

THE EFFECTS OF A LAUGHTER MANIPULATION ON RUMINATION REGARDING
AN INTERPERSONAL TRANSGRESSION IN CLOSE RELATIONSHIPS

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FOREWORD

This thesis is written in accordance with the style of the *Publication Manual of the American Psychological Association (6th edition)* as required by the Department of Psychology at Appalachian State University

Heartfelt gratitude and appreciation go out to my phenomenal graduate advisor and thesis committee chair, Dr. Doris Bazzini, for her endless patience and supportive feedback throughout this process. Her guidance and encouragement made the completion of this project possible. Thanks are also due to the other members of my committee: Dr. Denise Martz, the amazing APA-style guru, and Dr. Lisa Curtin, who gracefully balanced serving on my committee with living in England.

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This thesis is dedicated to my parents, Anne Fondren and Andrew Olsen, for their constant love and support throughout graduate school and every area of my life.

Running head: THE EFFECTS OF A LAUGHTER

The Effects of a Laughter Manipulation on Rumination Regarding an
Interpersonal Transgression in Close Relationships

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Abstract

Given the likelihood that most people will experience a transgression in the context of a close relationship at some point in their lives, forgiveness is a construct with great potential for influencing individuals' quality of life. This study examined a possible manipulation for decreasing rumination regarding an interpersonal transgression, thereby ideally increasing levels of forgiveness towards the transgressor. Because previous literature has suggested that anger and laughter may be incompatible responses, I attempted to use laughter induced by a humorous video to decrease angry rumination. Participants wrote a paragraph detailing an interpersonal transgression they experienced in a close relationship, and then watched a humorous video, a non-humorous video, or waited for a period of time (time-elapse condition) before completing measures assessing rumination and forgiveness. There was no difference in rumination or forgiveness across conditions. However, individuals with high trait forgiveness did report significantly less rumination in both video conditions. Additionally, participants in the time-elapse condition reported proportionately fewer negative thoughts than participants in either of the video conditions. Furthermore, although the main hypotheses were not supported, it does appear that watching something that is enjoyable may have the capacity to distract some people from ruminative thought. Future research should attempt to explore other interventions that may aid in reducing angry rumination or increasing forgiveness.

The Effects of a Laughter Manipulation on Rumination Regarding an
Interpersonal Transgression in Close Relationships

In any interpersonal relationship, conflict is inevitable. Often, how one resolves these disputes can affect the overall success of the relationship. It has been said, “A happy marriage is the union of two good forgivers” (Robert Quillen, as cited in Fincham, Hall, & Beach, 2006, p.415). Gordon, Baucom, and Snyder (2000) state that forgiveness is called for in situations where “assumptions or relationship standards [have been] breached” (p. 204). Thus, it stands to reason that in every significant relationship of a person’s life, some situation will occur requiring the process of forgiveness. Understanding how this process occurs may enhance a better understanding of the maintenance of interpersonal relationships.

Operationalizing the term “forgiveness” for research purposes, however, has not been easy. Forgiveness is a complicated construct, similar to many other processes but distinct in its own way. The current, generally agreed upon definition of forgiveness is, “a change whereby one becomes less motivated to think, feel, and behave negatively (e.g., retaliate, withdraw) in regard to the offender” (Fincham et al., 2006, p. 416). Within this broad definition of forgiveness are several sub-definitions. First, there is a distinction between a person who possesses a generally forgiving personality and an instance of forgiveness in response to a specific, isolated incident. When a person tends to forgive more readily across situations, he/she possesses high *trait* forgiveness. When a person forgives a specific offense committed by another, this is an instance of *episodic* forgiveness (Allemand, Amberg, Zimprich, & Fincham, 2007). Another distinction has been made between decisional and emotional forgiveness. According to Worthington, Witvliet, Pietrini, and Miller (2007), *decisional* forgiveness consists of a conscious decision to attempt to forgive an aggressor and

to move past negative feelings toward that individual. *Emotional* forgiveness, by contrast, occurs when those negative feelings are *actually* reduced, and positive affect and cognitions take their place. Emotional forgiveness seems to have more implications for effecting positive psychophysiological change than decisional forgiveness. Researchers have hypothesized that this is because emotional forgiveness is more closely tied to increases in positive affect than decisional forgiveness (Worthington et al., 2007).

Forgiveness is distinct from condoning, excusing, or justifying an event (Fincham et al., 2006). Forgiveness occurs when the victim recognizes a wrong has been committed and chooses to forgive anyway. Likewise, a reduction in anger towards an offender may indicate denial or forgetfulness of the event, but these constructs are clearly not forgiveness. Finally, forgiveness is also distinct from reconciliation, in that forgiveness can occur even when two parties are not eventually reconciled.

Several studies have linked forgiveness to other constructs, including relationship satisfaction, commitment, and/or longevity (Allemand et al., 2007; Fincham, 2000; Gordon & Baucom, 2003; McCullough et al., 1998; Paleari, Regalia, & Fincham, 2005; Tsang, McCullough, & Fincham, 2006). Fincham et al. (2006) argued that forgiveness's relationship with satisfaction and commitment may be bidirectional. That is, as forgiveness in a relationship increases, so does relationship satisfaction and commitment; and similarly, as satisfaction and commitment within a relationship increase, so does the tendency or desire to forgive. In support of this proposition, Tsang et al. (2006) investigated the relationship between forgiveness and relationship closeness/commitment longitudinally and found that increases in forgiveness predicted future ratings of closeness and commitment. Similarly, several studies have found that the reverse is true as well, and that couples in relationships

consisting of high closeness and commitment were more likely to forgive transgressions (Fincham, 2000; Gordon & Baucom, 2003; Kachadourian, Fincham, & Davila, 2004; Paleari et al., 2005).

With forgiveness empirically tied to so many diverse constructs, a valid question might be, when and how does forgiveness actually occur? Much of the recent work in the area of forgiveness has focused on the concept of rumination as the central mechanism that blocks the forgiveness process (Berry, Worthington, O'Connor, Parrott, & Wade, 2005). Rumination has been defined in several different ways (Kachadourian et al., 2004). Broadly, however, rumination is a process of focusing on negative thoughts regarding past transgressions committed against oneself (Kachadourian et al., 2004; Wade, Vogel, Liao, & Goldman, 2008).

Previous literature has established a negative and bidirectional relationship between rumination and forgiveness (Kachadourian et al., 2004; McCullough, Bono, & Root, 2007; Worthington & Wade, 1999). That is, as rumination increases for an individual, the chances of that individual forgiving his or her transgressor decrease, and similarly, as forgiveness in an individual increases towards his or her transgressor, levels of rumination decrease (Kachadourian et al., 2004; McCullough et al., 1998).

Individuals engaging in the process of rumination frequently become “stuck” in a cycle of anger—anger at the betrayer, anger at the situation, and anger at themselves (Retzinger, 1985; Wade et al., 2008). There is some evidence that the first step in forgiveness is moving past the angry rumination that occurs because of a transgression (Berry et al., 2005; Edmondson, 2005). Berry et al. examined the relationship between forgiveness and rumination in a series of four studies. In Studies 2 and 3, the authors found

support for their hypothesis that vengeful rumination significantly and negatively correlated with trait forgiveness. In Study 2, the authors distributed questionnaires to 300 participants (233 packets returned) containing the Dissipation-Rumination Scale (DRS), the Trait Forgiveness Scale (TFS), the Trait Anger Scale (TAS), the Big Five Personality Inventory (BFI-44), and the Interpersonal Reactivity Inventory (IRI). Specifically, the authors found that the disposition for vengeful rumination positively correlated with trait anger and negatively correlated with trait forgiveness. Additionally, they discovered that vengeful rumination mediated the relationship between trait forgiveness and trait anger, state anger, and motivations for revenge.

