

# Self-Compassion Promotes Personal Improvement From Regret Experiences via Acceptance

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## Abstract

Why do some people report more personal improvement from their regret experiences than others? Three studies examined whether self-compassion promotes personal improvement derived from recalled regret experiences. In Study 1, we coded anonymous regret descriptions posted on a blog website. People who spontaneously described their regret with greater self-compassion were also judged as having expressed more personal improvement. In Study 2, higher trait self-compassion predicted greater self-reported and observer-rated personal improvement derived from recalled regret experiences. In Study 3, people induced to take a self-compassionate perspective toward a recalled regret experience reported greater acceptance, forgiveness, and personal improvement. A multiple mediation analysis comparing acceptance and forgiveness showed self-compassion led to greater personal improvement, in part, through heightened acceptance. Furthermore, self-compassion's effects on personal improvement were distinct from self-esteem and were not explained by adaptive emotional responses. Overall, the results suggest that self-compassion spurs positive adjustment in the face of regrets.

## Keywords

self-compassion, self-esteem, regret, acceptance, forgiveness, personal improvement

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“When we are no longer able to change a situation, we are challenged to change ourselves.”

—Victor Frankl

“I think I need to face what I could have been in order to understand and accept what I am.”

—Rosie in Cecilia Ahern's *Where Rainbows End*

Regrets are common, as documented in narratives of the dying (Ware, 2012), as well as in surveys of typical Americans (Morrison & Roese, 2011) and people from all walks of life (Roese & Summerville, 2005). An array of research suggests that regrets can serve as a catalyst for personal improvement. For example, Roese and Summerville (2005) have shown that regrets spur personal improvement particularly when people perceive opportunities to change. In this same vein, people tend to endorse more sense-making (e.g., “Helps me make sense of past events”), approach motivations (e.g., “Helps me know how to act in the future”), avoidance motivations (e.g., “Stops me from making the same mistakes again”), and insights (e.g., “Helps me gain insight to my own attributes”) in relation to their regrets, as opposed to other negative experiences (e.g., sadness; Saffrey, Summerville, &

Roese, 2008). Regret has also been shown to predict greater future intention to practice safe sex among a group of HIV positive men (Epstude & Jonas, 2014). Women's regret about choosing traditionally female professions in early middle age motivates goal-setting for desired life changes in late middle age (Stewart & Vandewater, 1999). Still other work on narratives of lost possible selves (e.g., a representation of people's “if only . . .” self), which are related to regret, has shown that the ability to find silver linings in regret experiences is a sign of maturation and plays an important role in personality development (King & Hicks, 2007). For example, gay men who wrote narratives about their best straight possible as if they were not gay with more elaboration (e.g., showed greater richness in their narratives) reported greater ego development 2 years later (King & Smith, 2004). Similarly, divorced women who wrote about their best possible self as if they had not divorced with more elaboration showed greater ego development over time (King & Raspin, 2004).

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Together, these studies suggest a clear link between regret and personal improvement. The literature, however, has not yet examined the factors that drive some people to derive more personal improvement from their regret experiences than others. Identifying such factors is important, as it could shed light on how to facilitate learning and growth in response to regret experiences. According to Updegraff and Taylor (2000), whether and in what ways people find benefits from difficult life events, such as regrettable experiences, hinge on their coping strategies. One strategy thought to promote positive adjustment is active coping, which refers to approaches that involve confronting difficult life events with a problem-focused mindset (Carver, Scheier, & Weintraub, 1989; Scheier & Carver, 1985). For instance, female breast cancer survivors who were higher in active coping also scored higher on dimensions associated with growth following trauma or adversity—specifically, perception of new possibilities and appreciation for life due to one's struggle (Bellizzi & Blank, 2006). People who were more likely to reframe the 9/11 terrorist attack in a positive light 2 weeks after the event reported that they found more meaning from the incident 2 months later (Updegraff, Silver, & Holman, 2008). In short, these findings suggest that engaging in different types of active coping to deal with difficult life events can contribute to personal improvement.

Building on this line of work, we propose that some people may experience greater personal improvement from their regret experiences than others because they use self-compassion (Neff, 2011). Self-compassion is rooted in sympathy extended toward the self when an individual is faced with a mistake or failure. According to Neff (2011), self-compassion has three interrelated components: (a) self-kindness, a tendency to apply a caring and tender, rather than judgmental, attitude toward one's personal failures; (b) common humanity, the recognition that it is only "human" to make mistakes and that one's suffering is shared by others; and (c) mindfulness, or facing one's failure and observing one's pain with equanimity.

Prior research shows that self-compassion propels people to confront difficult life experiences head-on. For instance, self-compassionate people report less experiential avoidance (Costa & Pinto-Gouveia, 2013) and more emotional processing (e.g., "I delve into my feelings to get a thorough understanding of them"; Neff, 2003). This indicates self-compassion may be a specific active strategy for coping with one's failures and shortcomings. Consequently, we hypothesized that people who are dispositionally high in self-compassion, or who are induced to show greater compassion toward themselves about their regret experiences, should report greater personal improvement from their regrets. As a secondary aim, we explored several plausible mechanisms for the hypothesized link between self-compassion and personal improvement in the face of regrets, with a focus on acceptance and forgiveness. Across studies, we compared the effects of self-compassion with those of self-esteem, defined as a personal sense of worthiness

(Rosenberg, 1965), because the two constructs are highly positively correlated (Neff, 2011).

## Self-Compassion Enhances Personal Improvement

One of the frequent criticisms of self-compassion is that it could lead to complacency or self-indulgence. Thus, people typically do not associate self-compassion with efforts to become better. However, the extant literature argues otherwise and suggests a link between self-compassion and personal improvement. For instance, self-compassionate college students reported greater intrinsic motivation to learn (e.g., "I will participate actively in my courses because I feel like it's a good way to improve my understanding of the material") because of enhanced mastery goals (e.g., "I like school work that I'll learn from, even if I make a lot of mistakes"; Neff, Hsieh, & Dejitterat, 2005). Self-compassionate women who tested positive for HIV were less likely to indicate that shame (e.g., "hiding infection from others") prevented them from asking their partner to use a condom (Brion, Leary, & Drabkin, 2014). Self-compassionate people reported exerting greater effort following doctors' recommendations for their health problems, and this was explained by self-kindness thoughts (e.g., "I think I should do something nice for myself") and proactive health focus (e.g., "If I notice something about my health that I don't like, I work to fix it"; Terry, Leary, Mehta, & Henderson, 2013). In the romantic relationship domain, self-compassion predicted a greater desire to correct interpersonal mistakes and problem-solving behaviors among women and highly conscientious men (Baker & McNulty, 2011). Self-compassionate older adults with walking difficulty were more willing to use a walker compared with less self-compassionate counterparts (Allen, Goldwasser, & Leary, 2012).

More relevant research has shown that people who were induced to feel self-compassion, compared with self-esteem, were more likely to report that their personal shortcomings can be changed (Breines & Chen, 2012). In another study, these same researchers showed that people who were induced to feel self-compassion, compared with self-esteem, in reference to a past transgression expressed greater willingness to make amends and to avoid the same transgression in the future. Such findings bolster our hypothesis that self-compassion should promote personal improvement derived from regret experiences.

## Acceptance and Forgiveness as Potential Mediators of the Link Between Self-Compassion and Personal Improvement

Can acceptance and forgiveness help explain the hypothesized link between self-compassion and personal improvement derived from regret experiences? We propose acceptance

and forgiveness as potential mediators because they are central to theorizing on self-compassion, and both have been shown to predict personal improvement. Acceptance involves the ability to acknowledge that a negative event—such as a regret experience—has occurred and embrace it as a part of oneself (Neff, 2003). It is important to note that acceptance is distinct from disengagement or completely avoiding a negative experience. For instance, research has shown that self-compassionate students who were highly dissatisfied with a recent test reported not only greater acceptance and lower denial (i.e., “an attempt to reject the reality of the stressful event”), but also lower behavioral disengagement (i.e., “psychological disengagement from the event through daydreaming, sleep, or self-distraction”) and lower mental disengagement (i.e., “giving up on the attempt to attain one’s goals”; Neff et al., 2005). In other work, participants who were led to experience self-compassion, compared with self-esteem and neutral, about a personal negative event were more willing to admit personal responsibility for the event (Leary, Tate, Adams, Batts Allen, & Hancock, 2007). Thus, acceptance promotes the willingness to make amends (such as not allowing it to occur again) and improvement, and this may be in part because it allows people to confront the issues and admit responsibility. This is similar to King and Hicks’s (2007) concept of elaboration, which refers to being able to acknowledge mistakes while not dwelling on them. King and Hicks argue that people who are able to elaborate on their mistakes tend to show greater ego development and report growth from their mistakes.

