ranging from factors which are specific to the transgression, to interpersonal variables and personality attributes (McCullough & Witvliet, 2002). As a result, personality psychologists have been able to develop a profile of the types of people who tend to forgive more readily than others, and social psychologists have attempted to predict the presence (or absence) of forgiveness in daily interactions between people (Worthington, 2005). Additionally, developmental psychologists have studied the development of individuals' moral-cognitive reasoning about

forgiveness across the lifespan (McCullough & Witvliet, 2002), and the changing nature of forgiveness over time has even been modelled as a logarithmic equation (McCullough, Luna, Berry, Tabak, & Bono, 2010). Moreover, health psychologists have focussed on the impact of forgiveness on physical health and wellbeing outcomes (Worthington, 2005). As this theoretical understanding of forgiveness has developed, researchers have also considered its real world applications. Consequently, forgiveness has come to inform numerous clinical interventions, as well as programs which have a more psychoeducational focus (McCullough & Witvliet, 2002). For example, forgiveness is prominent component of couples and family therapy, and has also come to be used for the treatment of anger issues, depression and trauma (Worthington, 2005). Hence, forgiveness has transitioned from a theoretical point of interest to a promising intervention.

Defining Forgiveness

As the body of knowledge related to forgiveness has increased, so have the number of unanswered questions; especially how to define forgiveness. Most descriptions include the commonality that there is an intra-individual change in motivation towards the transgressor, whereby the victim becomes decreasingly motivated to retaliate against, and maintain estrangement from the offender, and increasingly motivated by reconciliation and goodwill for the offender despite their hurtful actions (McCullough & Root, 2005). Hence, there is a distinction between vengeful, unforgiving motivations and benevolent, forgiving ones. In fact, revenge is often conceptualized as the opposite of forgiveness, such that the absence or suppression of vengeful thoughts and intentions is enough to indicate forgiveness (Zechmeister, Garcia, Romero, & Vas, 2004). Prominent forgiveness measures such as the Transgression Related Inventory of Motivations-18 (TRIM-18) adhere to this kind of conceptualization, and measure unforgiving motivations in terms of revenge and also avoidance, in order to determine forgiveness (Worthington et al., 2015). This general

reduction in negativity and increase in prosociality towards the offender is considered a foundational and uncontroversial feature of forgiveness (Fernández-Capo, Fernández, Sanfeliu, Benito, & Worthington, 2017; McCullough & Root, 2005).

However, there are a multitude of definitions that exist and there is no single description that is taken as universal. Some definitions focus on the motivational changes within the victim, as just described, while others take an affective approach, suggesting forgiveness as occurring by a kind of emotional replacement; negative emotions such as anger are replaced by more positive emotions like empathy (Dorn, Hook, Davis, Van Tongeren, & Worthington, 2013). Other definitions adopt a cognitive or behavioural framework, emphasising the same prosocial change but in terms of the victim's thoughts and behaviours, respectively. Further, some research makes a distinction between decisional and emotional forgiveness; the first being a change in intention towards a transgressor, and the latter an emotional shift (Worthington, 2005). Hence, it is clear that forgiveness is an inherently complex construct that may be interpreted and therefore studied from more than one perspective.

Types of Forgiveness

This multi-faceted nature of forgiveness has led to the development of many measures, some of which are more consistent with particular definitions, and therefore, highlight different aspects of the construct. Dispositional measures assess the tendency of a person to forgive across time and situations, and so, conceptualize forgiveness as a relatively stable trait across the lifespan. In comparison, episodic measures focus on forgiveness as linked to a particular transgression (Worthington et al., 2015).

Approaches to the Measurement of Forgiveness

Self-report measures. The method used to measure forgiveness can also vary. The overwhelming majority of transgression-specific measures are self-report, which prompt

individuals to think of a single transgressor who has hurt them, and subsequently, answer a series of questions which assess their current motivations, thoughts and affect towards that transgressor (McCullough & Root, 2005). For example, the Enright Forgiveness Inventory (Enright & Rique, 2004) and the TRIM-18 (McCullough et al., 1998), two of the most prominent measures of forgiveness, both use this self-report format.

Self-report measures are beneficial in that they are relatively straightforward and allow individuals to consider their own experiences, and therefore, provide a good deal of insight into the largely interpersonal nature of forgiveness. However, they are not without limitations (Dorn et al., 2013). One issue with self-report measures is their susceptibility to response biases, including socially desirable responding and acquiescence bias, where respondents – especially those who are unmotivated to complete the study – may consistently agree with the content, regardless of its context (Dorn et al., 2013). Additionally, self-report instruments are often plagued by recall bias, where individuals are more likely to recall particular types of transgressions, namely, those that are most hurtful (Dorn et al., 2013). Hence, the full range of contexts in which forgiveness may occur is often not captured by self-report measures.

Behavioural measures. Other measures highlight the more deliberate components of forgiveness by focussing on the behaviours that an individual actually performs towards a transgressor. Typically, this is in the context of an experimental manipulation in which participants experience an offense and are then given an opportunity to demonstrate prosocial or, at the least, cooperative behaviour, towards the offender. For example, in the Cyberball paradigm, the individual is excluded from a game of ‘ball toss’ with two other players, and in a follow-up round, they are given the opportunity to start with the ball and therefore decide whether or not to pass to the offender and include them in the game (Dorn et al., 2013). Similarly, the Prisoner’s Dilemma game requires two players to decide whether or not to

cooperate with one another in an attempt to acquire the most points and win the game. The offense occurs when one player decides not to cooperate; consequently, the offender gains a large number of points, but the cooperative individual loses a significant amount (Exline, Baumeister, Bushman, Campbell, & Finkel, 2004). Hence, in the long term, a decision not to cooperate is beneficial for the respective player but detrimental to the other, willing party. In this case, the participant's decision to cooperate or not in subsequent rounds is taken as indicative of whether they have forgiven the offender (Exline et al., 2004). More general resource distribution tasks have also been used to measure forgiveness behaviours, including the allocation of raffle tickets, money, or another commodity, to an offender after they have committed a transgression (Exline et al., 2004). Moreover, other activities, such as writing a list of the positive qualities of an offender, have also been used as behavioural measures of forgiveness (Dorn et al., 2013)

The advantage of behavioural measures of forgiveness over self-report measures is due to their ability to capture an individual's actual behaviours in real time, rather than a report of said actions after the fact. Often, an individual's intentions, thoughts and motivations (assessed by self-report measures) do not map onto their behaviours (Nisbett & Wilson, 1977), and so, while a person may say they are motivated to seek revenge, they may not actually do so, and likewise with forgiveness. Hence, measuring forgiveness on the basis of self-reported behavioural intentions is likely to yield different results compared to a measurement which relies on enacted behaviours. In saying this, while behavioural measures of forgiveness may not be susceptible to the same biases that come with self-report measures, they still have their weaknesses.

While experimental manipulation of the transgression may allow for greater control over the measurement of forgiveness, behavioural measures come with a trade-off between these standardized conditions and more realistic ones. Transgressions in the laboratory are

often contrived and for practical and ethical reasons, may be less severe than offenses experienced in the real world (Carlisle et al., 2012). Additionally, they are likely to lack personal meaning, especially if the offender is a stranger or is automated (e.g., a computer as in the Cyberball game). Hence, laboratory-induced offenses may be unlikely to approach the level of hurt that is experienced when an individual is transgressed against in the real world (Dorn et al., 2013). Moreover, the behaviours demonstrated by an individual after a simulated transgression, are open to interpretation due to conflation with other variables. For example, in the Prisoner's Dilemma paradigm, a lack of cooperation with the other player may not necessarily suggest non-forgiveness towards the offender, but rather, a competitive desire to win the game (Exline et al., 2004).

Current Study Rationale

When considering the limitations of behavioural approaches to forgiveness in conjunction with those of self-report measures, it seems that each may complement one another and together, provide a more rounded assessment of forgiveness. Yet, such triangulation is absent from the literature; behavioural measures and self-report instruments both exist, but are used independently of one another (Fernández-Capo et al., 2017). Hence, the current study aims to combine the self-report format with the behavioural approach in order to develop a new measure of behavioural forgiveness which asks individuals to report on their own, performed behaviours. This new measure of self-reported behavioural forgiveness addresses the issue of inconsistencies between one's reported intentions and their actual behaviours, and therefore, potentially improves on existing self-report measures. It also builds on previous behavioural measures by allowing individuals to reflect on their own, lived experiences, rather than a hypothetical and potentially meaningless transgression.