Study 3 replicated and expanded on Study 2 by investigating whether an individual's trait forgiveness level and disposition to ruminate in a vengeful way could predict that individual's responses to a recent specific transgression. Participants in Study 3 completed the TFS, TAS, BFI, and IRI used in Study 2 as well as a Fear Questionnaire (FQ) and an Aggression Questionnaire (AQ). Participants described a painful transgression they had recently experienced and then completed the State Anger Scale (SAS) and the Transgression-Related Interpersonal Motivations Scale (TRIM). Researchers found that scores on the TFS significantly and negatively correlated with the Hostility subscale of the AQ as well as with the FQ. The TFS and DRS significantly correlated with each other, both concurrently and predictively. Results also suggested that the construct of vengeful rumination mediated the correlation seen between the TFS and the DRS. These results highlight the importance of rumination at a dispositional level when considering how individuals come to terms with transgressions they experience and the ultimate decision to forgive. What is less clear is

whether rumination has an equal role in mediating forgiveness for more episodic transgressions.

Additionally, while Berry et al.'s (2005) work adds valuable knowledge to the base of literature on forgiveness and rumination, all of their studies were correlational or predictive, rather than experimental manipulations. That is, rather than assessing post hoc reflections of episodes involving forgiveness, it might be interesting to examine more direct interventions that impact the rumination that potentially inhibits forgiveness.

Identifying factors that disrupt the cyclical nature of angry rumination could arguably encourage the process of forgiveness. One such factor may be the use of humor, which generally produces laughter. Empirical research supports the incompatibility of laughter and anger occurring together (Baron, 1976; Prerost, 1995). Several studies have found that exposing previously angered participants to a nonhostile, humor intervention can significantly reduce subsequent aggression by a participant towards the person who angered him or her (Baron 1976; Baron & Ball, 1974; Landy & Mettee, 1969; Mueller & Donnerstein, 1977).

For example, Landy and Mettee (1969) conducted a study during which participants were aggressed against by an experimenter, and then in a subsequently "unrelated" study, asked to either rate the humorousness of hostile and nonhostile cartoons or rate a set of nonhumorous photographs. Finally, they rated the original aggressor on a scale of liking. Participants who evaluated the humorous cartoons rated the aggressor significantly more favorably than did participants in the nonhumor condition. Therefore, the researchers speculated that humor might moderate the effect of angry feelings toward an aggressor. Specifically, Landy and Mettee proposed that viewing the humorous cartoons elicited in

participants an emotional response (humor) that was incompatible with the expression of anger.

Baron and Ball (1974) expanded on Landy and Mettee's (1969) study by extending it to see if humor could similarly influence participants' *physical* aggression toward someone who previously angered them. The researchers had a confederate anger participants by harshly criticizing the participants' stance on an argument and then unnecessarily shocking the participants. Participants were then exposed to either a humorous or a non-humorous set of pictures as part of a supposedly unrelated study. After exposure to the pictures, researchers gave participants an opportunity to administer shocks to the confederate who had previously criticized and shocked them. The researchers measured the duration and intensity of shock administered by the participants to the confederate. Participants exposed to the nonhostile, humorous pictures shocked the confederate for a smaller duration than those in the nonhumor condition. There was no effect of humor for the non-angered participants. Baron and Ball concluded that because the cartoons were of a nonhostile nature, there was no support for previous literature's theory of hostility catharsis as an explanation for aggression reduction, and they concluded that the observed effect was due to the incompatibility of humor and anger.

Deffenbacher (1995) observed that in clinical treatments for individuals with anger disorders, some individuals disrupt their process of anger by avoiding the situation altogether or, when avoidance is impossible, interrupting it by engaging in either an aversive or incompatible response. For example, "a woman who ruminated angrily about her ex-husband placed a rubber band around her left wrist and snapped it firmly when she started to brood about him" (p. 161). However, it is arguable that engaging in a behavior incompatible

with anger as a means of calming down might be psychologically more beneficial to a person than engaging in an aversive response. Examples of this response could include going for a relaxing walk instead of entering an argument or stating that they will discuss the matter later. In the case of use of humor as an incompatible response, a person could presumably activate humorous cognitions regarding a potentially provocative situation as a way of redirecting the budding anger and channeling it into a healthier outlet. In this situation, of course, the individual would induce self-generated humor specifically regarding the situation eliciting anger.

Retzinger (1985) investigated the hypothesis that engaging in laughter can help to dispel the process of resentment towards an offender. She videotaped female subjects discussing an issue of personal resentment and analyzed the tapes for both verbal and facial indications of anger. In half the videotapes used in the study, subjects expressed what Retzinger called “triumphant laughter” during the course of their interview. Following this laughter, expressions of anger decreased significantly and authentic smiling increased. Retzinger concluded that engaging in an expression of triumphant laughter helped participants dispel their feelings of resentment. While Retzinger consistently referred to the process she was studying as “resentment,” the operational definition of this construct is very similar to the operational definition of rumination used by most major rumination researchers (i.e., continually thinking about a wrong committed against oneself, leading to anger, shame, and thoughts of vengeance; Wade et al., 2008). An important point to consider regarding Retzinger’s study, however, is that she measured humor that was self-induced by the participants. That is, participants were not randomly assigned to groups but rather self-selected into humor and nonhumor conditions. This raises the question as to whether an

intervention involving humor from an outside source might be equally effective. Therefore, the present study explored whether an experimentally induced laughter intervention could produce a similar reduction in rumination regarding an interpersonal transgression.

Some researchers (Baron, 1978; Baron & Ball, 1974; Landy & Mettee, 1969; Prerost, 1987; Prerost, 1995) have already explored reduction of anger responses through use of an experimental laughter or humor intervention. This study expands on this existing literature by exploring it in the context of rumination following an interpersonal transgression. Similar to Baron and Ball (1974) and Landy and Mettee (1969), I used humor from an external source to induce a response potentially incompatible with angry rumination about an event rather than using self-generated humor (e.g., Retzinger, 1985). However, unlike previous studies examining use of humor as a potential mechanism for anger reduction, this study examined the relationship between reduction of angry rumination and subsequent forgiveness for the transgression.

I hypothesized that providing a laughter intervention following participants' engaging in angry rumination regarding an interpersonal transgression would dispel feelings of angry rumination and help facilitate the process of forgiveness. If laughter can disrupt the process of angry rumination individuals experience when considering an interpersonal transgression, it may help to promote alternative processes that foster forgiveness towards the offender.