Empirically, trait self-compassion has been shown to be positively correlated with the acceptance subscale of the COPE inventory (Carver et al., 1989), which assesses people’s tendency to accept that a stressful situation has occurred (Neff et al., 2005). Other work has shown that self-compassion among patients with chronic pain predicted higher acceptance of their medical condition (Costa & Pinto-Gouveia, 2011). Importantly, if acceptance is to function as a mediator, as we hypothesize, it must be related to personal improvement. Research supports this connection as well. For example, acceptance has been shown to be integral to finding positive learning opportunities among parents with autistic children (Altiere & von Kluge, 2009). In a meta-analysis including over a thousand people who have dealt with traumatic life events, acceptance was shown to be positively correlated with finding benefits (i.e., “The positive effects that result from a traumatic event”;  $r = .20$ ; Helgeson, Reynolds, & Tomich, 2006).

In the context of self-compassion, forgiveness stems from situating one’s shortcomings or failures—such as a regret experience—as a part of the common human experience (Neff, 2003). Research supports a connection between self-compassion and forgiveness. For instance, trait self-compassion is associated with greater forgiveness (i.e., Heartland Forgiveness Scale; Thompson, Snyder, & Hoffman, 2005) among undergraduate students, community adults, and long-time meditators ( $r$ s  $\geq$

.28; Neff & Pommier, 2013). Also, highly self-compassionate people report greater forgiveness toward those who let them down, regardless of whether or not they received an apology (Allen, Barton, & Stevenson, 2015).

Forgiveness, in turn, has been associated with personal improvement. For instance, trait forgiveness has been associated with a tendency to perceive positive improvement from traumatic life experiences in a sample of Indonesian adults (Chang & Lin, 2012), and personal growth in a nationally representative sample of Swiss adults (Hill, Allemann, & Burrow, 2010). Also, receiving forgiveness has been shown to motivate corrective intentions (McCullough, 2000). For example, people who recall a forgiven transgression, compared with unforgiven transgression, reported more repentance motivation (e.g., “Do everything possible to avoid repeating your offensive behavior”; Wallace, Exline, & Baumeister, 2008). In sum, we propose that self-compassion may lead to personal improvement derived from regrets because it orients people to accept their regret experiences have happened and forgive themselves for them.

### Adaptive Emotional Responses as an Alternative Mediation Hypothesis

Wide-ranging research shows that regret experiences often breed undesirable emotional responses (e.g., anger, shame; Gilovich & Medvec, 1995; Gilovich, Medvec, & Kahneman, 1998; Torges, Stewart, & Nolen-Hoeksema, 2008; Wrosch, Bauer, & Scheier, 2005). However, self-compassion promotes adaptive emotional reactions to difficult personal events. For instance, people who spoke about a recent romantic breakup with greater self-compassion reported less emotional distress at an initial lab visit and even 9 months later (Sbarra, Smith, & Mehl, 2012). In other work, self-compassionate people reported less negative and self-conscious emotions in reaction to three hypothetical negative-event scenarios (e.g., test failure; Leary et al., 2007). In another study, trait self-compassion was inversely correlated with negative and self-conscious emotions in response to a hypothetical (e.g., responsibility for losing a competition) and a recalled scenario (i.e., worst sports event that happened in the past year) among female athletes (Reis et al., 2015). Last, people who were instructed to write about a distressing event from a self-compassionate perspective daily for 7 days, compared with a control group, reported greater positive affect at 3 and 6 months after the study (Shapira & Mongrain, 2010).

Together, these findings raise the possibility of an alternative mediation hypothesis—namely, self-compassion may lead to personal improvement derived from regret experiences due to adaptive emotional responses to the regret experiences. Indeed, Updegraff and Taylor (2000) argued that one factor preventing people from finding benefits in difficult life events is poor emotional adjustment. Thus, it could be that self-compassion reduces negative (e.g., anger) and self-conscious emotions (e.g., shame), and enhances positive emotions (e.g.,

joy), in response to regrets. In turn, these effects of self-compassion on emotions may be what enable people to engage in adaptive coping strategies, such as finding personal improvement through their regrets. Accordingly, we examined this alternative mediation model alongside our tests of acceptance and forgiveness as mechanisms.

## The Current Research

In Study 1, we examined whether self-compassion, compared with self-esteem, displayed in people's public regret posts on a blog website was associated with greater personal-improvement inclinations. Study 2 tested whether trait self-compassion, compared with self-esteem, predicts greater self-reported and observer-rated personal improvement derived from recalled regret experiences. Finally, Study 3 extended the previous studies with an experimental approach and explored acceptance and forgiveness as potential mediators of the relation between self-compassion and personal improvement. Specifically, Study 3 participants were instructed to respond to a recalled regret from a self-compassionate perspective versus a self-esteem bolstering perspective, or to write about a hobby (positive distraction control). Participants then reported their acceptance, forgiveness, and personal improvement. Across studies, we assessed emotions to explore adaptive emotional responses as an alternative mediation model. Finally, we also explored whether regret type (regrets of action vs. inaction) and time since the recalled regret experiences occurred (months) moderated our findings.

## Study 1

Study 1 provided an initial test of our hypothesis that self-compassion promotes personal improvement following regrets. Specifically, we conducted content analyses of the regrets that people anonymously posted on a blog website ([www.secretregrets.com](http://www.secretregrets.com)). It is a publicly accessible website where people can anonymously write about regret that they have had in their life. We hypothesized that the extent to which people expressed self-compassion in their regret posts would be positively associated with personal improvement tendencies and that this association would be independent of expressed self-esteem in the regret posts.

## Method

**Participants and procedure.** We gathered a total of 210 responses from the website [www.secretregrets.com](http://www.secretregrets.com). Prior research distinguished regrets into regret of action (things that one did but wish hadn't done) and regret of inaction (things that one didn't do but wish had done; Gilovich & Medvec, 1995). Therefore, two research assistants scored each response for regret of action (something that this person did but wish he or she hadn't done), regret of inaction (something that this person didn't do but wish he or she had done).

Similar to past research (Gilovich & Medvec, 1994), the research assistants were instructed to code each regrets according to what the person emphasized. Overall, the research assistants agreed on 192 of 210 regrets. The two research assistants discussed and resolved the remaining 18 regrets. Moreover, 13 responses involved an event beyond a person's personal control and were excluded. Regret of action ( $n = 127$ ) outnumbered regret of inaction ( $n = 70$ ) by 1.81 to 1 margin ( $\chi^2 = 16.49, p < .05$ ). Furthermore, the content of these regrets mirrored those reported in Gilovich and Medvec (1994). Because regrets are posted anonymously on this website, we were unable to gather demographic information (e.g., gender, age) about respondents. When people accessed the website, they received the following instruction on the top of the main page: "What's the biggest regret of your life? What one thing would you change if you had a second chance?" These instructions were similar to those used by Gilovich and Medvec (1994; Study 2) in their research on regret experiences. Two research assistants, who were blind to the hypothesis, coded the regret posts for self-compassion (Raes, Pommier, Neff, & Van Gucht, 2011), and two separate research assistants, also blind to the hypothesis, coded the regret posts for self-esteem (Robins, Hendin, & Trzesniewski, 2001). All four research assistants coded for emotions (Gilovich et al., 1998) and personal improvement (Tedeschi & Calhoun, 1996) expressed in the regret posts.

## Measures

**Self-compassion.** The two research assistants read each regret and coded it for the degree to which it expressed self-compassion using a modified version of the 12-item Self-Compassion Scale–Short Form (SCS-SF; Raes et al., 2011). Similar to past research (see Sbarra et al., 2012), the self-compassion items were changed from a first-person perspective to a third-person perspective (e.g., "This person was consumed by feelings of inadequacy from his or her regret"). The research assistants scored each of the 12 items using a 5-point Likert-type scale 0 (*never*) to 4 (*a lot*). The scores for all the items were averaged to create a composite self-compassion score for each person ( $M = 1.70, SD = 0.41$ , intraclass correlation coefficient [ICC] = .76). Four months later, one of the coders re-coded all of the regret posts for self-compassion and demonstrated an average test–retest reliability of  $\alpha = .83$ . Higher scores indicated greater self-compassion.

**Self-esteem.** Two separate research assistants coded each regret post for the degree to which it suggested the respondent showed high self-esteem, using a modified version of the Single-Item Self-Esteem Scale (SISE; Robins et al., 2001). The self-esteem item was changed from a first-person perspective to a third-person perspective (i.e., "This person showed high self-esteem"). The research assistants scored self-esteem using a 5-point Likert-type scale 0 (*never*) to 4 (*a lot*). Their ratings were averaged to create a composite

**Table 1.** Zero Order and Partial Correlations: Observer-Rated Self-Compassion, Observer-Rated Emotions, LIWC Emotions, and Personal Improvement in Study 1.