Item development. The items for the new behavioural forgiveness measure were developed in an earlier preliminary study as part of a University of Adelaide summer research

scholarship under the supervision of Dr. Peter Strelan. We generated an initial list of 31 behaviours which were deemed indicative of either forgiveness (11 items) or revenge (20 items). We tested the preliminary validity of the items against the TRIM-18 with a sample ($N = 307$) recruited through the online research participation site, Prolific. We subjected these responses to a principal components analysis, which yielded a five component structure with two distinct overarching components; forgiveness and revenge. Consequently, we removed one item due to its comparatively poor loading of less than .50, 11 items which were too similar to the remaining items and another five items which we considered redundant and of no additional value to the measure (see Appendix). We were left with 23 behaviours which were considered good indicators of forgiveness or revenge (see Table 1).

Aims. The current study aims to further develop this new measure of self-reported behavioural forgiveness and validate the 23 items more comprehensively, beyond the TRIM-18. This study will attempt to replicate the two construct structure of forgiveness and revenge, demonstrated in the preliminary study. Additionally, the construct validity of the new measure will be tested with a number of transgression-specific variables; relationship closeness, intent, remorse, hurt, rumination, state empathy and state anger. These are all well-established predictors of transgression-specific forgiveness such that the greater the degree of relational closeness, remorse shown by the offender and empathy exhibited by the victim, the more likely that victim is to forgive. On the other hand, an individual is less likely to forgive if they perceive the offense as intentional, experience a high degree of hurt and anger, and also ruminate about the offense (Fehr, Gelfand, & Nag, 2010).

The construct validity of the new measure will be further established with relevant trait measures – trait forgiveness, agreeableness and neuroticism. Presumably, if an individual is typically forgiving and agreeable (at the dispositional level), the more likely they are to forgive in any particular situation, whereas, a typically neurotic individual, may exhibit a

lesser degree of forgiveness (Fehr et al., 2010). Finally, existing measures of transgression-specific forgiveness will be included to refine the construct validity of the new behavioural measure; the Rye Forgiveness Scale, Decisional Forgiveness Scale and Emotional Forgiveness Scale.

Hypotheses.

1. The new behavioural forgiveness measure will exhibit a two-factor structure indicating forgiveness and revenge.

Transgression-specific variables. Given this dichotomy:

2a. The forgiveness items will have a positive relationship with relationship closeness, remorse and state empathy, but a negative relationship with intent, hurt, rumination and state anger.

2b. The revenge items will have a negative relationship with relationship closeness, remorse and state empathy, but a positive relationship with intent, hurt, rumination and state anger.

Trait variables.

3a. The forgiveness items will have a positive relationship with trait forgiveness and agreeableness, but a negative relationship with neuroticism.

3b. The revenge items will have a negative relationship with trait forgiveness and agreeableness, but a positive relationship with neuroticism.

Existing forgiveness measures.

4a. The forgiveness items will have a positive relationship with the Rye Forgiveness Scale, Decisional Forgiveness Scale and Emotional Forgiveness Scale.

4b. The revenge items will have a negative relationship with the Rye Forgiveness Scale, Decisional Forgiveness Scale and Emotional Forgiveness Scale.

Method

Participants

Participants were $N = 121$ individuals between the ages of 18 and 62 years ($M_{age} = 26.7, SD = 12.7$); 64.5% identified as female, 33.9% as male and 1.7% did not identify as either. The majority of participants were Australian (71.7%), although the sample had great diversity with a smaller number identifying as Chinese (6.5%), Vietnamese (4.9%), Italian, (2.5%), Indian (2.5%), Sri Lankan (1.6%), Korean (1.6%), American, Filipino, Indonesian, Malaysian, New Zealander, Peruvian, Somalian, Turkish and Venezuelan (all 0.8%). The sample consisted of first-year psychology students from the University of Adelaide, and members of the general public, all of whom self-selected to participate in the study. The first-year psychology students at the University of Adelaide received course credit for their participation, but the wider community was not provided with any incentive. The inclusion criteria were a minimum age of 18 years and the ability to recall a hurtful event. An a priori power analysis (Faul, Erdfelder, Lang, & Buchner, 2007) indicated a sufficient sample size of 84 participants for correlational analyses (for a medium effect size, $r = .30$, power = .80 and $\alpha = .05$). However, as the reliability of a confirmatory factor analysis is dependent on a large sample, a sample of 84 participants was deemed too small. In order to effectively establish the factor structure of the new behavioural measure, approximately five participants per item were required (Kass & Tinsley, 1979). Hence, with a total of 23 new items, a minimum sample of 115 participants was proposed.

Procedure

The study was advertised on the University of Adelaide Research Participation System, LinkedIn, Facebook and via word-of-mouth. Participants completed the survey online via Survey Monkey, and were prompted to recall an event from the recent past when someone (with whom they were still in contact with) hurt or upset them. In order to

personalize the survey and elicit the full range of emotions associated with the hurtful event, participants recorded the first name of the offender. The name automatically appeared throughout the survey where applicable thereafter, but was deleted once the data was collected. Next, participants described the transgression and how it made them feel. They indicated the amount of time that had elapsed since the incident, as well as their relationship to the offender (e.g., relative, friend, intimate partner). The remainder of the survey consisted of the transgression-specific and trait variable measures, existing transgression-specific forgiveness measures and the new behavioural forgiveness measure. They are discussed in detail below in order of their measurement.

Key Measures

For all measures consisting of multiple items, the average score was calculated for each participant; a higher score indicated a greater level of agreement.

Transgression-specific variables.

All transgression-specific variable measures use a seven-point Likert scale where 1 = *strongly disagree* and 7 = *strongly agree*, unless otherwise specified.

Relationship closeness. Four items measured the subjective closeness and commitment between the respondent and the offender (“I feel close to X”, “I feel committed to my relationship with X”, “I feel invested in my relationship with X” and “I feel satisfied with my relationship with X”; $\alpha = .95$). Participants responded on a five-point Likert scale where 1 = *strong disagree* and 5 = *strongly agree*.

Intent. The perceived intentionality of the offender’s actions was measured by three items (“I think that X’s behaviour was intentional”, “I think that X’s behaviour was deliberate”, and “I think that X meant to hurt me”; $\alpha = .90$).

Remorse. Remorse was measured by three items (“X was remorseful”, “X made amends”, and “X apologized for what he/she did”; $\alpha = .90$).

Hurt. The degree of hurt experienced by the participant was measured by three items (“What X did was hurtful”, “The event is still painful to me”, and “Compared to other hurtful events in my life, this was the most hurtful”; $\alpha = .64$).

Rumination. Rumination about the transgression was measured by eight items (e.g., “I couldn’t stop thinking about what he/she did to me”; $\alpha = .95$) developed by McCullough, Bono and Root (2007). Participants indicate how much they have experienced each item since the transgression on a six-point Likert scale, where 1 = *not at all true of me* and 6 = *extremely true of me*. This scale is psychometrically sound with a consistently high level of internal consistency ($\alpha \geq .94$) and well-established construct validity which ensures the distinctness of these eight items from measures of other, similar constructs (McCullough, Bono, & Root, 2007).

State empathy. State empathy was measured by Coke, Batson and McDavis’ index of empathic concern (1978). Participants are presented with five adjectives (e.g., “compassion”; $\alpha = .95$) and are asked to indicate the degree to which they have felt each emotion towards the offender since the transgression. Responses are measured on a seven-point Likert scale where 1 = *not at all* and 7 = *extremely*. This scale demonstrates high internal consistency ranging between $\alpha = .79$ and $\alpha = .95$, as well as construct validity, demonstrating a positive association with dispositional empathy and perspective taking (Worthington, Hook, Utsey, Williams, & Neil, 2007).

State anger. State anger was measured with the State-Anger (S-Ang) subscale of the State-Trait Anger Expression Inventory-2 (STAXI-2) which measures the intensity of angry feelings and the extent to which an individual feels like expressing anger at a particular time (Spielberger, 1988). The S-Ang subscale includes 15 items ($\alpha = .95$) which assess the general feeling of anger (e.g., “I am furious”), the verbal expression of anger (e.g., “I feel like shouting out loud”), and the physical expression of anger (e.g., “I feel like breaking things”)

on a four-point Likert scale where 1 = *not at all* and 4 = *very much so* (Spielberger, 1988).

The validity and reliability of the STAXI-2 is well established (Eckhardt, Norlander & Deffenbacher, 2004) and it is considered an effective measure of the experience of anger.

New behavioural forgiveness and revenge items. The new behavioural forgiveness and revenge items were developed in a previous pilot study, as discussed earlier, and can be seen in Table 1. Forgiveness behaviours were measured with 13 items (e.g., “I have spoken positively of X to other people”; $\alpha = .89$), and revenge behaviours were measured with 10 items (e.g., “I have posted hurtful/disrespectful things about X on social media”; $\alpha = .71$). Participants responded either *yes* or *no*.

Trait variables.

All trait variable measures use a five-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*.