Participants were asked to reflect upon the most serious betrayal they had experienced as a victim within the context of a close relationship. They were then randomly assigned to one of three experimental conditions: humorous video clips, non-humorous video clips, or time-elapsd control condition. Participants' level of rumination using the scale developed by Wade et al. (2008) was then assessed. Wade et al. designed this scale specifically to

measure a person's rumination regarding a specific transgression, rather than his or her general tendency toward rumination (e.g., Berry et al., 2005). Participants' level of forgiveness towards their offender was measured using McCullough et al.'s (1998) Transgression-Related Interpersonal Measure (TRIM) scale of forgiveness. Additionally, participants completed a simple thought-listing measure to assess positive and negative affect reflected upon by participants. It was expected that the participants in the humor condition would experience lower levels of rumination (as measured by Wade et al.'s, 2008, scale) and higher levels of forgiveness (as measured by McCullough et al.'s, 2008, scale) than participants in either of the two control groups. The thought-listing measure was included simply as a qualitative, exploratory measure without any predictions.

Method

Pilot Study

A pilot study informed the study design with regard to the selection of video clips. Pilot participants ($N = 72$) watched either humorous or non-humorous video clips and rated them on measures of humor and enjoyment. For the humor condition, participants ($n = 36$) watched 19 short video clips drawn from a DVD collection of *America's Funniest Home Videos, Volume 1*. Participants rated each clip on a 5-point Likert scale of humor ("How funny did you find this clip?") and enjoyment ("How much did you enjoy this clip?").

In the non-humor condition, participants ($n = 36$) watched a series of four video clips drawn from YouTube.com featuring nature scenes set to music. Participants again rated each clip on a 5-point Likert scale of humor ("How funny did you find this clip?") and enjoyment ("How much did you enjoy this clip?"). The data analysis revealed that the *America's Funniest Home Videos* clips rated highest on humor. These clips' scores on enjoyment were

then compared to the non-humor clips' ratings of enjoyment. Nature clips were selected with the presumption that they might be equally enjoyable to watch as the humor clips, but not likely to be humorous.

After comparing means of humor and enjoyment for both the laughter and nature clips, five laughter clips and one nature clip were included in the study. I selected multiple laughter clips because many were quite short, and I wanted to try to match the length of the longer nature clip. Each clip was rated on a 5-point Likert scale for humor and enjoyment (1 = *not at all humorous/enjoyable* and 5 = *very humorous/enjoyable*). Laughter Clip 1 (Humor $M = 3.97$, $SD = 0.73$, Enjoyment $M = 3.84$, $SD = 0.99$) runs 0:17 minutes and features an infant falling face-first into a birthday cake. Laughter Clip 2 (Humor $M = 3.86$, $SD = 0.83$, Enjoyment $M = 3.72$, $SD = 0.91$) runs 0:14 minutes and shows a toddler smelling an adult's feet and making an expression of disgust. Laughter Clip 3 (Humor $M = 4.03$, $SD = 1.00$, Enjoyment $M = 4.42$, $SD = 0.81$) runs 1:24 minutes and features a montage of animals falling off surfaces, running into things, or engaging in other amusing antics. Laughter Clip 4 (Humor $M = 4.03$, $SD = 1.03$, Enjoyment $M = 3.97$, $SD = 1.08$) runs 0:17 minutes and shows two little boys sticking sanitary napkins to the wall of their room and calling them "airplane stickers." Finally, Laughter Clip 5 (Humor $M = 4.17$, $SD = 1.06$, Enjoyment $M = 4.14$, $SD = 1.17$) runs 0:31 minutes and features two little children frightened by a stuffed Easter bunny, believing it to be the real Easter bunny. In total, these five clips have a running time of 2:43 minutes.

The nature clip selected (Humor $M = 1.06$, $SD = 0.23$, Enjoyment $M = 3.67$, $SD = 0.99$) runs 2:49 minutes. Therefore, participants in both conditions watched video clips for a very similar time period. Additionally, this nature clip was selected because its mean

enjoyment score ($M = 3.67$) was most equivalent to the mean enjoyment score for the five humor clips ($M = 4.01$). While the difference in enjoyment scores is somewhat greater than I would have preferred, in general, the pilot participants indicated far greater enjoyment of the humor clips than the nature clips, so we simply chose the nature clip with the highest enjoyment score.

Participants

Participants for this study were undergraduate students at a comprehensive southeastern university recruited for the study through class recruitment sessions. Once recruited, participants came into the lab in groups at scheduled session times. Participants were randomly assigned to one of three conditions in this study: the humor condition, the non-humor condition, and the time-elapse condition. In total, 71 students participated in this study. However, four students were eliminated on the basis of not following the given instructions and were subsequently dropped from the data set, leaving 67 participants.

The Institutional Review Board of Appalachian State University approved this study on April 29, 2010 (see Appendix A; for informed consent, see Appendix B). It was approved under expedited review and determined to contain no more than minimal risk to participants. All procedures complied with the American Psychological Association's (2002) ethical standards for the use of human participants.

Materials

Transgression prompt (Appendix C). Participants wrote out a paragraph detailing the most serious transgression they have experienced within the context of a close relationship. This paragraph was loosely based on McCullough et al. (1998) and adapted to fit the needs of this study. Two independent coders assessed whether the transgression

described fit the criteria that (a) the event involved some type of betrayal, and (b) some level of description of the betrayal had been included. The prompt read as follows: *Please think of the most serious transgression or betrayal that you have experienced within a close relationship. In other words, think of a person who you felt treated you unfairly and hurt you at some point in the past. Even if it might be painful, please detail the event as though you are experiencing it now. Try to visualize the person that offended you and recall what happened. What are you doing as the event occurs? What are you feeling as the event occurs? In a paragraph below, provide as much detail as you can about the event. In detailing the event, please do not use the last name of any person.*

When you have finished writing, please place your paragraph in the envelope provided and seal it. Thank you.

Rumination about an Interpersonal Offense (RIO) Scale (Appendix D). Wade et al. (2008) developed this scale specifically to measure rumination about a specific offense, rather than the general tendency to ruminate. The Rumination Scale is a six-item questionnaire with Likert scales ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Items include “I can’t stop thinking about how I was wronged by this person,” “I have a hard time getting thoughts of how I was mistreated out of my head,” and “I find myself replaying the events over and over in my mind.” Scores can range from 6 to 30, with higher scores indicating greater rumination. The scale was found to possess satisfactory internal consistency (above .90) and test-retest reliabilities ($r = .51$, over 10 weeks). Researchers also examined the correlations between the RIO and several other theoretically linked constructs (specifically, Angry Afterthoughts, Thoughts of Revenge, Revenge, Trait Forgivingness, Anger, and Hostility).

Transgression-Related Interpersonal Motivations (TRIM) scale (Appendix E).

The TRIM scale is one of the most frequently used measures of forgiveness (Berry et al., 2005, Hall & Fincham, 2006; Maltby et al., 2008; Tsang et al., 2006). It is a 12-item scale with two subscales measuring the motivations of revenge and avoidance directed toward the offender. Each item is measured on a Likert scale ranging from 1 (*Strongly agree*) to 5 (*Strongly disagree*). Items include “I wish that something bad would happen to him/her,” “I keep as much distance between us as possible,” “I don’t trust him/her,” and “I’ll make him/her pay.” Thus, the lower the score on the TRIM, the higher a person’s level of forgiveness (since high scores reflect high levels of revenge and avoidance motivations). Cronbach’s alpha for these subscales was .86 for the Avoidance subscale and .90 for the Revenge subscale. The TRIM scale has demonstrated desirable psychometric properties in previous empirical tests (McCullough et al., 1998).