Variables	Self-compassion	Self-esteem	Negative emotions	Self-conscious emotions	Positive emotion	LIWC positive emotions	LIWC negative emotions	Personal improvement
Self-compassion	—							
Self-esteem	.49*	—						
Negative emotions	-.26* (-.16*)	-.25*	—					
Self-conscious emotions	-.43* (-.28*)	-.43*	.17*	—				
Positive emotions	.52* (.42*)	.37*	-.18*	-.18*	—			
LIWC positive emotions	.11 (.10)	.03	-.18*	-.18*	.14*	—		
LIWC negative emotions	-.38* (-.35*)	-.18*	.10	.16*	-.15*	-.03	—	
Personal improvement	.29* (.23*/.15*)	.36*	-.05	.15*	.29*	-.04	-.17*	—

Note. The correlations inside the parentheses in the self-compassion column are partial correlations controlling for self-esteem. The partial correlation on the left of the “/” is controlling for self-esteem and on the right is controlling for self-esteem, self-conscious emotions, positive emotion, and LIWC negative emotions. LIWC = Linguistic Inquiry and Word Count.

\* $p < .05$ .

self-esteem score ( $M = 1.70$ ,  $SD = 0.80$ ,  $ICC = .52$ ). Four months later, both coders re-coded all of the regret posts for self-esteem and demonstrated an average test–retest reliability of  $\alpha = .90$ .

**Emotions.** To measure emotions expressed in the regret posts, we adapted the emotion items used by Gilovich et al. (1998). Specifically, all four research assistants were instructed to rate each regret to the degree in which the respondent expressed the following seven emotions: angry, disgusted, frustrated, irritated, ashamed, embarrassed, guilty, and happy, using a scale ranging from 1 (*not at all*) to 3 (*a great deal*). Consistent with Gilovich et al. (1998), we combined angry, disgusted, frustrated, and irritated to comprise negative emotions ( $M = 1.70$ ,  $SD = 0.50$ ,  $ICC = .78$ ; three coders achieved a 4-month average test–retest reliability of  $\alpha = .61$ ). Ashamed, embarrassed, and guilty were combined to index self-conscious emotions ( $M = 1.90$ ,  $SD = 0.54$ ,  $ICC = .81$ ; three coders achieved a 4-month average test–retest reliability of  $\alpha = .72$ ). Happy was used to measure positive emotion ( $M = 1.13$ ,  $SD = 0.29$ ,  $ICC = .66$ ; three coders achieved a 4-month average test–retest reliability of  $\alpha = .78$ ). Higher scores indicated more negative and self-conscious emotions.

**Linguistic Inquiry and Word Count (LIWC).** We also analyzed all posts using the LIWC text-analysis program (Pennebaker, Francis, & Booth, 2001). The LIWC program uses an internal dictionary consisting of 74 standardized linguistic categories and provides the percentage of words in the text that fall into those specific linguistic categories. Here, we focused on the categories of positive emotions ( $M = 3.20$ ,  $SD = 2.9$ ) and negative emotions ( $M = 6.4$ ,  $SD = 4.2$ ).

**Personal improvement.** To examine whether respondents expressed personal improvement inclinations from their regret posts, we created two items based on the theoretical

foundations of post-traumatic improvement (Tedeschi & Calhoun, 1996). Specifically, all four research assistants were instructed to rate each post as to whether “This person learned to not repeat this regret” and “This person has grown as a result of this regret,” using a scale ranging from 0 (*not at all*) to 4 (*definitely*);  $M = 2.00$ ,  $SD = 0.83$ ,  $ICC = .72$ ; three coders achieved a 4-month average test–retest reliability of  $\alpha = .83$ ).

### Results and Brief Discussion

We standardized all variables. Replicating prior research, observer-rated self-compassion and self-esteem were positively correlated. As shown in Table 1, both self-compassion and self-esteem were negatively correlated with negative emotions, self-conscious emotions, and LIWC negative emotions, and positively correlated with observer-rated personal improvement. A partial correlation controlling for self-esteem revealed that self-compassion continued to show these patterns of correlations (see Table 1). Interestingly, self-conscious emotions were positively correlated with personal improvement, whereas LIWC negative emotions were negatively correlated with personal improvement. Therefore, we conducted a separate partial correlation controlling for self-esteem, self-conscious emotions, positive emotion, and LIWC negative emotions, finding the association between observer-rated self-compassion and personal improvement remained ( $r = .15$ ,  $p = .03$ ). We also found that regret type did not moderate the relations between self-compassion and personal improvement ( $b = -.02$ ,  $p = .76$ ), indicating the effect of self-compassion upon personal improvement is generalizable across regret type. Last, these results provide preliminary support for a unique positive association between self-compassion and personal improvement, one that cannot be explained by self-esteem, negative emotions, positive emotions, or self-conscious emotions.

## Study 2

Study 2 aimed to conceptually replicate Study 1's results by testing whether self-reported trait self-compassion, compared with self-esteem, predicts greater personal improvement derived from regret experiences. We also instructed two research assistants (different from those used in Study 1) to rate participants' personal improvement inclinations based on their open-ended regret descriptions, thereby reducing concerns about shared method variance for the personal improvement results. Finally, given the retrospective design we used in this study, we examined time since regret experiences occurred (month) as a covariate and a potential moderator in our analyses.

### Method

**Participants.** Participants were 125 adults (60% female and 79% Caucasian) between the ages of 19 and 79 years ( $M_{age} = 37.6$ ,  $SD = 14.8$ ) who were recruited from Amazon's Mechanical Turk for nominal compensation.

**Procedures.** Participants accessed the study through an online server, provided informed consent, and filled out trait measures of self-compassion (Neff, 2003) and self-esteem (Rosenberg, 1965). Afterward, participants were told that "most people have experienced various regrets in life . . ." and ". . . one type of regret that you can have are things that you DID but wish you had not done" or ". . . one type of regret that you can have are things that you did NOT do, but wish you had done" (i.e., regrets of action vs. inaction; see Gilovich & Medvec, 1994). Participants were randomly assigned to write about either a regret of action or inaction. We included different regret type to ensure that the hypothesized link between trait self-compassion and personal improvement does not hinge on a particular type of regret (for a review, see Gilovich & Medvec, 1995). Afterward, they reported time since the regret experience occurred ( $M_{months} = 134.9$ ,  $SD = 147.2$ ) and then completed emotion and personal improvement items. Finally, participants completed demographic items and then were debriefed and thanked for their participation.

### Measures

**Trait self-compassion.** Participants completed the 26-item Self-Compassion Scale (SCS; see Neff, 2003) by responding on a 7-point Likert-type scale, from 1 (*strongly disagree*) to 7 (*strongly agree*), to statements that assessed three positive components (self-kindness, common humanity, and mindfulness) and three negative components (self-judgment, isolation, and over-identification) of self-compassion. The negative subscales were reverse-coded and averaged with the positive subscales to create a composite self-compassion score ( $M = 4.60$ ,  $SD = 1.20$ ,  $\alpha = .87$ ; Leary et al., 2007).

**Trait self-esteem.** Participants completed the 10-item Rosenberg (1965) self-esteem inventory, a widely used measure of trait self-esteem, using a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*;  $M = 5.00$ ,  $SD = 1.40$ ;  $\alpha = .93$ ).

**Emotions.** After participants wrote about their regret, they were asked to rate "how much you feel the following emotions right now," using a scale ranging from 1 (*not at all*) to 7 (*a lot*). We used the same emotion items used in Study 1 to measure participants' momentary negative emotions ( $M = 3.65$ ,  $SD = 1.68$ ;  $\alpha = .85$ ) and momentary self-conscious emotions ( $M = 3.88$ ,  $SD = 2.02$ ;  $\alpha = .89$ ). We also administered the items happy, joy, content, delighted, and glad to measure participants' momentary positive emotions ( $M = 1.70$ ,  $SD = 1.00$ ;  $\alpha = .91$ ).

**Self-reported personal improvement.** Participants completed a five-item personal-improvement scale, adapted from Breines and Chen (2012). Participants rated their agreement with each item using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale (e.g., "I am committed to not repeating this regret [or anything like it] again," "I have grown as a person as a result of this regret;  $M = 5.10$ ,  $SD = 1.40$ ;  $\alpha = .67$ ). We performed an exploratory factor analysis (principal component extraction) with varimax rotation to ensure that the five items we used belong together. A one-factor solution was suggested by the scree test (Cattell, 1969). This factor accounted for 47.5% of the variance. The mean loading for the items was .65. Finally, to test whether our a priori personal improvement scale appropriately captured the construct, we retained the varimax-rotated factor scores from the principal component analysis and correlated it with scores on the scale. These scores correlated .97 with the corresponding factor scores. In short, our a priori scale captured almost the entire variance of the empirically determined factor. This suggests that the items we used to capture personal improvement are captured by one underlying personal improvement factor.