Trait forgiveness. Trait forgiveness was measured with the Trait Forgiveness Scale which consists of 10 items that measure the tendency of a person to forgive across time and situations (e.g., “People close to me probably think I hold a grudge too long”; $\alpha = .79$) (Berry, Worthington, O'Connor, Parrott, & Wade, 2005). The Trait Forgiveness Scale has well-established internal consistency, ranging between $\alpha = .74$ and $\alpha = .80$, and test-retest reliability ($r = .78$ over eight weeks), both critical features of a dispositional measure (Berry et al., 2005).

Agreeableness. The agreeableness subscale of the NEO Five-Factor Inventory-3 (NEO-FFI-3) was administered in order to measure this aspect of personality (McCrae & Costa, 2010). It consists of 12 items (e.g., “I would rather cooperate with others than compete with them”; $\alpha = .78$) which have been shown to have considerable internal reliability with adult participants ($\alpha = .90$) and the NEO-FFI-3 more generally, is deemed a valid measure of the five-factor model of personality (Costa & McCrae, 2008). Additionally, the NEO-FFI-3

has practical benefit in that it is a brief instrument to administer, yet does not have reduced validity in comparison to the full-length NEO Personality Inventory-3 (NEO-PI-3) as a result (Costa & McCrae, 2008).

Neuroticism. The neuroticism domain of personality was measured with the 12-item neuroticism subscale of the NEO-FFI-3 (e.g., “I often feel inferior to others”; $\alpha = .86$) (Costa & McCrae, 2008). Again, these items have been shown to demonstrate high internal consistency within adult samples ($\alpha = .92$) (Costa & McCrae, 2008).

Existing transgression-specific forgiveness measures.

Transgression-specific forgiveness was measured with three existing self-report instruments, which all use a five-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*.

Rye Forgiveness Scale. The Rye Forgiveness Scale uses 15 items to measure the extent to which an individual has forgiven an offender (e.g., “I spend time thinking about ways to get back at the person who wronged me”; $\alpha = .87$) (Rye et al., 2001). The Rye Forgiveness Scale has high internal consistency and construct validity and is also appropriate for the study of forgiveness, irrespective of the relationship between the victim and the offender (Rye et al., 2001). Therefore, it is suitable for the current study.

Decisional Forgiveness Scale. The Decisional Forgiveness Scale consists of eight items that indicate the degree to which an individual has made a decision to forgive an offender (e.g., “I will not talk to him/her”; $\alpha = .77$). The Decisional Forgiveness Scale has good reliability and validity as it correlates strongly with other measures of interpersonal forgiveness (Worthington et al., 2007).

Emotional Forgiveness Scale. The Emotional Forgiveness Scale administers eight items to determine the extent to which an individual has experienced an emotional shift towards an offender (e.g., “I no longer feel upset when I think about him/her”; $\alpha = .80$)

(Worthington et al., 2007). The Emotional Forgiveness Scale also has evidence for good reliability (Worthington et al., 2007)¹.

Three demographic questions about age, gender and nationality were included.

Results

Here, the results of the statistical analyses will be reported. Background variables are given first, followed by the results of a confirmatory factor analysis which addresses hypothesis 1, and the correlational results which address hypotheses 2a-4b (inclusive). Finally, supplementary analyses are reported; multiple regression and mediation analyses.

Background Variables

The amount of time that had elapsed since the transgression ranged from 1 day to 10, 950 days ($M = 1210$, $SD = 2320$). Participants indicated friends as the most common transgressor (43.8%), followed by intimate partners (23.1%), relatives (19.8%), ‘others’ (7.4%), work colleagues and team-mates (3.3%) and acquaintances (2.5%).

Factor Structure of the New Behavioural Forgiveness Measure

A confirmatory factor analysis (CFA) was used to test the proposed two-factor structure of the new behavioural forgiveness measure, given by hypothesis 1. The fit of the CFA model was evaluated using (i) the likelihood ratio chi-square, in this case the Sattora-Bentler adjusted version, because an estimator robust to violation of normality assumptions was used since the data are binary items; (ii) the Comparative Fit Index (CFI) which measures the relative improvement over the null model; and (iii) the Root-Mean-Square Error of Approximation (RMSEA) which is a measure of approximate fit where a value of zero indicates best fit. According to Kline (2011), a range of fit indices should be provided including the test of exact fit and incremental and residual-based indices, that are sensitive to model misspecification but are also relatively independent of sample size (see also Jackson,

¹ The TRIM-18, the most widely used transgression-specific measure of forgiveness, was purposefully excluded from this study, as it was used in the preliminary study to assess the construct validity of the new items.

Gillaspy, & Purc-Stephenson, 2009). Acceptable model fit was judged using the following criteria: CFI > .95, and RMSEA < .06 (see Hu & Bentler, 1999; Jackson et al., 2009; Kline, 2011).

A measurement model was fitted in MPlus v7 using the robust WLSMV estimator (Muthén & Muthén, 2010). A model was fit where items were constrained to load only on the hypothesised factor (forgiveness or revenge) and the factor inter-correlation was freely estimated. The fit of this model was acceptable: $\chi^2(229) = 313.4$, $p < .001$, CFI = .94, RMSEA = .06 with CI₉₀ [.04, .07]. In this solution, forgiveness and revenge were correlated, although the relation was not significant ($r = .16$, $p = .23$). All items had a significant loading greater than .40 on the factor on which they were hypothesized to load (see Table 1); forgiveness had 13 items with loadings greater than .50, and revenge had 10 items with loadings greater than .40. This model is given in Figure 1. Internal consistency for the forgiveness behaviours was $\alpha = .89$, and for the revenge behaviours, $\alpha = .71$. Hence, Hypothesis 1 was supported; the new behavioural forgiveness measure fit a two-factor structure, reflecting forgiveness and revenge.

Table 1. Summary of factor loadings for the new behavioural forgiveness measure

Item	Factor Loadings	
	Forgiveness	Revenge
[F1] I have interacted with X in a friendly manner.	0.84	
[F2] I have followed through on previously made commitments to X.	0.73	
[F3] I have said things that have helped X feel better about what he/she did.	0.65	
[F4] I have given X compliments.	0.88	
[F5] I continue to communicate with X (either in person or online).	0.78	
[F6] I have gone out of my way to engage with X.	0.74	
[F7] I have spoken positively of X to other people.	0.80	
[F8] I have assisted/helped X in some way.	0.86	
[F9] I have let X know, if only through my actions that I enjoy his/her company.	0.85	
[F10] I have continued to do things that I would normally do for X.	0.89	
[F11] I have continued to do the things with X that we did before the incident.	0.83	
[F12] I have asked X for help/assistance.	0.81	
[F13] I have literally told X that I forgive him/her.	0.56	
[R1] I have made X feel bad about what he/she did.		0.62
[R2] I have spread rumours, gossiped or complained about X.		0.43
[R3] I have insulted X because of what he/she did.		0.56
[R4] I have set X up to get into trouble.		0.97
[R5] I have posted hurtful/disrespectful things about X on social media.		0.72
[R6] I have made X look bad in front of others.		0.81
[R7] I have done to X what he/she did to me.		0.72
[R8] I told X that I would never speak to him/her again.		0.57
[R9] I have got other people to ‘side’ with me or against X.		0.59
[R10] I have purposefully embarrassed X.		0.98

Note. Items denoted F measure forgiveness, and items denoted R measure revenge.