Trait Forgivingness Scale (TFS) (Appendix F). The Trait Forgivingness Scale was developed by Berry et al. (2005) to measure an individual’s tendency to be forgiving in general, over a wide array of situations. The TFS contains 10 items relating to trait forgiveness, 5 of which are reverse scored. Examples of items include “If someone treats me badly, I treat him or her the same”; “I can usually forgive and forget an insult”; and “I am a forgiving person.” Responses are collected through a 5-point Likert scale and range from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Cronbach’s alpha for the scale have ranged from .74 to .80 across four studies, and the corrected item-total correlations for all items ranged from .30 to .63 across the same four studies. The Rasch person separation reliabilities ranged from .76 to .81 across the studies, and the Rasch items separation reliabilities were .95, .97,

.96, and .90, indicating that this scale should be a useful instrument for measuring the construct of trait forgiveness.

Humor video clips. The video clips used in this study all come from a DVD collection of *America's Funniest Home Videos, Volume 1*. A pilot study determined which clips received the highest ratings of funniness and enjoyment on a Likert-type scale. Five video clips emerged as highest on humor among the other humorous video clips. These five clips run a total of two minutes and 43 seconds.

Nature clips. The video clip used for the control condition of this study was from the website YouTube.com. It consists of moving images of nature scenes and animals, set to music. There is no dialogue or voice-over. This clip was selected because the pilot study rated it as similar in enjoyment to the humor clips, but without being humorous itself. It is also similar to the humor clips in length of time, running a total of two minutes and 49 seconds.

Experimental manipulation check (Appendix G). Five-point Likert scales were used to assess reactions to the video clips. Participants in both video conditions were asked to indicate from a scale of 1 to 5 how humorous (1 = *Not at all humorous* and 5 = *Extremely humorous*) and enjoyable (1 = *Not at all enjoyable* and 5 = *Extremely enjoyable*) they found the video they watched. They were also asked to rate how much they laughed during the video, from 1 (*Not at all*) to 5 (*A great deal*).

Transgression manipulation check (Appendix H). Three additional items assessed participant compliance with the directions to the transgression prompt. These items mirror the Pennebaker and Beall (1986) study that examined reactions to trauma. The items were assessed on a 7-point Likert scale. The questions are, "How personal was the information in

the paragraph that you wrote today?”, “How serious was the transgression that you wrote about today?” (not one of Pennebaker & Beall’s, 1986), and “How much emotion did the paragraph reveal?”

Demographic information (Appendix I). Participants reported demographic information (gender, age, race, year in school, and current relationship status) to control for potential extraneous variables.

Thought-listing measure (Appendix J). Participants responded to the prompt, “Please list the thoughts that occurred to you while you were recalling the event.” Cacioppo, von Hippel, & Ernst (1997) have suggested that a thought-listing measure may be helpful for tapping into an individual’s thought processes. Because the nature of this study was exploratory, I decided to include this measure in hopes of uncovering additional information regarding the underlying processes of rumination and forgiveness.

Procedure

For this study, participants first wrote a paragraph detailing the most serious/hurtful interpersonal transgression they have experienced (as a victim rather than offender) in the context of a close relationship. As per the method outlined in Strack, Schwarz, and Gschneidinger (1985), participants were asked to provide as many details as possible, to explain the “how” as well as the “why” of the situation, and to describe their feelings at the time of the event. This is the suggested method for eliciting the original feelings surrounding an event. After the participants completed the description of the transgression, they were exposed to one of three randomly assigned manipulations.

In the humor condition, the participants ($n = 26$) watched a series of video clips containing humorous blooper-style situations. Two control conditions were also utilized.

One control group ($n = 20$) watched a non-humorous animal/nature video clip to assess the possibility that changes in the dependent measures that occurred for the experimental group were simply because of distraction or general entertainment, rather than specific to laughter. The second control group ($n = 21$) did not watch a video clip. These participants waited for an amount of time equal to that of the video clips, and then filled out the measures of forgiveness directly after having written the paragraph describing the interpersonal transgression. This control condition was included to ensure that any reduction in rumination was not due simply to the passage of time.

In each of the three conditions, participants completed the RIO (Wade et al., 2008), the TRIM scale of forgiveness (McCullough et al., 1998), the TFS (Berry et al., 2005), and a thought-listing measure. The thought-listing measure was included because the nature of this study is highly exploratory, and this measure might provide valuable information to be pursued in future research.

Original Planned Analyses

A one-way ANOVA with rumination (as measured by the RIO) specified as the DV across levels of humor (humor video, non-humor video, and time elapse control condition) as the IV was performed. Similarly, a one-way ANOVA was performed with episodic forgiveness (as measured by the TRIM) specified as the DV and levels of humor (humor video, non-humor video, and time elapse control condition) as the IV. A main effect for humor condition was predicted such that individuals in the humor condition were predicted to report lower levels of rumination and lower scores on the TRIM than those in the two control conditions.

If a significant effect had emerged for forgiveness, the next step would have been to conduct a mediational regression analysis, based on the criteria set forward by Baron and Kenny (1986). This would have involved a 3-step regression designed to identify the influence a mediator (in this case, rumination as measured by the RIO) has on the relationship between two variables (humor and forgiveness). The prediction was such that, when the relationship between humor and rumination was controlled, and the relationship between rumination and forgiveness was controlled, a previously significant relationship between humor and forgiveness would no longer be significant. However, as the results from the two ANOVAs conducted were both non-significant, this further analysis was unnecessary.

Results

Manipulation check for adherence to transgression prompt

Two independent raters read the participants' transgression descriptions and judged for the degree to which they followed the directions and wrote about a personally meaningful transgression. Four participants were eliminated for the following reasons: one participant described a transgression committed by more than one person; two stated that they had not experienced a major transgression from a close other; and one participant violated anonymity by writing her name on the bottom of the paper. This left 26 participants in the humor condition, 20 participants in the non-humor video condition, and 21 participants in the time elapse condition.

Two independent raters also coded who the transgressor was in each written paragraph— romantic partner, family member, or friend. Results showed that 49.2% of the transgressions related were committed by a romantic partner; 17.5% were committed by a

family member; and 33.3% were committed by a friend. Thus, it appears that the majority of transgressions related involved some sort of betrayal within the context of a romantic relationship.

As a final measure, the amount of time that had passed since the transgression had occurred was analyzed. The mean time since the transgression was 31.21 months ($SD = 33.83$). The least amount of time elapsed since the transgression was .06 months, and the greatest amount of time elapsed was 168 months. There was no significant difference across conditions on the amount of time that had elapsed since the transgression, $F(2, 63) = .588$, $p = .559$.

Manipulation check for humor, laughter, and enjoyment ratings

Participants' responses to the item, *How humorous did you find this video to be?*, were submitted to a one-way ANOVA across the two video conditions. Results demonstrated that participants reported significantly more humor in the humor video condition ($M = 3.77$, $SD = .59$) than the non-humor video condition ($M = 1.80$, $SD = .70$), $F(1, 44) = 108.27$, $p = .001$, $\eta^2_p = .71$. Next, the item, *How much did you laugh during the video?*, was submitted to a similar one-way ANOVA. Results were again found to be significant, with participants in the humor condition ($M = 3.31$, $SD = 1.05$) reporting more laughter than participants in the non-humor video condition ($M = 1.40$, $SD = .60$), $F(1, 44) = 52.72$, $p = .001$, $\eta^2_p = .55$. Finally, ratings of enjoyment across the two video conditions were submitted to a one-way ANOVA as well. No difference in reported enjoyment emerged across the two video conditions, $F(1, 44) = 3.55$, $p = .07$. Thus, it appeared that the manipulation of humor was successful.