**Observer-rated personal improvement.** We also collected observer-rated personal improvement. Similar to Study 1, we had two research assistants rate participants' open-ended descriptions of their regret on whether they displayed themes related to personal improvement using the same items from Study 1: "This person learned to not repeat this regret" and "This person has grown as a result of this regret" from 0 (*not at all*) to 4 (*definitely*;  $M = 2.10$ ,  $SD = 0.90$ ,  $ICC = .60$ ; one of the research assistants achieved a 5-month test-retest reliability of  $\alpha = .94$ ).

## Results and Brief Discussion

**Correlations and partial correlations.** As shown in Table 2, self-compassion and self-esteem were both inversely correlated with negative emotions and self-conscious emotions.

**Table 2.** Zero-Order and Partial Correlations: Trait Self-Compassion, Emotions, Observer-Rated and Self-Reported Personal Improvement in Study 2.

Variables	Self-compassion	Self-esteem	Negative emotions	Self-conscious emotions	Positive emotions	Observer-rated personal improvement	Self-reported personal improvement
Self-compassion	—						
Self-esteem	.67*	—					
Negative emotions	-.22* (.03)	-.39*	—				
Self-conscious emotions	-.27* (-.08)	-.32*	.74*	—			
Positive emotions	.19* (.16)	.11	-.20*	-.22*	—		
Observer-rated personal improvement	.21* (.25*)	.03	.19*	.18*	-.06	—	
Self-reported personal improvement	.32* (.20*)	.27*	.06	.13	-.06	.10	—

Note. The correlations inside the parentheses in the self-compassion column are partial correlations controlling for self-esteem.

\* $p < .05$ .

**Table 3.** Multiple Regression Model: Trait Self-Compassion Predicting Personal Improvement With Covariates in Study 2.

IVs	Self-reported personal improvement		Observer-rated personal improvement	
	$\beta$	95% CI	$\beta$	95% CI
Age	.14	[-.15, .51]	-.02	[-.25, .21]
Gender	.07	[-.27, .63]	-.01	[-.34, .30]
Time since regret	-.20	[-.57, .07]	.10	[-.14, .31]
Regret type	.15	[-.02, .40]	.10	[-.06, .24]
Self-esteem	.11	[-.15, .42]	-.19	[-.36, .04]
Self-compassion	.27*	[-.05, .62]	.33*	[-.08, .47]
Regret type by self-compassion interaction	-.04	[-.26, .16]	.04	[-.12, .18]
Time since regret by self-compassion interaction	-.11	[-.34, .07]	.09	[-.07, .22]

Note.  $\beta$  is the standardized beta. Gender is coded as 1 (male) and 2 (female). Regret type is coded as -1 (regret of inaction) and 1 (regret of action). CI = confidence interval; IV = independent variable.

\* $p < .05$ .

Self-compassion, but not self-esteem, was positively correlated with positive emotions. Furthermore, self-compassion was positively associated with self-reported ( $r = .32, p < .001$ ) and observer-rated personal improvement ( $r = .21, p = .019$ ). In contrast, self-esteem was positively correlated with self-reported personal improvement ( $r = .27, p = .002$ ) but not observer-rated personal improvement ( $r = .03, p = .75$ ).

We next examined partial correlations controlling for self-esteem to ascertain the unique relations between self-compassion and emotional responses, as well as personal improvement. As shown in Table 2, the relations of self-compassion with negative, self-conscious, and positive emotions were each reduced to non-significance when self-esteem was partialled out. This indicates that emotional responses cannot be a mediator of the relation between self-compassion and personal improvement beyond the influence of self-esteem. Importantly, however, the relations between self-compassion and both self-reported and observer-rated personal improvement remained significant even when self-esteem was partialled out (see Table 2).

**Additional analyses.** To further clarify the relation between self-compassion and personal improvement, we standardized all variables and tested whether self-compassion predicted self-reported and observer-rated personal improvement above and beyond age, gender, regret type, time since the regret experiences occurred, and self-esteem. Furthermore, we tested whether the effect of self-compassion on personal improvement was moderated by regret type and/or time since the regret experiences occurred. As shown in Table 3, we found that self-compassion predicted greater self-reported ( $b = .27, 95\% \text{ confidence interval [CI] } [-.05, .62]$ ) and observer-rated ( $b = .33, 95\% \text{ CI } [-.08, .47]$ ) personal improvement above and beyond the covariates.

Also, we found no significant main effect of regret type on negative emotions,  $F(1, 123) = 2.66, p = .11$ , self-conscious emotions,  $F(1, 123) = 2.73, p = .10$ , positive emotions,  $F(1, 123) = 0.03, p = .87$ , self-reported personal improvement,  $F(1, 123) = 1.82, p = .18$ , and observer-rated personal improvement,  $F(1, 123) = 1.40, p = .24$ . Moreover, regret type and time since regret did not moderate the relations

between self-compassion and self-reported personal improvement or observer-rated personal improvement (see Table 3).

In sum, Study 2 showed self-compassionate people self-reported and were observed to have experienced greater personal improvement from their recalled regret, extending Study 1's findings. The link between trait self-compassion and personal improvement was independent of self-esteem and was not moderated by regret type or time since the regret experiences had occurred. As expected, self-compassion was correlated with adaptive emotional responses, but these relations were attenuated after controlling for self-esteem, indicating adaptive emotional responses cannot account for the relation between self-compassion and personal improvement beyond the influence of self-esteem.

### Study 3

The first goal of Study 3 was to bolster the correlational findings of the previous studies with experimental evidence. Specifically, Study 3 participants were instructed to respond to their biggest regret of action or inaction from a self-compassionate perspective versus a perspective of validating their positive qualities (Leary et al., 2007), or they were assigned to a positive distraction control condition in which they described a hobby (Breines & Chen, 2012). Afterward, they completed items tapping into state self-compassion (as a manipulation check), emotions, acceptance, forgiveness, and personal improvement. The second goal of Study 3 was to test acceptance and forgiveness in a multiple mediation model to determine their *unique* mediating effects on the relation between experimentally induced self-compassion and personal improvement.

### Method

**Participants.** Participants were 400 students (73% female; 26% Caucasian) between the ages of 18 and 49 years ( $M_{age} = 21.6$ ,  $SD = 3.7$ ) from a large public university on the West Coast of the United States who received course credit in exchange for their participation.

**Procedures.** Participants accessed the study through an online server and provided informed consent. Afterward, they were randomly assigned to either write about their biggest regret of action ("things that you DID but wish you had not done") or regret of inaction ("things that you did NOT do, but wish you had done"; Gilovich & Medvec, 1994, 1995). Then, they reported time since their regret experience occurred ( $M_{months} = 39.3$ ,  $SD = 41.1$ ). Subsequently, participants were randomly assigned to one of three experimental conditions. In the self-compassion condition, participants were asked to respond to the following prompt: "Imagine that you are talking to yourself about this regret from a compassionate and understanding perspective.

What would you say?" In the self-esteem condition, participants were asked to respond to the following prompt: "Imagine that you are talking to yourself about this regret from a perspective of validating your positive (rather than negative) qualities." These instructions were adapted from Breines and Chen (2012) and Leary et al. (2007). In the control condition, participants were asked to describe a hobby they enjoyed (Breines & Chen, 2012). Following the manipulation, participants indicated their state feelings of self-compassion, emotions, acceptance, forgiveness, and personal improvement. Finally, participants completed demographic items and then were debriefed and thanked for their participation.

### Measures

**State self-compassion.** Participants completed a four-item measure adapted from Neff (2003) that assessed state self-compassion ("I am being understanding toward myself," "I am treating myself with caring and kindness," "I am trying to take a balanced view of things," "I see my weakness as part of being human"). Participants responded using a scale ranging from 1 (*not at all*) to 7 (*a lot*;  $M = 4.98$ ,  $SD = 1.10$ ,  $\alpha = .83$ ).

**State emotions.** We administered the same emotion items from Study 2 to measure participants' momentary negative emotions ( $M = 3.50$ ,  $SD = 1.50$ ;  $\alpha = .84$ ), self-conscious emotions ( $M = 4.00$ ,  $SD = 1.60$ ;  $\alpha = .81$ ), and positive emotion ( $M = 2.30$ ,  $SD = 1.30$ ;  $\alpha = .94$ ).

**Acceptance.** Participants completed four items adapted from the COPE scale (Carver et al., 1989) as a measure of their momentary feelings of acceptance, using a scale ranging from 1 (*not at all*) to 7 (*definitely*). A sample item is "I am accepting of the fact that this regret has happened" ( $M = 4.80$ ,  $SD = 1.20$ ;  $\alpha = .81$ ).