$p < .001$ for all items; $r = .16$, $p = .23$

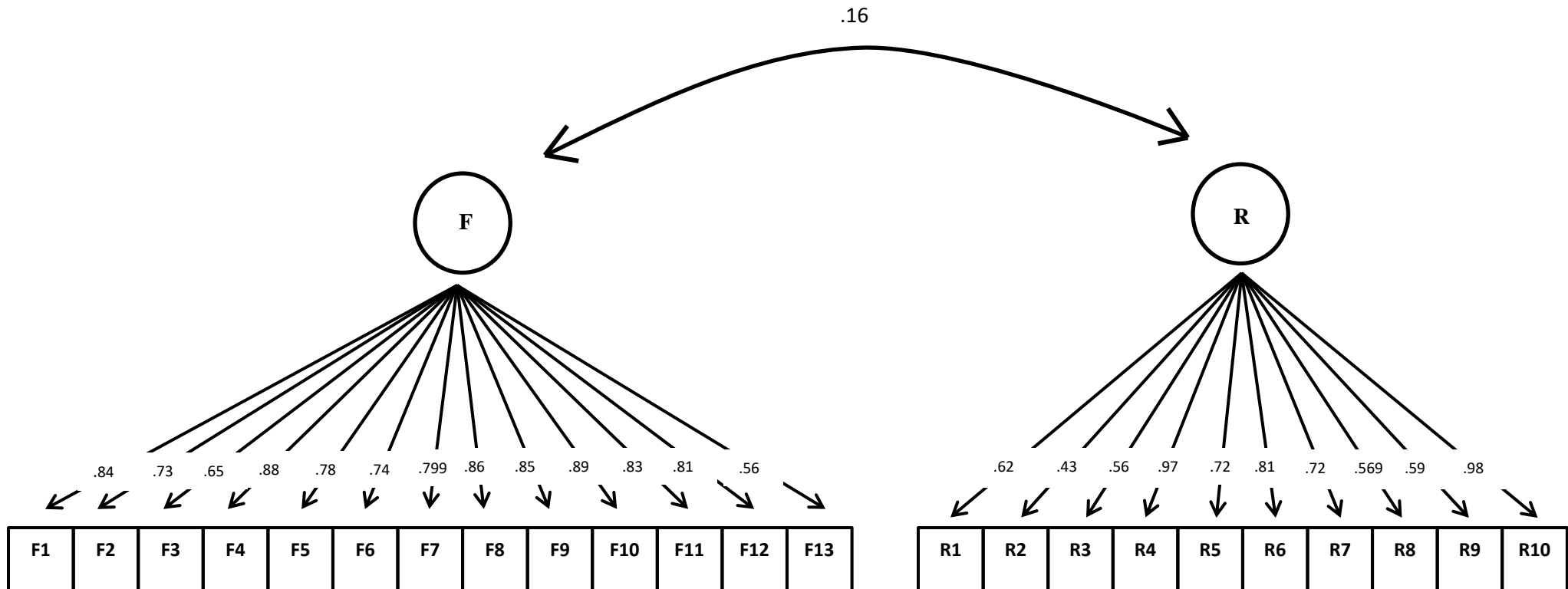


Figure 1. The two-factor model for the new behavioural forgiveness measure.

Standardized parameter estimates are shown (all $p < .001$); for factor correlation, $p = .23$. F = forgiveness; R = revenge. Numbers indicated after F or R, denote the item number; see Table 1 for full item content.

Construct Validity of the New Behavioural Forgiveness Measure

Pearson's bivariate correlations assessed the relationship between the new behavioural measure of forgiveness and the transgression-specific variables, trait variables and existing, transgression-specific forgiveness measures, as specified by hypotheses 2a-4b (inclusive).

Table 2 reports the results.

Table 2. Bivariate correlations between forgiveness and revenge behaviours, transgression-specific and trait variables, and existing forgiveness measures

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Forgiveness Behaviours															
2. Revenge Behaviours	.17														
3. Relationship Closeness	.67	.04													
4. Intent	-.29	.05	-.28												
5. Remorse	.57	.25	.50	-.47											
6. Hurt	-.05	.26	-.24	.10	-.03										
7. State Empathy	.65	.05	.63	-.29	.53	.04									
8. State Anger	.65	.05	-.18	.01	-.06	.44	.03								
9. Rumination	-.16	.11	-.35	.14	-.11	.50	-.06	.36							
10. Trait Forgiveness	.20	-.33	.17	-.15	.12	-.18	.21	-.30	-.24						
11. Agreeableness	-.09	-.30	.03	.07	-.14	-.13	-.07	-.31	-.19	.44					
12. Neuroticism	-.07	.09	-.16	.04	-.13	.18	-.01	.37	.29	-.20	-.11				
13. RFS	.44	-.15	.52	-.26	.38	-.44	.46	-.56	-.52	.44	.25	-.36			
14. DFS	.53	-.21	.52	-.32	.29	-.24	.48	-.34	-.32	.39	.38	-.07	.72		
15. EFS	.68	-.07	.74	-.33	.53	-.36	.70	-.39	-.40	.37	.09	-.27	.74	.61	

Note. RFS = Rye Forgiveness Scale; DFS = Decisional Forgiveness Scale; EFS = Emotional Forgiveness Scale. Correlations with an absolute value of $> .17$ are significant at $p < .05$, and with absolute value $> .22$, at $p < .01$.

Transgression-specific variables. Hypotheses 2a and 2b focussed on the relationship between the new forgiveness and revenge items and the transgression-specific variables. Hypothesis 2a proposed a positive relationship between the new forgiveness items and relationship closeness, remorse and state empathy, but a negative relationship with intent, hurt, rumination and state anger. There were significant, positive correlations between the new forgiveness items and relationship closeness ($r = .67$), remorse ($r = .57$) and state empathy ($r = .65$, all $p < .01$) as shown in Table 1. According to Cohen's (1988) guidelines, these effects range from moderate – for remorse and state empathy - to large, for relationship closeness. Further, there was a significant, small, negative correlation between the new forgiveness items and intent ($r = -.29$, $p < .01$), but no significant correlations with hurt ($r = -.05$), rumination ($r = -.16$) or state anger ($r = -.08$, all $p > .05$). Hence, hypothesis 2a was partially supported.

Hypothesis 2b posited a negative relationship between the new revenge items and relationship closeness, remorse and state empathy, but a positive relationship with intent, hurt, rumination and state anger. There were no significant correlations between the new revenge items and relationship closeness ($r = .04$) or state empathy ($r = .05$, all $p > .05$), and contradictory to the hypothesis, there was a significant, small, positive correlation with remorse ($r = .25$, $p < .01$). Further, there were significant, small, positive correlations between the new revenge items and hurt ($r = .26$) and state anger ($r = .26$, all $p < .01$), however, not for intent ($r = .05$) or rumination ($r = .11$, all $p > .05$). Therefore, hypothesis 2b was also partially supported.

Trait variables. Hypotheses 3a and 3b focussed on the relationship between the new forgiveness and revenge items and trait variables. Hypothesis 3a predicted a positive relationship between the new forgiveness items and trait forgiveness and agreeableness, but a negative relationship with neuroticism. There was a significant, small, positive correlation

between the new forgiveness items and trait forgiveness ($r = .20, p < .05$), but agreeableness ($r = -.090$) and neuroticism ($r = -.070, \text{all } p > .05$) yielded non-significant correlations.

Hence, hypothesis 3a was partially supported.

Hypothesis 3b suggested a negative relationship between the new revenge items and trait forgiveness and agreeableness, however, a positive relationship with neuroticism. There were significant, small, negative correlations between the new revenge items and trait forgiveness ($r = -.33$) and agreeableness ($r = -.30, \text{all } p < .01$). In contrast, there was no significant correlation between the new revenge items and neuroticism ($r = .09, p > .05$). Consequently, hypothesis 3b was partially supported.

Existing transgression-specific forgiveness measures. The final pair of hypotheses focussed on the relationship between the new forgiveness and revenge items and existing transgression-specific forgiveness measures. Hypothesis 4a posited a positive relationship between the new forgiveness items and all three existing measures of forgiveness. There were significant, moderate, positive correlations between the new forgiveness items and the Rye Forgiveness Scale ($r = .44, p < .05$), as well as the Decisional Forgiveness Scale ($r = .53, p < .05$), and a significant, large, positive relationship with the Emotional Forgiveness Scale ($r = .68, p < .01$). Hence, hypothesis 4a was supported in its entirety.

Hypothesis 4b suggested a negative relationship between the new revenge items and all three existing transgression-specific forgiveness measures. A significant, small, negative correlation between the new revenge items and the Decisional Forgiveness Scale was indicated ($r = -.21, p < .05$), however there were no significant relationships with the Rye Forgiveness Scale ($r = -.15$) or the Emotional Forgiveness Scale ($r = -.070, \text{all } p > .05$). Therefore, hypothesis 4b was partially supported.

Supplementary Analyses

In addition to testing the proposed hypotheses, several supplementary analyses were conducted to investigate potential age and gender effects in the new behavioural forgiveness measure, determine the best predictors of forgiveness and revenge behaviours on the new measure, and to understand the observed positive relationship between forgiveness and revenge behaviours on the new measure.

Age effects. Pearson's correlations were conducted to test for any age effects in the new behavioural forgiveness measure. The results indicated a significant age difference for revenge behaviours ($r = -.20, p = .03$), however, not for forgiveness behaviours ($r = -.10, p = .28$).

Gender effects. An independent samples t-test was conducted to determine if there were gender differences in forgiveness and revenge behaviours. Females demonstrated forgiveness behaviours ($M = 0.12, SD = .71$) more than males ($M = -.0024, SD = .73$), and also revenge behaviours ($M = .05, SD = .47$) more than males ($M = .03, SD = .43$). However, these differences were not significant for forgiveness behaviours, $t(117) = -.10, p = .92$, or revenge behaviours, $t(117) = -.32, p = .75$.

Predictors of forgiveness behaviours. Multiple regressions were run in order to determine the best predictors of forgiveness and revenge behaviours on the new measure; all predictor variables were entered simultaneously. For forgiveness, the model was significant, $F(13, 103) = 14.9, p < .001$, $\text{adj. } R^2 = .61$, and the predictor variables accounted for approximately 61% of the variance in forgiveness behaviours. As seen in Table 3, the Decisional Forgiveness Scale was the best predictor of forgiveness behaviours ($\beta = .36, p = .001$), followed by the Emotional Forgiveness Scale ($\beta = .35, p = .011$), relationship closeness ($\beta = .24, p = .012$) and remorse ($\beta = .24, p = .004$). Consistent with this trend, the

Decisional Forgiveness Scale also accounted for the most unique variance in forgiveness behaviours, as calculated by the squared part correlation ($r = .044$), given in Table 3.