Manipulation check for relevance, seriousness, and emotionality of transgression

Responses to the items, *How personal was the information in the paragraph that you wrote today?* and *How serious was the transgression that you wrote about today?*, were submitted to one-way ANOVAs across all three conditions. No differences emerged for either item, $F(2, 64) = .60, p = .55$, and $F(2, 64) = .52, p = .60$, respectively. However, a significant difference emerged when participants' responses to the item, *How much emotion did the paragraph reveal?*, were submitted to a one-way ANOVA across the three conditions, $F(2, 64) = 3.52, p = .04, \eta^2_p = .10$. Those in the time elapse condition reported significantly less emotion ($M = 3.67, SD = 1.11$) than those in the humor condition ($M = 4.74, SD = 1.48$) as indicated by Duncan's post-hoc test. Participants in the non-humor video condition reported equal levels of emotion relative to the other two conditions ($M = 4.30, SD = 1.45$).

Test of main hypotheses

Scores on the RIO were submitted to a one-way ANOVA across all three humor conditions. No significant differences emerged, $F(2, 64) = 1.05, p = .36$. Subsequently, the analysis was conducted with the TFS specified as a covariate. Although RIO scores did not differ as a function of the three humor conditions, $F(2, 63) = 1.44, p = .24$, the TFS was a significant covariate, $F(1, 63) = 5.13, p = .03, \eta^2_p = .08$. In keeping with the planned analyses, an additional ANOVA was conducted with TRIM scores specified as the dependent variable across levels of humor. No significant effects were found, $F(2, 64) = .01, p = .99$. Because neither dependent variable reached significance, testing the originally proposed mediation model was inappropriate.

Additional analyses

Given that the TFS was a significant covariate in the original analyses, a median split was performed in order to include it as a quasi-independent variable in the analyses. Using the median of 36, scores were divided into high versus low trait forgiveness. Then scores on the RIO were submitted to a 2 TFS (high vs. low) x 3 condition (humor, non-humor video, time elapse) ANOVA. No main effects emerged for either condition, $F(2, 61) = 1.21, p = .31$, or trait forgiveness, $F(1, 61) = 1.61, p = .21$. However, a significant interaction was found between trait forgiveness and condition, $F(2, 61) = 6.93, p = .002, \eta^2_p = .19$. As can be seen in Table 1, participants low in trait forgiveness did not report differences in rumination across conditions. However, for those high in trait forgiveness, those who watched either a humorous video or a non-humorous video reported less rumination than those in the time-elapsed group.

Recall that participants listed the thoughts that occurred to them as they recalled the transgression. Two independent raters coded the number of total thoughts listed, as well as the number of positive versus negative thoughts listed. Inter-rater reliability was calculated by computing separate Pearson's product moment correlations for all three measures (total number of thoughts, positive thoughts, and negative thoughts), with all $r_s (67) > .72, p_s = .0001$. Because reliabilities were adequate, both raters' scores were averaged to create a composite measure for each. Then the proportion of positive thoughts was calculated by dividing the number of positive thoughts by the total number of thoughts. A proportion of negative thoughts was similarly calculated by dividing the number of negative thoughts by the total number of thoughts.

These proportions were then submitted to separate one-way ANOVAs. While there was no significant difference across humor conditions for proportion of positive thoughts, $F(2, 63) = 2.24, p = .12$, a significant difference did emerge for the proportion of negative thoughts across condition, $F(2, 63) = 5.22, p = .008, \eta^2_p = .14$. Post-hoc Duncan's test showed that those in the time-elapse condition reported proportionately fewer negative thoughts ($M = .50, SD = .34$) than those in either the humor condition ($M = .77, SD = .26$) or the non-humor video condition ($M = .69, SD = .29$). However, those in the latter conditions did not differ from one another.

As a final analysis, inter-correlations were examined between all of the dependent measures (RIO, TRIM [total and subscales], TFS, the proportion of positive and negative thoughts). Several interesting relationships emerged from this analysis. As Table 2 shows, scores on the RIO were significantly correlated with the Revenge subscale of the TRIM (called TRIM.R on Table 2), and with the total score on the TRIM (called TRIM.T on Table 2), but were not significantly correlated with the Avoidance subscale of the TRIM (called TRIM.A on Table 2). Additionally, scores on the TFS significantly and negatively correlated with the TRIM.R and TRIM.T, but not TRIM.A. TFS also significantly, negatively correlated with scores on the RIO.

Discussion

The present study attempted to explore the possibility of using humor to reduce angry rumination in individuals who had experienced an interpersonal transgression in the context of a close relationship. The data evidenced that exposing participants to a set of humorous video clips did not significantly influence their reported level of rumination, nor did it have an impact upon forgiveness towards transgressors. While previous literature has suggested

that humor and anger may be incompatible responses (a theory espoused by Baron, 1976, and Prerost, 1995), perhaps the process of angry *rumination* is somehow separate from other types of anger, and thus not as easily influenced by humor. Alternatively, some researchers (Berry et al., 2005) suggest that the construct of rumination is best studied by dividing it into sub-constructs, such as vengeful rumination, angry rumination, depressive rumination, etc. These various forms of rumination could interact in different ways with forgiveness and/or humor. Perhaps this study failed to find the expected outcomes because participants were engaging in multiple or various subtypes of rumination. Recall that participants wrote about the most serious transgression or betrayal that they had experienced within a close relationship. Because participants were not instructed to describe a particular type of transgression, the variability in content of what they reported was broad. Some wrote about being cheated on by a romantic partner or being mistreated by a platonic friend or family member, while others wrote about physical assault. It seems reasonable to argue that such diversity in experiences would have produced varying forms of rumination.

There were also no significant differences across conditions on forgiveness (as measured by the TRIM). In other words, participants who watched the humorous video did not report significantly more forgiveness of their transgressors than did participants who watched the non-humorous video or who waited for a similar time. However, this result is not surprising, given that the results on the rumination measure were also nonsignificant. As the literature seems to indicate a strong negative and bidirectional relationship between forgiveness and rumination (Kachadourian et al., 2004; McCullough et al., 2007; Worthington & Wade, 1999), if rumination did not vary by conditions it makes sense that forgiveness would not either.

While the main hypotheses were not supported, several interesting results emerged from this study nonetheless. For one, it is worth noting that participants' level of trait forgiveness did relate to rumination, such that trait forgiveness significantly, negatively correlated with rumination regarding the transgression. Given the strong negative relationship in the literature between forgiveness and rumination, we would expect to see that participants high in trait forgiveness would receive low scores on a measure of rumination, which the data supported. Berry et al. (2005) also found trait forgiveness and trait anger to be negatively correlated, and in this study, trait forgiveness negatively correlated with both rumination and revenge motivations (both potential proxies for anger). However, my study did not explicitly measure levels of anger (as separate from rumination or revenge motivations) as Berry et al. did.