**Forgiveness.** Participants completed four items adapted from the Heartland Forgiveness Scale (Thompson et al., 2005) as a measure of their momentary feelings of forgiveness using a scale ranging from 1 (*not at all*) to 7 (*definitely*). A sample item is "It is very hard for me to forgive myself about this regret" ( $M = 4.40$ ,  $SD = 1.30$ ;  $\alpha = .83$ ).

**Personal improvement.** Participants completed the same five-item personal improvement scale used in Study 2 ( $M = 4.97$ ,  $SD = 1.10$ ;  $\alpha = .68$ ). As in Study 2, we performed an exploratory factor analysis (principal component extraction) with varimax rotation on these five items. Once again, a one-factor solution was suggested by the scree test, and this factor accounted for 46.4% of the variance. The mean loading for the items was .66. Finally, scores on our personal improvement scale correlated .98 with the corresponding factor scores, once again suggesting our a priori scale captured almost the entire variance of the empirically-determined fac-

**Table 4.** Means and Standard Deviations (in Parentheses): State Self-Compassion, Emotions, Acceptance, Forgiveness, and Personal Improvement as a Function of Manipulation Conditions in Study 3.

Conditions	State self-compassion	Negative emotions	Self-conscious emotions	Positive emotions	Acceptance	Forgiveness	Personal improvement
Positive distraction control	4.81 <sub>a</sub> (1.09)	3.66 <sub>a</sub> (1.49)	4.29 <sub>a</sub> (1.59)	2.26 <sub>a</sub> (1.28)	4.59 <sub>a</sub> (1.24)	4.12 <sub>a</sub> (1.32)	4.92 <sub>a</sub> (1.07)
Self-esteem	4.83 <sub>a</sub> (0.98)	3.65 <sub>a</sub> (1.53)	3.84 <sub>b</sub> (1.64)	2.36 <sub>a</sub> (1.24)	4.79 <sub>ab</sub> (1.27)	4.44 <sub>b</sub> (1.36)	4.76 <sub>a</sub> (1.10)
Self-compassion	5.29 <sub>b</sub> (1.00)	3.19 <sub>b</sub> (1.51)	3.70 <sub>b</sub> (1.60)	2.41 <sub>a</sub> (1.29)	5.03 <sub>b</sub> (1.24)	4.72 <sub>b</sub> (1.32)	5.19 <sub>b</sub> (1.07)

Note. Means with different subscripts are significantly different from each other.

tor. This suggests the items are captured by one underlying personal improvement factor.

### Results and Brief Discussion

**Manipulation check: State self-compassion.** As shown in Table 4, responses to the four-item state SCS differed across experimental conditions,  $F(2, 397) = 9.30, p < .001$ , with higher scores in the self-compassion condition ( $M = 5.29, SD = 1.00$ ) compared with the self-esteem ( $M = 4.83, SD = 0.98$ ) and control conditions ( $M = 4.81, SD = 1.09$ ). A follow-up, pairwise contrast between the self-compassion and self-esteem conditions was significant,  $t = 3.68, r = .18, p < .001$ , as was the one between the self-compassion and control conditions,  $t = 3.78, r = .18, p < .001$ . The self-esteem and control conditions did not differ from each other,  $t = .06, p = .95$ . These results suggest our manipulation was successful.

Next, we conducted six separate 2 (regret type: action vs. inaction)  $\times$  3 (condition: self-compassion vs. self-esteem vs. control) analyses of variance predicting the three emotions, acceptance, forgiveness, and personal improvement dependent variables. We describe the results for regret type and the interaction between regret type and condition, followed by the results of manipulation conditions.

#### Regret type analyses

**Emotions.** We found a significant main effect of regret type,  $F(1, 394) = 6.83, r = .13, p = .009$ , on negative emotions. Participants reported significantly more negative emotions from their regret of action ( $M = 3.72, SD = 1.51$ ) than their regret of inaction ( $M = 3.29, SD = 1.50$ ). However, there was no significant regret type by condition interaction,  $F(2, 394) = 0.15, p = .86$ . We also found a significant main effect of regret type,  $F(1, 394) = 5.76, r = .12, p = .017$ , on self-conscious emotions. Participants reported significantly more self-conscious emotions from their regret of action ( $M = 4.14, SD = 1.61$ ) than their regret of inaction ( $M = 3.77, SD = 1.58$ ). However, there was no significant regret type by condition interaction,  $F(2, 394) = 0.16, p = .85$ . We found no significant main effect of regret type,  $F(1, 394) = 1.58, p = .21$ , or regret type by condition interaction,  $F(2, 394) = 2.13, p = .12$ , on positive emotions.

**Acceptance, forgiveness, and personal improvement.** There was no significant main effect of regret type,  $F(1, 394) =$

$0.84, p = .36$ , or regret type by condition interaction,  $F(2, 394) = 2.00, p = .14$ , on acceptance. There was no significant main effect of regret type,  $F(1, 394) = 2.28, p = .13$ , or regret type by condition interaction,  $F(2, 394) = 0.40, p = .67$ , on forgiveness. There was a significant main effect of regret type,  $F(1, 394) = 14.12, r = .18, p < .001$ , on personal improvement. Participants reported significantly more personal improvement from their regret of action ( $M = 5.15, SD = 1.07$ ) than their regret of inaction ( $M = 4.80, SD = 1.08$ ). There was no significant regret type by condition interaction on personal improvement,  $F(2, 394) = 2.28, p = .10$ . Separate regression analyses revealed no significant time since regret occurred by condition interactions on negative emotions ( $b = -.04, p = .40$ ), self-conscious emotions ( $b = -.09, p = .09$ ), positive emotions ( $b = .07, p = .19$ ), acceptance ( $b = .04, p = .49$ ), forgiveness ( $b = .05, p = .30$ ), or personal improvement ( $b = -.05, p = .31$ ).

**Manipulation Condition Analyses.** In the following sections, we describe the effect of the manipulation.

**Emotions.** There was a significant condition effect for negative emotions,  $F(2, 394) = 4.22, p = .015$ . As shown in Table 4, participants in the self-compassion condition ( $M = 3.19, SD = 1.51$ ) reported significantly less negative emotion than those in the self-esteem ( $M = 3.65, SD = 1.53$ ),  $t = 2.48, r = .15, p = .014$ , and the positive distraction control ( $M = 3.66, SD = 1.49$ ) conditions,  $t = 2.55, r = .15, p = .011$ . The self-esteem and control conditions did not significantly differ,  $t = 0.02, p = .98$ .

There was a significant condition effect for self-conscious emotions,  $F(2, 394) = 5.03, p = .007$ . As shown in Table 4, participants in the self-compassion condition ( $M = 3.70, SD = 1.60$ ) did not differ significantly from those in the self-esteem condition ( $M = 3.84, SD = 1.64$ ),  $t = 0.70, p = .48$ . However, participants in both the self-compassion and self-esteem conditions reported significantly lower self-conscious emotions compared with their counterparts in the positive distraction control condition ( $M = 4.29, SD = 1.59$ ),  $t = 3.03, r = .18, p = .003$  and  $t = 2.27, r = .14, p = .023$ , respectively.

There were no significant condition difference for positive emotions,  $F(2, 394) = 0.74, p = .48$ ; see Table 4.

**Table 5.** Correlations Among Conditions, Potential Mediators, Control Variable, and Personal Improvement in Study 3.

Variables	Conditions		Alternative mediators			Predicted mediators		Control variables	Outcome variable
	Self-compassion contrast	Control contrast	Negative emotions	Self-conscious emotions	Positive emotions	Acceptance	Forgiveness	Time since regret	Personal improvement
<b>Conditions</b>									
Self-compassion contrast	—								
Control contrast	-.01	—							
<b>Alternative mediators</b>									
Negative emotions	-.15*	.04	—						
Self-conscious emotions	-.12*	.09	.68*	—					
Positive emotions	.04	-.04	-.22*	-.23*	—				
<b>Predicted mediators</b>									
Acceptance	.13*	-.06	-.59*	-.51*	.08	—			
Forgiveness	.16*	-.10	-.64*	-.59*	.17*	.78*	—		
<b>Control variable</b>									
Time since regret	-.03	.03	.06	.11*	-.07	.03	-.06	—	
<b>Outcome variable</b>									
Personal improvement	.13*	.03	-.08	.08	-.04	.30*	.21*	.18*	—

Note. The self-compassion contrast compares the self-compassion condition to the control and self-esteem conditions (coded as self-compassion = 2, control = -1, self-esteem = -1) and most closely tests our hypothesis that self-compassion heightens personal improvement via acceptance, and forgiveness. The control contrast tested the residual difference between the control and self-esteem conditions (coded as self-compassion = 0, control = 1, self-esteem = -1).