Table 3. Multiple regression analysis predicting forgiveness behaviours from transgression-specific variables, trait variables and existing forgiveness measures

Predictor	Forgiveness Behaviours			
	Standardized β	p-value	95% CI	Part correlations (squared)
Constant	-2.51	< .001	[-3.76, -1.25]	
Relationship Closeness	.24	.01	[.03, .24]	.023
Intentionality	.10	.17	[-.02, .10]	.0064
Remorse	.24	.0040	[.03, .15]	.029
Hurt	.09	.26	[-.03, .12]	.0049
Rumination	.02	.81	[-.07, .09]	.00040
State Empathy	.04	.71	[-.07, .10]	.00040
State Anger	.05	.56	[-.11, .21]	.00090
Trait Forgiveness	.06	.41	[-.09, .22]	.0025
Agreeableness	-.18	.01	[-.44, -.04]	-.020
Neuroticism	-.0030	.97	[-.13, .13]	-.0000040
Rye Forgiveness Scale	-.19	.12	[-.46, .06]	-.0081
Decisional Forgiveness Scale	.36	.0010	[.16, .58]	.044
Emotional Forgiveness Scale	.35	.01	[.07, .55]	.023

Note. $R^2 = .65$, $\Delta R^2 = .61$

Predictors of revenge behaviours. For revenge, the model was also significant, $F(13, 103) = 3.21, p < .001, \text{adj. } R^2 = .20$, and the predictor variables accounted for approximately 20% of the variance in revenge behaviours. As demonstrated in Table 4, remorse was the best predictor of revenge behaviours ($\beta = .32, p = .007$), followed by trait forgiveness ($\beta = -.24, p = .027$) and the degree of hurt experienced by the victim ($\beta = .22, p = .040$). Remorse also contributed the most unique variance in revenge behaviours, as indicated by the squared part correlation in Table 4 ($r = .053$).

Table 4. Multiple regression analysis predicting revenge behaviours from transgression-specific variables, trait variables and existing forgiveness measures

Predictor	Revenge Behaviours			
	Standardized β	p-value	95% CI	Part correlations (squared)
Constant	-.122	.84	[-1.31, 1.06]	
Relationship Closeness	.06	.68	[-.08, .12]	.00090
Intentionality	.13	.18	[-.02, .09]	.012
Remorse	.32	.01	[.02, .13]	.053
Hurt	.22	.04	[.0020, .15]	.029
Rumination	-.07	.55	[-.10, .05]	-.0025
State Empathy	-.13	.39	[-.11, .04]	-.0049
State Anger	.15	.21	[-.06, .25]	.012
Trait Forgiveness	-.28	.03	[-.31, -.02]	-.036
Agreeableness	-.10	.37	[-.27, .10]	-.0064
Neuroticism	.06	.57	[-.09, .16]	.0025
Rye Forgiveness Scale	.15	.41	[-.14, .34]	.0049
Decisional Forgiveness Scale	-.17	.26	[-.31, .08]	-.010
Emotional Forgiveness Scale	.08	.66	[-.17, .27]	.0016

Note. $R^2 = .29$, $\Delta R^2 = .20$

Exploration of the forgiveness-revenge relationship in the new behavioural measure. The CFA and correlational results both indicated a positive relationship between forgiveness and revenge behaviours, and this approached significance (for CFA: $r = .16$, $p = .23$; for correlational analysis: $r = .17$, $p = .065$). This suggests that if an individual has

sought revenge, they may be more likely to demonstrate forgiveness, but this is contrary to previous research, which suggests that forgiveness and revenge are opposite. That is, the more forgiving an individual is, the less vengeful they should be and vice versa. One potential explanation for this contradiction may be that revenge acts as a form of punishment; punishment has been shown to facilitate forgiveness by restoring a fair and just world (Strelan, 2018). Additionally, the result indicated a positive relationship between forgiveness behaviours and remorse, and also revenge behaviours and remorse. Hence, revenge as punishment may encourage the transgressor to feel more remorseful which, in turn, may promote forgiveness from the victim. Given this, a mediation analysis was performed. The PROCESS macro was used in SPSS and bootstrapping was employed to test a mediation model (model 4; 5000 samples, bias-corrected; Preacher & Hayes, 2004). Revenge behaviours was entered as the predictor variable, remorse as the mediator and forgiveness behaviours as the outcome variable. This model is given in Figure 2.

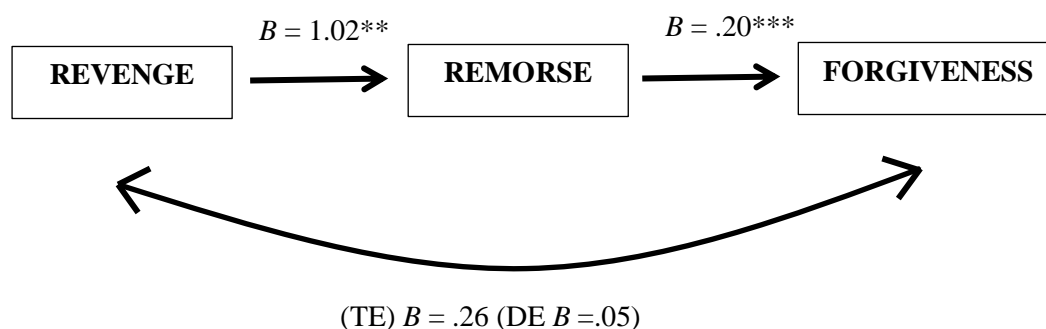


Figure 2. The indirect effect of revenge on forgiveness via remorse. ** $p < .01$, *** $p < .001$.

As seen in Figure 2, revenge behaviours were positively related to remorse ($B = 1.02$, $p = .0070$, $CI_{95\%} = [.28, 1.75]$). Remorse was also positively related to forgiveness behaviours ($B = .20$, $p < .001$, $CI_{95\%} = [.15, .26]$). The total effect (TE) of revenge on forgiveness (TE; B

= .26, $p = .06$) was reduced from approaching significance, to non-significance, with the inclusion of the mediator (direct effect [DE]; $B = .05$, $p = .66$), suggesting a partial mediation through remorse ($B = .21$, $CI_{95\%} = [.05, .38]$). Hence, revenge is associated with forgiveness because of remorse.

Discussion

This study aimed to develop a new measure of self-reported behavioural forgiveness and subsequently, determine the factor structure and construct validity of this new measure. The findings are explained here.

Summary and Interpretation

Factor structure of the new behavioural forgiveness measure. Hypothesis one was supported as the data indicated a two-factor structure for the new measure, indicative of forgiveness and revenge. The two factors were related, but this relationship was not significant. This may suggest that forgiveness and revenge behaviours are independent constructs (at least in the context of this new measure). Additionally, all 23 items had significant loadings on the factor on which they were expected to load, and internal consistency for both factors was considered good (De Vellis, 2003). Hence, the new measure appeared to effectively measure forgiveness and revenge behaviours.

Supported hypotheses related to forgiveness behaviours. Hypotheses 2a, 3a and 4a were partially supported as the results demonstrated a positive relationship between forgiveness behaviours and relationship closeness, remorse and state empathy, as well as trait forgiveness, and the Rye Forgiveness Scale, Decisional Forgiveness Scale and Emotional Forgiveness Scale; however, a negative relationship yielded between forgiveness behaviours and intent. This is consistent with the existing literature.

Hence individuals are more likely to exhibit forgiveness behaviours if they are 'close' to the offender and feel empathetic towards them, and the offender expresses remorse for

their actions. Relationship closeness, remorse and empathy have all been established as robust correlates of forgiveness, and in fact, are interrelated (McCullough et al., 1998). Previous research has proposed that pre-offense relationship closeness influences the likelihood of the offender exhibiting remorse (McCullough et al., 1998). This may be because individuals in 'close' relationships are motivated to maintain this connection and recognise the costs involved in ending the relationship (McCullough et al., 1998). Additionally, a display of remorse may dissociate the offender from the offense (Goffman, 1967), and consequently, elicit empathy on behalf of the victim, making it easier to forgive the offender (McCullough et al., 1998).

Moreover, if an individual is typically forgiving (at the dispositional level), reports forgiving motivations and emotions towards the offender, and makes a deliberate decision to forgive, then forgiving behaviours are also likely to occur. This positive relationship between state and trait forgiveness has been well demonstrated; forgiveness as a disposition is expected to manifest behaviourally in any particular situation (Mischel & Shoda, 1995). Also, an individual's motivations, thoughts and affect are assumed to inform their actions to some extent, despite the proposed inconsistency between the two; hence the positive relationship between forgiveness behaviours all three existing forgiveness measures.