The analysis of trait forgiveness produced another interesting finding. Levels of rumination did not vary as a function of what participants had watched for those low in trait forgiveness, but individuals *high* in trait forgiveness reported less rumination in the video groups than the control group. It is possible that individuals high in trait forgiveness are similar in some other way as well that influences these results. For example, a substantial number of previous studies have examined the relationship between trait forgiveness and personality factors. Many of these studies have identified Agreeableness and Neuroticism as the Big Five personality factors most strongly correlated with trait forgiveness (Brose, Rye, Lutz-Zois, & Ross, 2005; Maltby et al., 2008; Symington, Walker, & Gorsuch, 2002; Walker & Gorsuch, 2002; Wang, 2008). Because I did not measure participants' personality factors, we cannot rule out the possibility that some extraneous personality variable is responsible for these results.

A more speculative explanation for this is that perhaps individuals high in trait forgiveness are more susceptible to *any* type of distraction from their rumination. In other words, given an opportunity to let go of the negative thoughts related to a transgression by becoming cognitively engaged in something else (in this case, a humorous or nonhumorous video), they may do so, and will have an easier time moving out of rumination and into forgiveness towards the offender relative to those low in trait forgiveness. One study (Thompson et al., 2005) found that trait forgiveness, as measured by the Heartland Forgiveness Scale, was positively correlated with distraction in a sample of 504 undergraduates, indicating that people higher in trait forgiveness were more likely to use distraction as a means of reducing their negative affect.

However, for those participants lower in trait forgiveness, a similar divide between the distraction conditions and the time elapse condition was not found. This seems to indicate that people who do not have a high tendency to forgive are less easily distracted than those high in trait forgiveness. They may watch the same video clips and be similarly entertained, and even find them similarly humorous, but once the clip has ended, they begin to ruminate again about the event. Thus, use of video clips may not be potent enough to break the cycle of rumination. Interestingly, no differences in levels of rumination were found between the humorous video and the nonhumorous video for those high in trait forgiveness. The fact that both videos were judged equally enjoyable, however, may suggest that for individuals high in trait forgiveness watching something entertaining is sufficient to create distraction.

Distraction has been well documented in previous literature as successfully reducing anger or rumination in participants (Bushman, 2002; Gerin, Davidson, Christenfeld, Goyal,

& Schwartz, 2006; Neumann, Waldstein, Sellers, Thayer, & Sorkin, 2004; Wilde, 2001). Therefore, it is possible that the current study simply replicated the finding that distraction can reduce rumination, but only found it to be true for individuals who possessed high trait forgiveness. These previous studies have not investigated an individual's level of trait forgiveness as a possible covariate in distraction's effect on rumination, however.

Previous research has utilized thought-listing measures as a means of tapping into an individual's running stream of thoughts. The technique is frequently used with individuals experiencing depression or anxiety, but has been used within such diverse contexts as hostile mood states, social phobia, snake phobia, test anxiety, social anxiety, romantic relationships, group therapy, fraudulence, career barriers, and assertiveness training (Cacioppo et al., 1997). Cacioppo et al. state that this procedure may help explain: "(a) the way in which a person views the world; (b) his or her coping processes in response to different challenges, threats, and circumstances; and (c) the motives and cognitive structures from which these coping processes originate" (Cacioppo et al., 1997, p. 928).

In the current study, those who watched either of the two videos listed proportionately more negative thoughts than those who simply had time elapse. This was an unexpected finding, but recall that when asked, *How much emotion did this paragraph reveal?* participants in the time-elapse condition reported significantly less emotion than did participants in the humor video or nonhumor video condition. Thus, it is possible that because the time-elapse group had less emotion elicited by the paragraph, they also had fewer negative thoughts that occurred to them while recalling the transgression.

However, the finding that the time-elapsed group reported less emotion in their paragraphs was in itself unexpected. The transgression prompt was the same for all groups,

and one would assume that random assignment would ensure that across conditions participants would have written about equally emotional events. One possible explanation for the seeming lack of emotion from the time-elapse group is that the manipulation check items for personal relevance, seriousness, and emotionality of reported transgression were asked at the *end* of the study. It is possible that those in the video conditions misread some of the emotion evoked by the content of the video watched as related to the paragraph they had written. Those in the time-elapse control condition would have had no additional emotional stimulus by which to respond. In retrospect, this may have been a flaw in the research design, as participants had already been exposed to the study's manipulation by the time they answered the questions regarding personal relevance, seriousness, and emotionality.

Interestingly, participants' proportion of negative thoughts did *not* significantly positively correlate to their scores on the rumination measure. This seems counter-intuitive, as one would suppose that the more a person ruminates about an interpersonal offense, the more negative thoughts that would occur to him or her, and therefore, the more negative thoughts he or she would have recorded for the thought-listing measure. This, in fact, seems to be the very definition of rumination – that the person is dwelling on a greater number of negative thoughts. Since no correlation between proportion of negative thoughts and rumination was found, however, it almost causes one to question the validity of the thought-listing measure in general – or perhaps simply its utility in accurately reflecting rumination.

Across dependent measures, some interesting correlations emerged. Rumination positively correlated with revenge motivations, but did *not* significantly correlate with avoidance motivations, and significantly correlated with total transgression-related

interpersonal motivations. In partial support of these findings, Berry et al. (2005) found trait forgiveness to negatively correlate with both vengeful rumination and hostility. While somewhat theoretically different in nature, each of these constructs seems intuitively related to the construct of revenge motivations. Moreover, while they did find that the disposition to ruminate vengefully mediated the relationship between trait forgiveness and revenge motivations, it did not similarly mediate the relationship between trait forgiveness and avoidance motivations. These results suggest that McCullough et al.'s (1998) TRIM subscales of revenge and avoidance may be somewhat conceptually different, at least in how they relate to rumination. Indeed, these results evidenced that rumination was correlated with revenge but not correlated with avoidance. This seems logical given that revenge and anger towards a transgressor would covary with each other.

Furthermore, those with a greater desire to avoid ruminative thoughts would likely not want to dwell on the events surrounding the transgression, resulting in little relationship between this motivation and rumination. If people actively avoid thinking of the person who has hurt them, of course rumination would not occur. Deffenbacher (1995) discussed how avoidance is a strategy frequently used by individuals coping with angry rumination. He even goes further to suggest that perhaps an incompatible response, such as silly humor, might be even more effective. While exposure to silly humor did not affect angry rumination in this study, there were a few differences between Deffenbacher's work and this study. For one, Deffenbacher was working with a primarily clinical population, while this study employed a non-clinical population of university undergraduates. Additionally, Deffenbacher suggested a strategy of self-generated humor, while in this study, humor was from an external source – the humorous videos. After experiencing anger, a person who can

spontaneously produce humor regarding the incident may be revealing “perspective” on the event, a circumstance that demonstrates movement toward acceptance. Humor coming from an external source certainly would seem to have less impact on exacting a reduction in negative thought. Future research might consider having individuals generate their own humorous thoughts after reflecting on a transgression to better evaluate this distinction between humor types. Recall that Retzinger (1985) had found that women who discussed an issue of personal resentment showed decreased levels of anger and resentment when they expressed what she termed “triumphant laughter” in the course of a videotaped interview. The humor in this study was also self-generated, possibly lending credence to the hypothesis that self-generated humor may have more of an effect than externally induced humor on resolving resentment towards a transgressor. This type of humor may be most beneficial in the healing and subsequent forgiveness process of important transgressions that an individual must transcend.