\* $p < .05$ .

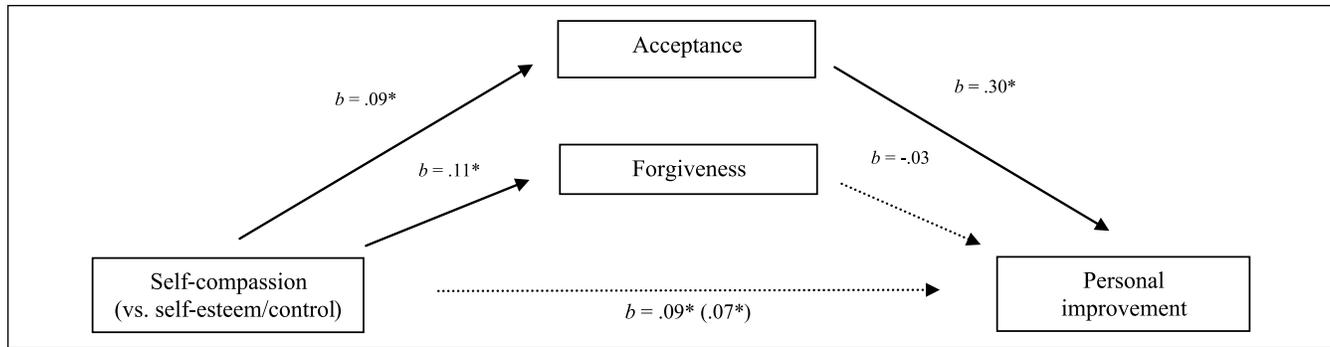
**Acceptance and forgiveness.** There were significant condition effects for both acceptance,  $F(2, 394) = 4.29, p = .014$ , and forgiveness,  $F(2, 394) = 7.02, p = .001$ . As shown in Table 4, participants in the self-compassion condition ( $M = 5.03, SD = 1.24$ ) reported significantly more acceptance than those in the positive distraction control condition ( $M = 4.59, SD = 1.24$ ),  $t = 2.92, r = .17, p = .004$ . However, the self-compassion condition did not differ significantly from the self-esteem condition ( $M = 4.79, SD = 1.27$ ),  $t = 1.56, p = .12$ , and the self-esteem condition was also not significantly different from the positive distraction control condition,  $t = 1.31, p = .19$ . However, participants in both the self-compassion ( $M = 4.72, SD = 1.32$ ) and self-esteem ( $M = 4.44, SD = 1.36$ ) conditions reported more forgiveness than those in the control condition ( $M = 4.12, SD = 1.32$ ),  $t = 3.73, r = .22, p < .001$ , and  $t = 1.98, r = .12, p = .048$ , respectively. The self-compassion and self-esteem conditions did not differ significantly on forgiveness,  $t = 1.67, p = .09$ .

**Personal improvement.** There was a condition effect for personal improvement,  $F(2, 394) = 5.51, p = .004$ . As shown in Table 4, participants in the self-compassion condition ( $M = 5.19, SD = 1.07$ ) reported significantly more personal improvement than those in both the self-esteem ( $M = 4.76, SD = 1.10$ ) and positive distraction control ( $M = 4.92, SD = 1.07$ ) conditions,  $t = 3.29, r = .19, p = .001$ , and  $t = 2.11, r = .13, p = .035$ , respectively. The self-esteem and control conditions did not differ from each other,  $t = 1.22, p = .22$ .

**Mediation analysis.** Next, we tested whether the effect of induced self-compassion on personal improvement, relative to the self-esteem and control conditions, could be explained by increased acceptance and forgiveness. To do this, we standardized all the variables and created two orthogonal contrasts. The first contrast (“self-compassion contrast”) compared the self-compassion condition to the control and self-esteem conditions combined (self-compassion = 2, control = -1, self-esteem = -1). This contrast most closely tested our hypothesis that self-compassion heightens personal improvement via acceptance and forgiveness. The second contrast (“control contrast”) tested the residual difference between the control and self-esteem conditions (self-compassion = 0, control = 1, self-esteem = -1).

As shown in Table 5, the self-compassion contrast (but not the control contrast) was positively linked to personal improvement ( $r = .13, p = .01$ ) and to the proposed mediators of acceptance ( $r = .13, p = .013$ ) and forgiveness ( $r = .16, p = .001$ ). Further meeting the conditions for mediation, acceptance ( $r = .30, p < .001$ ) and forgiveness ( $r = .21, p < .001$ ) were, in turn, linked to personal improvement. The two proposed mediators were positively correlated with each other. Conversely, none of the emotional responses were related to personal improvement, indicating that they cannot mediate the relation between the self-compassion contrast and personal improvement (see Table 5).

To test the unique mediation effects of acceptance and forgiveness, we tested them in a single mediation model.



**Figure 1.** Multiple mediation model for Study 3, controlling for time since regret.

Note. The predictor variable is coded to contrast the self-compassion condition against the self-esteem and positive distraction control conditions (self-compassion = 2, self-esteem = -1, control = -1). Standardized coefficients reported are from Preacher and Hayes (2008) bootstrapping procedure with 5,000 resamples. We ran a separate mediation model with negative emotions, self-conscious emotions, and positive emotions as additional mediators. This did not alter the partial mediation of acceptance on the relation between self-compassion contrast and personal improvement.

\* $p < .05$ .

Specifically, we tested the proposed mediating effects using a bootstrapping procedure for multiple mediator models recommended by Preacher and Hayes (2008). We entered time since regret occurred as a covariate to take into account its positive relation with personal improvement ( $r = .18, p < .001$ ). To test whether the unique contribution of each mediator (i.e., the specific indirect effect through each mediator) was significantly different from zero, we constructed 95% CIs (bias corrected and accelerated) using 5,000 bootstrap samples. If zero is contained in the interval, then the indirect effect is not significant, and the potential mediator does not mediate the link between induced self-compassion and increased personal improvement.

Figure 1 illustrates the mediation model and displays the path coefficients. Taken together, the total indirect effect through the mediators (i.e., the difference between the total and direct effects) was significant, with a point estimate of .022 and a 95% CI of .002 to .048. As shown in Figure 1, the direction of both the a and b paths is consistent with the interpretation that induced self-compassion leads to higher acceptance and forgiveness, which in turn lead to greater personal improvement. More importantly, however, the specific indirect effects indicate that only acceptance (point estimate = .025, 95% CI [.006, .062]) was a unique mediator; forgiveness did not contribute to the indirect effect above and beyond acceptance (point estimate = -.003, 95% CI [-.025, .014]). We ran a separate mediation model with negative emotions, self-conscious emotions, and positive emotions as additional mediators. This did not alter the partial mediation of acceptance on the relation between self-compassion contrast and personal improvement. Thus, acceptance but not forgiveness partially mediated the effect of the self-compassion induction on personal improvement.

Taken as a whole, Study 3's experimental findings conceptually replicated and extended the correlational evidence obtained in the prior two studies. People who were induced with a self-compassionate mindset, compared with those in

the self-esteem and control conditions, reported greater personal improvement. Emotional responses were not correlated with personal improvement, suggesting they did not account for the link between induced self-compassion and enhanced personal improvement. Instead, a multiple mediation model found that acceptance partially mediated the relation between induced self-compassion and enhanced personal improvement. Finally, neither regret type nor time since regret occurred moderated the effect of induced self-compassion on personal improvement, suggesting the results are generalizable to regrets of action and inaction and regrets that happened recently or a long time ago.

## General Discussion

Why do some people experience more personal improvement from their regret experiences than others? We proposed that self-compassion, an active coping strategy that propels people to confront difficult life events head-on, would lead to greater personal improvement in relation to regret experiences. The results across three studies, using diverse methodologies and samples, provided converging and clear support for this proposition. People whose regret descriptions expressed greater self-compassion also conveyed more personal improvement (Study 1). Highly self-compassionate people reported higher self-reported and observer-rated personal improvement in relation to a recalled regret (Study 2). Finally, people who were induced to think about their regret with a self-compassionate mindset reported greater personal improvement, relative to people in the self-esteem and control conditions (Study 3). Moreover, the effect of experimentally-induced self-compassion on personal improvement was partially mediated by acceptance of the regret. Across studies, we found the link between self-compassion (whether observer-rated, trait, or manipulated) and personal improvement could not be explained by self-esteem or adaptive emotional responses. Last, the effect of self-compassion on personal

improvement was generalizable across regrets of action and inaction, as well as regrets that had happened recently or a long time ago.