On the other hand, an individual is less likely to perform forgiveness behaviours if they perceive the offender's actions to be intentional. This can be explained by attribution theory which says that there is a correspondence between the hurtful transgression and the offender as a person (Weiner, 1995). Put simply, if a victim perceives an offense to be intentional, then there is an implication that the offender is malicious (Weiner, 1995). Consequently, the victim appraises the offender negatively and forgiveness becomes difficult.

Unsupported hypotheses related to forgiveness behaviours. The data did not support a negative relationship between forgiveness behaviours and hurt, rumination, state

anger and neuroticism, or a positive relationship with agreeableness, as proposed by hypotheses 2a, 3a and 4a. Hurt and forgiveness behaviours may not have been significantly related because of a distinction in the literature between subjective and objective hurt. The majority of previous research has used subjective measures of hurt to demonstrate its relationship with forgiveness. Subjective hurt has been shown influence an individual's attributions and related emotions about the offender, whereas objective harm provides a range of cues which may influence behaviour (Fincham, Jackson, & Beach, 2005). Therefore, this relationship may not have been observed because the new measure focusses on behaviours, not cognitions, but a subjective measure of harm was included in the current study. Hence, it may have been more appropriate to include an objective measure of hurt.

Similarly, the literature also specifies different types of rumination – depressive, fretful and angry, vengeful rumination – which may each have a different influence on forgiveness (Berry et al., 2005). It is not clear which type of rumination was measured in the current study, and the relationship it may have with forgiveness behaviours specifically. Hence, this may explain the non-significant relationship between forgiveness behaviours and rumination in the current study.

In regards to the non-significant relationship between forgiveness behaviours and state anger, it may be that participants had emotional experiences other than anger. It is often assumed that a transgression elicits anger in the victim (Fehr et al., 2010), and while this may be true, other emotions, such as disgust, may manifest in a similar way and could be misinterpreted for anger. Therefore, a single measure of emotion, in this case anger, may not give rise to the expected relationship with forgiveness behaviours.

Much of the evidence for the relationship between forgiveness and agreeableness and neuroticism has come from studies which use self-report measures of forgiving motivations, or, where a behavioural framework has been implemented, participants' actions are coded by

independent observers (Graziano, Jensen-Campbell, & Hair, 1996). Therefore, the predictions of a positive forgiveness-agreeableness and negative forgiveness-neuroticism in the current study may not have been supported because the new measure asks individuals to report on their behaviours, not their motivations.

Supported hypotheses related to revenge behaviours. The data also specified a negative relationship between revenge behaviours and trait forgiveness, agreeableness and the Decisional Forgiveness Scale, but a positive association with hurt and state anger, thereby partially supporting hypotheses 2b, 3b and 4b. This is consistent with previous research.

That is, the more forgiving and agreeable an individual typically is, the less likely they are to demonstrate revenge behaviours. Individuals with a high level of trait forgiveness typically interpret transgressions as worthy of forgiveness and perceive conflict resolution as a viable solution (Fehr et al., 2010). Therefore, such individuals are less likely to demonstrate revenge behaviours because these actions are unlikely to foster reconciliation. Similarly, agreeable individuals have the tendency to cooperate and empathize during times of conflict, unlike those low on this domain, who may be less motivated to maintain positive relations with others, and may purposefully engage in destructive conflict resolution strategies like revenge, in order to disrupt the status quo (Graziano et al., 1996). In addition, revenge behaviours are less likely to be performed when an individual has made a decision to forgive an offender, as this flags their intention to behave less negatively and more positively towards that offender (Worthington et al., 2007).

In contrast, an individual is more likely to engage in vengeful behaviours if they experience a high level of hurt and anger. Severe transgressions may have a significant impact on an individual's life, and so, they may seek revenge in an attempt to reduce their chance of experiencing similar harm in the future (McCullough, Fincham, & Tsang, 2003). Further, hurtful transgressions are likely to elicit feelings of anger within the victim; an

emotional experience which is closely associated with conflict-promoting behaviours such as revenge, and in itself can lead to emotionally-driven retaliation (Allred, 1999).

Unsupported hypotheses related to revenge behaviours. The data did not support the proposed relationships, given in hypotheses 2b, 3b and 4b, between revenge behaviours and relationship closeness, intent, rumination, state empathy, neuroticism, the Rye Forgiveness Scale and the Emotional Forgiveness Scale. Previous research has suggested that individuals may believe vengeance to be a morally correct response after a transgression (McCullough, Bellah, Kilpatrick, & Johnson, 2001). If this is the case, then individuals may undertake revenge regardless of their relational closeness with the offender, the perceived intentionality of the offense, rumination about the offense, the degree of empathy felt toward the offender and the extent to which the victim is neurotic, because these actions are considered appropriate if a transgression is experienced.

As for the non-significant relationship between revenge behaviours and the Rye Forgiveness Scale and Emotional Forgiveness Scale, this may be a reflection of the difference between existing conceptualizations of forgiveness and the suggestions made by the current study. Previously, forgiveness has been defined as a decrease in negative motivations towards the offender and an increase in positive motivations, in that order. However, the results of this study suggest that forgiveness and revenge behaviours may occur simultaneously. Therefore, while a negative relationship between revenge behaviours and these existing measures of forgiveness was expected, this hypothesis was informed by the conceptualization which has historically been taken as correct.

Taken together, these correlational results suggest that the new behavioural measure has reasonable construct validity, such that it is measuring the constructs it was intended to; forgiveness and revenge behaviours.

Predictors of forgiveness behaviours. The multiple regression analysis suggested that the Decisional Forgiveness Scale was the best predictor of forgiveness behaviours. That is, making a conscious decision to forgive an offender is a good indication of whether an individual will actually forgive that offender. Previous research has suggested that forgiveness is an effortful process, and making a decision to forgive is the first step (DiBlasio, 2000; Enright & Fitzgibbons, 2000). When an individual makes a decision to forgive their offender, they also commit to investing their time and energy into substantially reducing their negativity towards the offender (Worthington et al., 2015). Consequently, this commitment is likely to manifest in positive behaviours, such as forgiveness (Exline, Worthington, Hill, & McCullough, 2003).

Importantly, the predictor variables accounted for approximately 60% of the variance in forgiveness behaviours, but only 20% of the variance in revenge behaviours. This suggests that what is important in predicting forgiveness behaviours, may not be so for revenge behaviours. For example, as seen in Table 4, hurt is a significant predictor for revenge, but not forgiveness behaviours. Therefore, while previous research has often explored the relationships of forgiveness and revenge with a similar set of variables, (e.g., the Big Five personality factors), these findings suggest that an understanding of forgiveness and revenge may be better developed with distinct research inquiries.

Predictors of revenge behaviours. The multiple regression also suggested remorse (from the offender) as the best predictor of revenge behaviours. This seems apparently unintuitive, however, the unexpected, positive correlation between remorse and revenge behaviours also followed this trend. This observed functioning of remorse in relation to revenge behaviours may also underlie the positive association between forgiveness and revenge behaviours, demonstrated by the CFA and correlational analysis. Hence, it is here that the interpretation of this relationship will be discussed.

Why are forgiveness and revenge behaviours related? The positive relationship between forgiveness and revenge behaviours highlights the idea that when transgressed against, individuals may act in both a vengeful and forgiving manner. Individuals may perform vengeful actions in order to fulfil a perceived moral obligation to ‘put things right’ and to restore their belief in a just world (Strelan, 2018). Further, individuals may intend revenge as a deterrent for the offender, in which case it may act as a punishment, and possibly facilitate forgiveness (Strelan, 2018). Engaging in vengeful actions may help the offender understand the implications of their actions and cause them to undergo the same emotional experience as the victim. Consequently, the offender may feel remorseful for their actions, and it may be easier for the victim to display forgiving behaviours, due to the remorse-empathy-forgiveness link (McCullough et al., 1998).

The plausibility of this interpretation is strengthened by the correlational data from the current study which showed that remorse retained a significant, positive association with both forgiveness and revenge behaviours (see Table 2). Further, the mediation analysis indicated a positive relationship between revenge behaviours and remorse, and likewise for remorse and forgiveness behaviours. Also, the total effect of revenge on forgiveness was reduced when remorse was included as the mediator. Hence, remorse may act as a mediator for the positive relationship between forgiveness and revenge behaviours.