Additionally, I found that trait forgiveness significantly and *negatively* correlated with rumination, revenge motivations, and total transgression-related interpersonal motivations. These findings also confirm expectations. Given the strong negative and bidirectional relationship between forgiveness and rumination in the literature (Kachadourian et al., 2004; McCullough et al., 2007; Worthington & Wade, 1999), it makes sense that an individual high in trait forgiveness would not spend much time engaging in rumination. Likewise, possessing high trait forgiveness would intuitively predict low scores in revenge motivations, as a high forgiver is unlikely to pursue frequent thoughts of revenge.

Of course, a critical question to be answered is why the humor manipulation was not successful in reducing rumination, and subsequently increasing forgiveness, despite the fact

that those in this condition laughed more than those in the other conditions. One possibility is that research that has found a link between humor and reductions in anger have examined transgressions of less personal importance to the participant. For example, Landee and Mettee (1969), as well as Baron and Ball (1974), examined the influence of humor in increasing liking and reducing anger towards a person (experimenter or confederate) who had angered a participant in the lab. It may be that a simple humor manipulation is effective in reducing angry rumination when the event itself is not particularly personal and does not have long-term consequences. The participants in this study, by contrast, called to mind an event of great personal consequence, involving a relationship of great importance. In light of that, it may not be surprising that this humor manipulation was not powerful enough to offset such a transgression.

While several interesting findings emerged from the current study, it did possess several methodological limitations. All of the data were collected during a university's summer term, and all participants were undergraduate students from psychology courses. Further, the racial diversity of the sample was severely limited, and the gender distribution was unequal as well— the sample consisted primarily of Caucasian females. Additionally, several data collection sessions resulted in varied levels of attendance. Thus, there were some data collection sessions with just a few participants present, and there were others with much larger numbers of participants present. This could possibly have given rise to some rather large effects of social influence. For example, a participant watching humorous video clips with just a few other people might respond in a dramatically different fashion than a participant watching those clips in a large group of people. Laughter, in particular, can be greatly influenced by the presence of social cues such as other audience members laughing.

Devereux and Ginsburg (2001), for example, found that participants were significantly more likely to laugh at humorous video clips when they were watching the videos with even one more person. While it is not possible to know the exact influence this collection environment may have had on the data, it is still a factor worth considering. Finally, the small sample size of 67 participants may have reduced the generalizability of the findings

Despite these limitations, the current study examines an important concept– the reduction of anger and rumination towards a transgressor. An understanding of the process of rumination that results from interpersonal betrayals has important implications for interpersonal relationships. Given the prevalence of aggressive behaviors that result from vengeful thoughts and anger, uncovering processes that can reduce such negative emotional and cognitive responses would be very beneficial in clinical and nonclinical settings. While the stated hypotheses did not reach significance, the finding that high forgivers did experience a significant decrease in rumination in the two video conditions adds an interesting element to the body of literature on forgiveness. Although humor, by itself, did not produce the expected findings, it does appear that watching something that is enjoyable may have the capacity to distract some people from ruminative thought. This is promising since the actual manipulation was brief, and easily replicated in real world settings. Given the considerable clinical applicability of interventions facilitating forgiveness, any progress towards such interventions is a positive step. Further, the finding that individuals high in trait forgiveness may respond differently to such interventions can help inform the development of clinical treatments for individuals struggling with forgiveness. Considering how many people have cause to engage in forgiveness throughout the course of a lifetime, such treatments could help improve quality of life for a significant number of clinical clients.

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Appendix A

Appalachian State University's Institutional Review Board Permission

**To: Julia Fondren
Psychology
CAMPUS MAIL**

From: Dr. Timothy Ludwig, Institutional Review Board

Date: 4/28/2010

RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

Study #: 10-0216

**Study Title: The Effects of a Laughter Intervention on Rumination Regarding an
Interpersonal Transgression in Romantic Relationships_____**

Submission Type: Initial

**Expedited Category: (7) Research on Group Characteristics or Behavior, or Surveys,
Interviews, etc.**

Approval Date: 4/28/2010

Expiration Date of Approval: 4/27/2011

This submission has been approved by the Institutional Review Board for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Investigator's Responsibilities:

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects occur it must be reported immediately to the IRB.

CC:

Doris Bazzini, Psychology

Appendix B

APPALACHIAN STATE UNIVERSITY

Informed Consent for Participants in Research Projects Involving Human Subjects
Title of Project: Thoughts surrounding an Interpersonal Transgression

Investigator(s): Julia Fondren and Doris Bazzini, Ph.D.

I. Purpose of this Research/Project

To assess how people recollect a betrayal involving a close relationship and to measure emotions surrounding the event.

II. Procedures

The study will last approximately 60 minutes. You will be asked to write a paragraph according to instructions from the research assistant, and answer some follow-up questions.

III. Risk

Participation in this study may elicit uncomfortable or negative feelings surrounding a previous interpersonal transgression. However, if you feel uncomfortable at any time in the study, you may withdraw from the study at no cost to yourself and have the record of participation destroyed. You can also contact the campus counseling and psychological services center at 262-3180.

IV. Benefits

There are no direct benefits to you for participating. However, we hope that this study may offer tremendous potential benefit to people struggling with overcoming interpersonal betrayals or transgressions. Results of this study will hopefully have implications for helping to improve the quality of life and mental well-being for individuals struggling with resolution.

V. Extent of Anonymity and Confidentiality

There will not be anything containing any identifying information of your participation in the study, specifically no names will be recorded, and therefore participation is anonymous and confidential.

VI. Compensation

You will receive 60 minutes of research participation credit.

VII. Freedom to Withdraw

You are free to withdraw from this study at any point without penalty. However, if you choose to withdraw from the study prior to its completion, you will not receive a research credit slip.

VIII. Approval of Research

This research project has been approved, as required, by the Institutional Review Board of Appalachian State University.

April 29, 2010
IRB Approval Date

April 29, 2011
Approval Expiration Date

IX. Participant's Responsibilities

I voluntarily agree to participate in this study. I have the following responsibilities:

- Read the stimulus paragraph and answer questions seriously and honestly to the best of my ability
- Refrain from discussing this study (and my participation in it) until after the study has been completed

X. Participant's Permission

I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent to participate in this study. I also certify that I am at least 18 years of age.

Should I have any questions about this research or its conduct, I may contact:

Julia Fondren (910)612-8340 / jf66148@appstate.edu
Investigator(s) Telephone/e-mail

Doris Bazzini, Ph.D. (828) 262-2733 / bazzinidg@appstate.edu
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Appendix C

Prompt for written transgression paragraph

Please think of the most serious transgression or betrayal that you have experienced within a close relationship. In other words, think of a person who you felt treated you unfairly and hurt you at some point in the past. Even if it might be painful, please detail the event as though you are experiencing it now. Try to visualize the person that offended you and recall what happened. What are you doing as the event occurs? What are you feeling as the event occurs? In a paragraph below, provide as much detail as you can about the event. In detailing the event, please do not use the last name of any person.

When you have finished writing, please place your paragraph in the envelope provided and seal it. Thank you.

When did this event happen? _____ Months ago

Appendix D

Wade, Vogel, Liao, & Goldman's (2008)

Rumination about an Interpersonal Offense scale (RIO):

Participants complete the measure with a 5-point Likert scale indicating their degree of agreement or disagreement with each of the items (from 1, strongly disagree to 5, strongly agree). The instructions state, "The following items describe reactions people can have to being hurt by others. Think back over your experience and indicate your agreement or disagreement with the following statements."