### Implications and Future Directions

The extant literature suggests that when people experience regret, there is a tendency to engage in corrective actions, such as finding silver linings (Gilovich & Medvec, 1995). One important contribution of the current research is the demonstration of self-compassion as one approach that enables people to discover and experience personal improvement in relation to their regret experiences. Our results shed light on one reason why some people experience more personal improvement from their regret experiences than others. They also extend prior research documenting self-compassion's role in promoting constructive changes in the face of various difficult life events (Baker & McNulty, 2011; Breines & Chen, 2012; Neff et al., 2005) by applying self-compassion to the study of regret. We hope the current findings will stimulate efforts to discover other psychological factors that may facilitate personal improvement in response to regret experiences.

On another level, our research provided initial process data that speaks to why self-compassion influences personal improvement. Across studies, we demonstrated that self-compassion's association with personal improvement in relation to regret is *not* due to adaptive emotional responses or how much people forgive themselves about their regrets. Instead, self-compassion led to greater personal improvement in part by encouraging people to accept their regrets have happened. Put another way, self-compassion appears to orient people to embrace their regret, and this willingness to remain in contact with their regret may afford people the opportunity to discover avenues for personal improvement. This finding argues against the notion that self-compassion promotes complacency in the face of difficulties. Instead, our findings, together with prior research (Allen et al., 2012; Baker & McNulty, 2011; Breines & Chen, 2012; Neff et al., 2005; Terry et al., 2013), paints self-compassion as a proactive coping strategy that guides people to approach rather than avoid difficult life experiences.

It should be noted that acceptance only partially mediated the effect of induced self-compassion upon personal improvement, suggesting that other factors are at work. We speculate that reappraisal is another plausible mechanism. Reappraisal is a cognitive process in which people construe an event in a way that shifts its emotional impact (Gross & John, 2003). Research has shown that reappraisal at pre-treatment (e.g., "I try to see it in a different light, to make it seem more positive") predicted personal growth 12 months post-treatment among a group of women with breast cancer (Sears, Stanton, & Danoff-Burg, 2003). Other work has found that when people face stressful life situations, reappraisal and acceptance are equally effective at diminishing

aversive emotional reactions (Hofmann, Heering, Sawyer, & Asnaani, 2009; Wolgast, Lundh, & Viborg, 2011), and promoting benefit findings (Helgeson et al., 2006). Future research is needed to test the possibility that reappraisal and acceptance collectively explain the relation between self-compassion and personal improvement derived from regret experiences.

On another note, Study 3 showed that a momentary state of self-compassion can be induced simply by instructing participants to think about their regrets from a kind, non-judgmental, and broader perspective (Baker & McNulty, 2011; Breines & Chen, 2012; Leary et al., 2007). This falls in line with recent work suggesting that self-compassion is a malleable skill that can be improved in a short period of time (8 weeks), conveniently performed in daily life, and maintained over a 1-year period (Neff & Germer, 2013). Paired with evidence suggesting that finding personal improvement in the wake of difficult life events has significant mental and physical health benefits (e.g., better immune function, well-being; Carver & Antoni, 2004; McGregor et al., 2004), the implication here is that self-compassion may be cultivated to facilitate learning and growth, as well as other downstream benefits in response to regret experiences.

Roese and Summerville (2005) demonstrated that people's biggest regret tends to be those where they see the most opportunities for change. This raises the possibility that people in the current research reported personal improvement from their regret experience because they perceive opportunities to correct their behaviors in the future. That is, it may not be self-compassion that predicts personal improvement from regret experiences but simply whether people believe there is room to become better. To explore this, we asked two independent coders to read the regrets in all three studies and code them on opportunity for change based on the exact definition from Roese and Summerville (2005):

Please read each response and rate whether you see tangible opportunities for change, growth, and renewal. By this we mean an open rather than closed door to further action in the service of correction, advancement, and betterment, defined in terms of the individual's perception of situational features or personal talents that enable such pursuit.

Coders used one of the following codes: 0 (*No opportunities*), 1 (*Some opportunities*), and 2 (*A great deal of opportunities*). The coders discussed and resolved any disagreements. Coder-rated opportunity for change was positively associated with coder-rated personal improvement in Study 1 ( $r = .44, p < .001$ ), but coder-rated opportunity for change was not correlated with self-reported or coder-rated personal improvement in Study 2 (self-report:  $r = .07, p = .41$ ; coder-rated:  $r = .15, p = .09$ ) or Study 3 (self-report:  $r = .05, p = .37$ ). Also, opportunity for change did not moderate the effect of self-compassion upon personal improvement (Study 1:  $b = .06, p = .40$ ; Study 2: self-report:  $b = .01, p = .99$ , coder-rated:  $b = .02, p = .84$ ; Study 3:  $b = -.01, p = .94$ ). These

ancillary analyses suggest that opportunities for change did not influence our findings. However, we urge future researchers to continue to examine opportunity for change as it may yield interesting findings that extend the current results.

### Limitations

Several limitations should be noted. We took a measurement-of-mediation approach in Study 3, in which acceptance partially mediated the relation between induced self-compassion and personal improvement. Given that we measured acceptance, it is premature to conclude that acceptance caused personal improvement. Future research could take the experimental-causal-chain approach (Spencer, Zanna, & Fong, 2005) to show that manipulated self-compassion increases state acceptance and manipulated acceptance enhances personal improvement. Moreover, acceptance and forgiveness were highly correlated in the current research. It will be important for future research to replicate our findings with different samples to examine whether acceptance and forgiveness remain highly correlated and whether acceptance remains a unique mediator.

One important limitation in our first study is that the LIWC program does not account for negations in speech. Instead, it does a simple count of positive and negative feeling words. For instance, angry would be considered a negative emotion and happy would be considered a positive emotion. While these nuances could be a potential confound in the results, we should point out that our coders' ratings of emotions were consistent with the LIWC analyses. For instance, coders' ratings of negative emotions were negatively correlated with LIWC positive emotions and positively correlated with LIWC negative emotions. We would be more concerned with this issue if the coding results did not correlate with the LIWC analyses in the expected directions. Consequently, we believe that it is unlikely that nuances like these, to the extent they occurred, influenced our results.

The extant literature, together with the current research, clearly suggests a link between self-compassion and motivation to change and become better. However, the findings do not speak to a direct relation between self-compassion and *actual* personal improvement changes in the future. This would require a longitudinal study that tracks people and their behavior over time. One way to do this is to measure self-compassion among students who failed an exam at time one and ask them to report what they did to improve their test scores before a second exam (see Neff et al., 2005). The results would speak to whether self-compassion engenders motivation *and* actual personal improvement. Moreover, our focus in the current research was to assess people's general personal improvement related responses to regrets, and the items we used were adapted accordingly. It will be important for future research to examine more specific personal improvement responses. For instance, guided by prior research linking

self-compassion to proactive inclinations (Brion et al., 2014; Neff et al., 2005; Terry et al., 2013), we speculate that self-compassion may drive people to take proactive steps toward personal improvement in response to their regret experiences (e.g., taking night school to get a degree).

On another note, research on self-compassion and dealing with difficult life events has often used North American samples, including the current studies. In light of recent concerns about bias in such samples (i.e., WEIRD [western, educated, industrialized, rich, and democratic]; Henrich, Heine, & Norenzayan, 2010), and evidence that there are cross-cultural differences in levels of self-compassion, it would be useful to conduct a cross-cultural replication of our findings. For example, Neff, Pisitsungkagarn, and Hsieh (2008) found that people in Taiwan reported significantly lower trait self-compassion scores than people in the United States. Thus, it is possible that people from regions of the world where self-compassion is not particularly endorsed will be less likely to find personal improvement from regrets, although this speculation clearly awaits future research.

### Conclusion

Regrets are common. What we did or did not do, we often wish we did not or did do. Instead of wishing to go back to un-do or do, what people can do right now is confront these regretted life experiences with self-compassion, paving the way for personal improvement. Self-directed compassion may be a simple tactic that people can use to learn and grow from their regrets. Self-compassion enables us to stay in touch with our regrets and encourages us to become a better version of ourselves.