Strengths and Limitations

Strengths. This is the first study to develop a self-reported, behavioural measure of forgiveness. Previous self-report measures of forgiveness have not focussed on performed behaviours, and existing behavioural approaches to forgiveness assessment have been experimental, using hypothetical, often unrealistic transgressions. This study has improved on both types of measures. It proposed a way around the inconsistency between individuals’ reported intentions and actual behaviours – ask individuals to report on the behaviours they

actually demonstrated towards an offender after a transgression - which has often been a limitation of previous self-report measures. Further, asking individuals to report on their behaviours may be an easier task than reflecting on intentions, motivations and emotions, as most self-report measures require. Additionally, this study advanced the behavioural approach to forgiveness by providing the opportunity for individuals to report their behaviours in relation to a real transgression they had experienced. Allowing individuals to reflect on a genuine transgression is likely to elicit the same range, and intensity of emotions that immediately resulted from the offense. Consequently, the new behavioural forgiveness measure may have allowed for a more honest and natural response than existing behavioural approaches. Hence, this study may have attained a more accurate measurement of forgiveness in comparison to previous research.

Limitations. While this study has addressed a large gap in the literature, and put forward a possible solution, its limitations should be acknowledged. Firstly, the new behavioural measure of forgiveness may still be susceptible to response biases like other self-report measures of forgiveness. It is possible that participants responded in such a way so as to uphold themselves as a moral and fair person, rather than one who maintained grudges and bitterness towards other people who had hurt them. Therefore, participants may not have been so up-front about their demonstration of revenge behaviours. Participants may have also over-played the extent to which they exhibited forgiving behaviours, again, in an attempt to portray a good character.

Another potential drawback of the current study is the conceptualization of the revenge behaviours. Previous ideas about revenge have typically alluded to hostility, disapproval (e.g., the Enright Forgiveness Inventory) and avoidance (e.g., TRIM-18). The new measure also makes reference to these themes (e.g., “I have set X up to get into trouble”, “I have made X feel bad about what he/she did” and “I told X that I would never speak to

him/her again”), but these new revenge behaviours may not be applicable in all circumstances². For example, responding *yes* to “I have made X look bad in front of others” might be indicative of revenge in the case of a transgression involving a work colleague, but not an intimate partner because this might be a normal occurrence in the latter relationship. Hence, it is difficult to develop a list of behaviours which could be considered vengeful in all relationships and under all circumstances. This limitation is reflected in the internal consistency of the revenge behaviours ($\alpha = .71$), which was less than the forgiveness behaviours ($\alpha = .89$).

Implications of the Current Study

Theoretical implications. These findings suggest that when transgressed against, people act in both a vengeful and forgiving manner. Yet, this is not what the existing literature has proposed. Historically, forgiveness has been characterised by decreased negative motivations, thoughts and affect and increased positive ones. Therefore, this reduction in negative motivations is both necessary and sufficient for forgiveness. Put simply, the prevailing view is that revenge and forgiveness are incompatible and typically do not occur together. However, the current study challenges this idea, suggesting it is may be reasonable for an individual to display vengeful behaviours, as well as forgiving ones, at the same time. In this case, a reduction in revenge does not necessarily lead to an increase in forgiveness. In fact, the demonstration of revenge behaviours may even be necessary in order to forgive. Therefore, the conceptualization of forgiveness which has previously received significant agreement may not be an accurate reflection of how forgiveness plays out in the real world. This could be a product of the approach to measurement used in this study - asking individuals about the behaviours they actually performed – and so, it may also be

² It was beyond the scope of the current study to break down effects according to the type of relationship.

important to measure forgiveness in terms of the behaviours that individuals actually demonstrate.

Applied implications. The findings also suggest that remorse may act as a mediator between revenge and forgiveness, and this may be practically important. Forgiveness is a prominent component of many interventions used with individuals, couples and families across a range of issues including alcoholism, infidelity and general conflict, which aim to increase individuals' feelings of forgiveness (Toussaint & Worthington, 2017). For example, Enright's process model guides individuals through four phases which aim to uncover their negative feelings about the offense, encourage them to make a decision to forgive and understand, and feel empathy for the offender (Weir, 2017). Previous research has found a strong, positive relationship between the amount of time individuals spend trying to forgive and the level of forgiveness they successfully experience, and so many of these interventions may be effective (Toussaint & Worthington, 2017). However, according to this study, it may be beneficial to turn the focus of these therapies to the offender. If a demonstration of remorse from the offender encourages forgiveness from the victim, then perhaps the focus of intervention should be to elicit this emotional display from the offender, instead of placing the whole demand on the victim to reach a state of forgiveness.

The positive revenge-forgiveness association posited in the current study may also inform existing forgiveness interventions in another way. The findings suggest that individuals demonstrate both vengeful and forgiving behaviours in response to a transgression, and revenge might even be a necessary step in the forgiveness process. In the real world, revenge often has negative consequences for both the offender and the victim and therefore, should not be condoned (Price, 2009). However, its relationship to forgiveness should be acknowledged and even considered when developing forgiveness interventions. A framework which allows individuals to feel as though they have sought revenge, yet without

enduring its negative consequences, and still reach an end-state of forgiveness, may be crucial. The implication is that there may be more to promoting forgiveness than just acknowledging one's feelings and developing empathy towards the offender, and this may be an important consideration moving forward.

Future Research

Building on the proposed implication of this study, future research should consider how best to elicit remorse from an offender, all while minimizing revenge and promoting forgiveness in the victim. Future research should also replicate this study and further refine the new behavioural measure of forgiveness. However, this should be done with a larger sample in order to test the alternative models that may underlie the proposed factor structure; the first that forgiveness and revenge behaviours are independent constructs, and the second, that the two are related, due to the mediation of remorse. Further, the divergent validity of the new behavioural forgiveness measure should be investigated and a measure of social desirability should be included to address the limitation of the current study. Additionally, future research could test the new behavioural measure with more specific samples, in order to refine the conceptualization of revenge behaviours; for example, with people in organizational settings or from different cultural backgrounds.

Conclusion

This study was the first of its kind to develop a measure of behavioural forgiveness which asks people to report on their own, performed behaviours. This new measure addressed a major limitation of existing self-report measures of forgiveness; an individual's reported motivations and intentions towards an offender do not necessarily map onto their demonstrable behaviours towards that offender. The new measure also improved existing behavioural measures of forgiveness, as it provided individuals with the opportunity to reflect on their own experiences. The findings suggested that the new behavioural forgiveness

measure demonstrated reasonable construct validity, and a two-factor structure, reflecting forgiveness and revenge.

Forgiveness and revenge behaviours seemed to have a positive association and this has important implications. While the existing literature, majorly based on self-reported intentions, has conceptualized revenge and forgiveness as opposite constructs, and as occurring sequentially, this study proposed that forgiveness and revenge behaviours may occur simultaneously. In fact, seeking revenge may even be necessary in order to demonstrate forgiveness. Hence, the previously unanimous conceptualization of forgiveness may not be an accurate reflection of how forgiveness plays out in the real world. Therefore, it may be important to measure forgiveness in terms of the behaviours which individuals actually demonstrate. The new behavioural forgiveness measure may be a useful mechanism for doing so, and this should be pursued further. Importantly, this study has highlighted the need for continued research in this domain, since forgiveness as it has been known, may not continue to manifest that way, as approaches to its measurement become more refined.

References

- Allred, K. G. (1999). Anger and retaliation: Toward an understanding of impassioned conflict in organizations. In R. J. Bies, R. J. Lewicki, & B. H. Sheppard (Eds.), *Research on negotiation in organization* (Vol. 7, pp. 27-58). Greenwich, CT: JAI Press.
- Berry, J. W., Worthington, E. L., Jr., O'Connor, L. E., Parrott, L., 3rd, & Wade, N. G. (2005). Forgivingness, vengeful rumination, and affective traits. *J Pers*, 73(1), 183-225. doi:10.1111/j.1467-6494.2004.00308.x
- Carlisle, R. D., Tsang, J.-A., Ahmad, N. Y., Worthington, E. L., Witvliet, C. v., & Wade, N. (2012). Do actions speak louder than words? Differential effects of apology and restitution on behavioral and self-report measures of forgiveness. *The Journal of Positive Psychology*, 7(4), 294-305. doi:10.1080/17439760.2012.690444
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioural Sciences* (2 ed.). Hillsdale, NJ: Erlbaum.
- Coke, J. S., Batson, C. D., & McDavis, K. (1978). Empathic Mediation of Helping: A Two-Stage Model. *Journal of Personality and Social Psychology*, 36(7), 752-766.
- Costa, P. T., & McCrae, R. R. (2008). The Revised NEO Personality Inventory (NEO-PI-R). In *The SAGE Handbook of Personality Theory and Assessment: Volume 2 — Personality Measurement and Testing* (pp. 179-198).
- De Vellis, R. F. (2003). *Scale Development: Theory and Applications* (2 ed. Vol. 26). CA: Sage Publications.
- DiBlasio, F. A. (2000). Decision-based forgiveness treatment in cases of marital infidelity. *Psychotherapy: Theory, Research, Practice, Training*, 37(2), 149-158.
- Dorn, K., Hook, J. N., Davis, D. E., Van Tongeren, D. R., & Worthington, E. L. (2013). Behavioral methods of assessing forgiveness. *The Journal of Positive Psychology*, 9(1), 75-80. doi:10.1080/17439760.2013.844267