1. I can't stop thinking about how I was wronged by this person.
1 2 3 4 5
2. Memories about this person's wrongful actions have limited my enjoyment of life.
1 2 3 4 5
3. I have a hard time getting thoughts of how I was mistreated out of my head.
1 2 3 4 5
4. I try to figure out the reasons why this person hurt me.
1 2 3 4 5
5. The wrong I suffered is never far from my mind.
1 2 3 4 5
6. I find myself replaying the events over and over in my mind.
1 2 3 4 5

Appendix E

McCullough, Rachal, Sandage, Worthington, Brown, & Hight's (1998)

Transgression-Related Interpersonal Motivations (TRIM) scale of forgiveness:

Appendix

Transgression-Related Interpersonal Motivations Inventory

For the questions on this page, please indicate your current thoughts and feelings about the person who recently hurt you. Use the following scale to indicate your agreement with each of the questions.

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly agree

- | | | | |
|----------|--|-----------|---|
| 1. _____ | I'll make him/her pay. (R) | 7. _____ | I live as if he/she doesn't exist, isn't around. (A) |
| 2. _____ | I wish that something bad would happen to him/her. (R) | 8. _____ | I don't trust him/her. (A) |
| 3. _____ | I want him/her to get what he/she deserves. (R) | 9. _____ | I find it difficult to act warmly toward him/her. (A) |
| 4. _____ | I'm going to get even. (R) | 10. _____ | I avoid him/her. (A) |
| 5. _____ | I want to see him/her hurt and miserable. (R) | 11. _____ | I cut off the relationship with him/her. (A) |
| 6. _____ | I keep as much distance between us as possible. (A) | 12. _____ | I withdraw from him/her. (A) |

Note. Items on the Avoidance and Revenge subscales are denoted with (A) and (R), respectively.

Appendix F

Berry, Worthington, O'Connor, Parrott, & Wade's (2005)

Trait Forgivingness Scale

Directions: Indicate the degree to which you agree or disagree with each statement below by using the following scale:

1=strongly disagree

2=mildly disagree

3=agree and disagree equally

4=mildly agree

5=strongly agree

- _____ 1. People close to me probably think I hold a grudge too long.
- _____ 2. I can forgive a friend for almost anything.
- _____ 3. If someone treats me badly, I treat him or her the same.
- _____ 4. I try to forgive others even when they don't feel guilty for what they did.
- _____ 5. I can usually forgive and forget an insult.
- _____ 6. I feel bitter about many of my relationships.
- _____ 7. Even after I forgive someone, things often come back to me that I resent.
- _____ 8. There are some things for which I could never forgive even a loved one.
- _____ 9. I have always forgiven those who have hurt me.
- _____ 10. I am a forgiving person.

Scoring

To score the TFS such that higher scores reflect higher trait forgivingness, first reverse score items 1, 3, 6, 7, and 8. After items are reverse scored, add the 10 items to get the total score.

Appendix G

Experimental Manipulation Check Items following both video conditions:

How humorous did you find this video to be?

Not at all humorous					Extremely humorous
1	2	3	4	5	

How much did you laugh during the video?

Not at all					A great deal
1	2	3	4	5	

How enjoyable was the video?

Not at all enjoyable					Extremely enjoyable
1	2	3	4	5	

Appendix I

Demographic Information

Gender: _____

Race: _____

Age: _____

Year in school: _____

Are you currently involved in a romantic relationship? _____ Yes _____ No

Appendix J

Thought-listing Measure

Please list the thoughts that occurred to you while you were recalling the event.

Table 1

Means and Standard Deviations for Rumination Across Levels of TFS and Condition

	Condition		
	Video Conditions		
	Humor	Non-humor	Time elapse
Levels of TFS	<i>(M, SD)</i>	<i>(M, SD)</i>	<i>(M, SD)</i>
Low TFS	17.31 _a , 7.43	16.69 _a , 4.71	13.90 _a , 5.32
High TFS	10.85 _b , 3.85	12.57 _b , 5.16	19.18 _c , 6.00

Note. Means that share a subscript are not significantly different at a .05 significance level by Duncan's post-hoc test within rows; TFS = Trait Forgiveness Scale

Table 2

*Inter-item Correlations for RIO, TRIM.R, TRIM.A, TRIM.T, TFS, Proportion of Positive**Thoughts, and Proportion of Negative Thoughts*

		RIO	TRIM.R	TRIM.A	TRIM.T	TFS	PosProp	NegProp
RIO	Pearson Correlation	1	--	--	--	--	--	--
	Sig. (2-tailed)							
TRIM.R	Pearson Correlation	.357**	1	--	--	--	--	--
	Sig. (2-tailed)	.003						
TRIM.A	Pearson Correlation	.169	.515**	1	--	--	--	--
	Sig. (2-tailed)	.171	.000					
TRIM.T	Pearson Correlation	.247*	.733**	.960**	1	--	--	--
	Sig. (2-tailed)	.044	.000	.000				
TFS	Pearson Correlation	-.252*	-.423**	-.201	-.291*	1	--	--
	Sig. (2-tailed)	.040	.000	.104	.017			
PosProp	Pearson Correlation	.024	-.041	-.018	-.025	.163	1	--
	Sig. (2-tailed)	.847	.741	.887	.843	.191		
NegProp	Pearson Correlation	.092	-.035	.001	-.011	-.137	-.777**	1
	Sig. (2-tailed)	.465	.781	.994	.930	.272	.000	

Note. RIO = scores on Rumination about an Interpersonal Offense scale, TRIM.R = scores on revenge subscale of Transgression-Related Interpersonal Motivations scale, TRIM.A = scores on avoidance subscale of Transgression-Related Interpersonal Motivations scale, TRIM.T = total combined scores on Transgression-Related Interpersonal Motivations scale, TFS = Trait Forgiveness Scale, PosProp = proportion of positive thoughts reported, NegProp = proportion of negative thoughts reported.

* $p < 0.05$

** $p < 0.01$

Vita

Julia Fondren is originally from Washington State, but moved to North Carolina at a young age. After growing up at the beach, she decided to brave the snow and ice at Appalachian State University for her undergraduate career. While she had decided after her first psychology class at age 15 that psychology was the career path for her, the amazing faculty and department at Appalachian helped to solidify this choice. After graduating summa cum laude with honors in psychology from ASU in 2008, she decided to continue for two more years in Appalachian's Masters of Arts program in General Experimental Psychology. While at ASU, Julia was active in the Graduate Student Association Senate, the Psychology Graduate Student Organization, and several theater/advocacy and fundraising projects. She also taught two semesters of an introductory psychology class and had the opportunity to present posters at the Society for Southeastern Social Psychologists in Fort Myers, FL; the Society for Personality and Social Psychology in Las Vegas, NV; and the Lilly Conference on College and University Teaching in Greensboro, NC.

Julia always planned to pursue a career path in Clinical Psychology, but the experimental program was instrumental in giving her a strong research foundation. After graduating from ASU, Julia was accepted into her top choice doctoral program, East Carolina University's program in Clinical Health Psychology. She is currently pursuing that degree while conducting research relating to women's health issues, particularly sexual assault and revictimization. Ultimately, she hopes to divide her time between a clinical practice and part-time teaching in a university's psychology department.