- Eckhardt, C., Norlander, B., & Deffenbacher, J. (2004). The assessment of anger and hostility: a critical review. *Aggression and Violent Behavior, 9*(1), 17-43.
doi:10.1016/s1359-1789(02)00116-7
- Enright, R. D., & Fitzgibbons, R. P. (2000). *Helping clients forgive: An empirical guide for resolving anger and restoring hope*. Washington DC, USA: American Psychological Association.
- Enright, R. D., & Rique, J. (2004). *The Enright Forgiveness Inventory: Sampler set, manual, instrument, and scoring guide*. Menlo Park, CA: Mind Garden.
- Exline, J. J., Baumeister, R. F., Bushman, B. J., Campbell, W. K., & Finkel, E. J. (2004). Too proud to let go: narcissistic entitlement as a barrier to forgiveness. *Journal of Personality and Social Psychology, 87*(6), 894-912. doi:10.1037/0022-3514.87.6.894
- 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*(4), 337-348.
- Faul, F., Erdfelder, E., Lang, A., & Buchner, A. (2007). G*Power3: A flexible statistical power analysis program for the social, behavioural and biomedical sciences. *Behaviour Research Methods, 39*(2), 175-191.
- Fehr, R., Gelfand, M. J., & Nag, M. (2010). The Road to Forgiveness: A meta-analytic synthesis of its situational and dispositional correlates. *Psychological Bulletin, 136*(5), 894-914.
- Fernández-Capo, M., Fernández, S. R., Sanfeliu, M. G., Benito, J. G., & Worthington, E. L. (2017). Measuring Forgiveness. *European Psychologist, 22*(4), 247-262.
doi:10.1027/1016-9040/a000303

- Fincham, F. D., Jackson, H., & Beach, S. R. H. (2005). Transgression severity and forgiveness: Different moderators for objective and subjective severity. *Journal of Social and Clinical Psychology, 24*(6), 860-875. doi:10.1521/jscp.2005.24.6.860
- Goffman, E. (1967). *Interactional ritual: Essays on face-to-face behavior*. Garden City, NY: Anchor Books.
- Graziano, W. G., Jensen-Campbell, L. A., & Hair, E. C. (1996). Perceiving interpersonal conflict and reacting to it: The case for agreeableness. *Journal of Personality and Social Psychology, 70*(4), 820-835. doi:10.1037/0022-3514.70.4.820
- Hu, L., & Bentler, P. M. (1998). Fit indices in covariance structure modelling: Sensitivity to underparamaterized model misspecification. *Psychological Methods, 3*(4), 424-453.
- Jackson, D. L., Gillaspay, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: an overview and some recommendations. *Psychological Methods, 14*(1), 6-23. doi:10.1037/a0014694
- Kass, R. A., & Tinsley, H. E. A. (1979). Factor analysis. *Journal of Leisure Research, 11*, 120-138.
- Kline, R. B. (2011). *Principles and practice of structural equation modelling* (3rd ed.). New York: Guilford Press.
- McCrae, R. R., & Costa, P. T. J. (2010). *NEO Inventories for the NEO Personality Inventory - 3 (NEO-PI-3), NEO Five-Factor Inventory-3 (NEO-FFI-3) and NEO Personality Inventory-Revised (NEO PI-R) Professional Manual*. USA: Psychological Assessment Resources.
- McCullough, M. E. (2001). Forgiveness: who does it and how do they do it? *Current Directions in Psychological Science, 10*(6), 194-197.

- McCullough, M. E., Bellah, C. G., Kilpatrick, S. D., & Johnson, J. L. (2001). Vengefulness: Relationships with forgiveness, rumination, well-being and the Big Five. *Personality and Social Psychology Bulletin*, 27(5), 601-610.
- McCullough, M. E., Bono, G., & Root, L. M. (2007). Rumination, emotion, and forgiveness: three longitudinal studies. *J Pers Soc Psychol*, 92(3), 490-505. doi:10.1037/0022-3514.92.3.490
- 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(3), 540-557. doi:10.1037//0022-3514.84.3.540
- McCullough, M. E., Luna, L. R., Berry, J. W., Tabak, B. A., & Bono, G. (2010). On the form and function of forgiving: modeling the time-forgiveness relationship and testing the valuable relationships hypothesis. *Emotion*, 10(3), 358-376. doi:10.1037/a0019349
- McCullough, M. E., & Root, L. M. (2005). Forgiveness as Change. In E. L. Worthington, Jr. (Ed.), *Handbook of Forgiveness*. New York: Routledge.
- McCullough, M. E., Sandage, S. J., Brown, S. W., Rachal, K. C., Worthington, E. L., Jr., & Hight, T. L. (1998). Interpersonal forgiving in close relationships: II. Theoretical elaboration and measurement. *Journal of Personality and Social Psychology*, 75(6), 1586-1603.
- McCullough, M. E., & Witvliet, C. V. (2002). The psychology of forgiveness. In C. R. Synder & S. J. Lopez (Eds.), *The Handbook of Positive Psychology*. New York: Oxford.
- Mischel, W., & Shoda, Y. (1995). A cognitive-affective system theory of personality: Reconceptualizing situations, dispositions, dynamics and invariance in personality structure. *Psychological Review*, 102(2), 246-268.

Muthén, L. K., & Muthén, B. O. (2010). *MPlus user's guide* (6th ed.). Los Angeles, CA:

Muthén & Muthén.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *84*(3), 231-259.

Price, M. (2009). Revenge and the people who seek it. *Monitor on Psychology*, *40*(6).

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in mediation models. *Behaviour REsearch Methods, Instruments & Computers*, *36*(4), 717-731.

Rye, M. S., Loiacono, D. M., Folck, C. D., Olszewski, B. T., Heim, T. A., & Madia, B. P. (2001). Evaluation of the psychometric properties of two forgiveness scales. *Current Psychology*, *20*(3), 260-277. doi:10.1007/s12144-001-1011-6

Smedes, L. (1984). *Forgive and forget: Healing the hurts we don't deserve*. New York: HarperCollins.

Spielberger, C. D. (1988). *State-Trait Anger Expression Inventory - 2 Professional Manual*. USA: Psychological Assessment Resources.

Strelan, P. (2018). Justice and forgiveness in interpersonal relationships. *Current Directions in Psychological Science*, *27*(1), 20-24. doi:10.1177/0963721417734311

Toussaint, L. L., & Worthington, E. L., Jr. (2017). Forgiveness. *The Psychologist*.

Weiner, B. (1995). Judgements of responsibility. In. New York, NY: Guilford Press.

Weir, K. (2017). Forgiveness can improve mental and physical health. *Monitor on Psychology*, *48*(1).

Worthington, E. L., Jr. (2005). Initial Questions About the Art and Science of Forgiving. In E. L. W. Jr. (Ed.), *Handbook of Forgiveness*. New York: Routledge.

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

Decisional and emotional forgiveness. Paper presented at the Positive Psychology Summit, Washington, DC.

Worthington, E. L., Jr., Lavelock, C., Witvliet, C. V., Rye, M. S., Tsang, J., & Toussaint, L.

(2015). Measures of Forgiveness: Self-Report, Physiological, Chemical, and Behavioural Indicators. In G. J. Boyle, D. H. Saklofske, & G. Matthews (Eds.), *Measures of Personality and Social Psychological Constructs* (pp. 474-502). Oxford: Academic Press.

Zechmeister, J. S., Garcia, S., Romero, C., & Vas, S. N. (2004). Don't apologize unless you

mean it: a laboratory investigation of forgiveness and retaliation. *Journal of Social and Clinical Psychology*, 23(4), 532-564.

Appendix: Removed Items from the New Behavioural Forgiveness Measure

Removed Forgiveness Behaviours

1. "I went for a coffee/drink with X"
 2. "I have said things that would have helped X feel better about what he/she did"
 3. "I have spoken to X in a friendly tone"
 4. "I have answered X's messages/emails/phone calls"
 5. "I have attended events that X has invited me to"
 6. "I have shared my personal belongings with X (e.g., clothes, textbooks)"
 7. "I have stuck up for X in front of other people"
 8. "I have shown affection towards X"
 9. "I have shared my personal achievements/good news with X"
 10. "I have shared personal information with X"
 11. "I have gone out of my way to approach X in public"
 12. "The next time I saw X, I greeted him/her with a hug/handshake"
-

Removed Revenge Behaviours

1. "I have avoided X"
 2. "I have explicitly told X what he/she did to hurt me:"
 3. "I have made sarcastic comments in reference to X"
 4. "I have acted as if nothing had happened between X and I"
 5. "I have reminded X about what he/she did to me"
 6. "I have gone out of my way to approach X in public"
-