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### Supplemental Material

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## References

- Ahern, C. (2012). *Where rainbows end*. London, UK; Harper Collins.
- Allen, A. B., Barton, J., & Stevenson, O. (2015). Presenting a self-compassionate image after an interpersonal transgression. *Self and Identity, 14*, 33-50.
- Allen, A. B., Goldwasser, E. R., & Leary, M. R. (2012). Self-compassion and well-being among older adults. *Self and Identity, 11*, 428-453.
- Altieri, M. J., & von Kluge, S. (2009). Family functioning and coping behaviors in parents of children with autism. *Journal of Child and Family Studies, 18*, 83-92.
- Baker, L. R., & McNulty, J. K. (2011). Self-compassion and relationship maintenance: The moderating roles of conscientiousness and gender. *Journal of Personality and Social Psychology, 100*, 853-873.
- Bellizzi, K. M., & Blank, T. O. (2006). Predicting posttraumatic growth in breast cancer survivors. *Health Psychology, 25*, 47-56.
- Breines, J. G., & Chen, S. (2012). Self-compassion increases self-improvement motivation. *Personality and Social Psychology Bulletin, 38*, 1133-1143.
- Brion, J. M., Leary, M. R., & Drabkin, A. S. (2014). Self-compassion and reactions to serious illness: The case of HIV. *Journal of Health Psychology, 19*, 218-229.
- Carver, C. S., & Antoni, M. H. (2004). Finding benefit in breast cancer during the year after diagnosis predicts better adjustment 5 to 8 years after diagnosis. *Health Psychology, 23*, 595-598.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267-283.
- Cattell, R. B. (1969). Comparing factor traits and state scores across ages and cultures. *Journal of Gerontology, 24*, 348-360.
- Chang, H. L., & Lin, H. (2012). Forgiveness as a mediator for the relationship between spirituality and posttraumatic growth in Aceh conflict victims in Indonesia. *International Journal of Social Science and Humanity, 2*, 237-241.
- Costa, J., & Pinto-Gouveia, J. (2011). Acceptance of pain, self-compassion and psychopathology: Using the chronic pain acceptance questionnaire to identify patients' subgroups. *Clinical Psychology & Psychotherapy, 18*, 292-302.
- Costa, J., & Pinto-Gouveia, J. (2013). Experiential avoidance and self-compassion in chronic pain. *Journal of Applied Social Psychology, 43*, 1578-1591.
- Epstude, K., & Jonas, K. J. (2014). Regret and counterfactual thinking in the face of inevitability: The case of HIV-positive men. *Social Psychological and Personality Science, 6*, 157-163.
- Frankl, V. E. (1963). *Man's search for meaning*. New York, NY: Washington Square Press.
- Gilovich, T., & Medvec, V. H. (1994). The temporal pattern to the experience of regret. *Journal of Personality and Social Psychology, 67*, 357-365.
- Gilovich, T., & Medvec, V. H. (1995). The experience of regret: What, when, and why. *Psychological Review, 102*, 379-395.
- Gilovich, T., Medvec, V. H., & Kahneman, D. (1998). Varieties of regret: A debate and partial resolution. *Psychological Review, 105*, 602-605.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*, 348-362.
- Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A meta-analytic review of benefit finding and growth. *Journal of Consulting and Clinical Psychology, 74*, 797-816.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral & Brain Sciences, 33*, 61-83.
- Hill, P. L., Allemand, M., & Burrow, A. L. (2010). Identity development and forgivingness: Tests of basic relations and mediational pathways. *Personality and Individual Differences, 49*, 497-501.
- Hofmann, S. G., Heering, S., Sawyer, A. T., & Asnaani, A. (2009). How to handle anxiety: The effects of reappraisal, acceptance, and suppression strategies on anxious arousal. *Behaviour Research and Therapy, 47*, 389-394.
- King, L. A., & Hicks, J. A. (2007). Whatever happened to "what might have been"? Regrets, happiness, and maturity. *American Psychologist, 62*, 625-636.
- King, L. A., & Raspin, C. (2004). Lost and found possible selves, subjective well-being, and ego development in divorced women. *Journal of Personality, 72*, 603-632.
- King, L. A., & Smith, N. G. (2004). Gay and straight possible selves: Goals, identity, subjective well-being, and personality development. *Journal of Personality, 72*, 967-994.
- Leary, M. R., Tate, E. B., Adams, C. E., Batts Allen, A., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*, 887-904.
- McCullough, M. E. (2000). Forgiveness as human strength: Theory, measurement, and links to well-being. *Journal of Social & Clinical Psychology, 19*, 43-55.
- McGregor, B. A., Antoni, M. H., Boyers, A., Alferi, S. M., Blomberg, B. B., & Carver, C. S. (2004). Cognitive-behavioral stress management increases benefit finding and immune function among women with early-stage breast cancer. *Journal of Psychosomatic Research, 56*, 1-8.
- Morrison, M., & Roesse, N. J. (2011). Regrets of the typical American: Findings from a nationally representative sample. *Social Psychological & Personality Science, 2*, 576-583.
- Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223-250.
- Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social & Personality Psychology Compass, 5*, 1-12.
- Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology, 69*, 28-44.
- Neff, K. D., Hsieh, Y. P., & Dejitterat, K. (2005). Self-compassion, achievement goals, and coping with academic failure. *Self and Identity, 4*, 263-287.
- Neff, K. D., Pisitsungkagarn, K., & Hsieh, Y. P. (2008). Self-compassion and self-construal in the United States, Thailand, and Taiwan. *Journal of Cross-Cultural Psychology, 39*, 267-285.
- Neff, K. D., & Pommier, E. (2013). The relationship between self-compassion and other-focused concern among college undergraduates, community adults, and practicing meditators. *Self and Identity, 12*, 160-176.

- Pennebaker, J. W., Francis, M. E., & Booth, R. J. (2001). *Linguistic inquiry and word count: LIWC 2001*. Mahwah, NJ: Lawrence Erlbaum.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879-891.
- Raes, F., Pommier, E., Neff, K. D., & Van Gucht, D. (2011). Construction and factorial validation of a short form of the self-compassion scale. *Clinical Psychology & Psychotherapy, 18*, 250-255.
- Reis, N. A., Kowalski, K. C., Ferguson, L. J., Sabiston, C. M., Sedgwick, W. A., & Crocker, P. R. (2015). Self-compassion and women athletes' responses to emotionally difficult sport situations: An evaluation of a brief induction. *Psychology of Sport and Exercise, 16*, 18-25.
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global self-esteem: Construct validation of a single-item measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin, 27*, 151-161.
- Roese, N. J., & Summerville, A. (2005). What we regret most . . . and why. *Personality and Social Psychology Bulletin, 31*, 1273-1285.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Saffrey, C., Summerville, A., & Roese, N. J. (2008). Praise for regret: People value regret above other negative emotions. *Motivation and Emotion, 32*, 46-54.
- Sbarra, D. A., Smith, H. L., & Mehl, M. R. (2012). When leaving your ex, love yourself: Observational ratings of self-compassion predict the course of emotional recovery following marital separation. *Psychological Science, 23*, 261-269.
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology, 4*, 219-247.
- Sears, S. R., Stanton, A. L., & Danoff-Burg, S. (2003). The yellow brick road and the emerald city: Benefit finding, positive reappraisal coping and posttraumatic growth in women with early-stage breast cancer. *Health Psychology, 22*, 487-497.
- Shapira, L. B., & Mongrain, M. (2010). The benefits of self-compassion and optimism exercises for individuals vulnerable to depression. *The Journal of Positive Psychology, 5*, 377-389.
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology, 89*, 845-851.
- Stewart, A. J., & Vandewater, E. A. (1999). "If I had it to do over again . . .": Midlife review, midcourse corrections, and women's well-being in midlife. *Journal of Personality and Social Psychology, 76*, 270-283.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9*, 455-471.
- Terry, M. L., Leary, M. R., Mehta, S., & Henderson, K. (2013). Self-compassionate reactions to health threats. *Personality and Social Psychology Bulletin, 39*, 911-926.
- Thompson, L. Y., Snyder, C. R., & Hoffman, L. (2005). Dispositional forgiveness of self, others, and situations. *Journal of Personality, 73*, 313-360.
- Torges, C. M., Stewart, A. J., & Nolen-Hoeksema, S. (2008). Regret resolution, aging, and adapting to loss. *Psychology and Aging, 23*, 169-180.
- Updegraff, J. A., Silver, R. C., & Holman, E. A. (2008). Searching for and finding meaning in collective trauma: Results from a national longitudinal study of the 9/11 terrorist attacks. *Journal of Personality and Social Psychology, 95*, 70-722.
- Updegraff, J. A., & Taylor, S. E. (2000). From vulnerability to growth: Positive and negative effects of stressful life events. In J. H. Harvey & E. D. Miller (Eds.), *Handbook of loss and trauma* (pp. 3-28). New York, NY: Bruner/Mazel.
- Wallace, H. M., Exline, J. J., & Baumeister, R. F. (2008). Interpersonal consequences of forgiveness: Does forgiveness deter or encourage repeat offenses? *Journal of Experimental Social Psychology, 44*, 453-460.
- Ware, B. (2012). *The top five regrets of the dying: A life transformed by the dearly departing*. Brighton-Le-Sands, Australia: Hay House.
- Wolgast, M., Lundh, L. G., & Viborg, G. (2011). Cognitive reappraisal and acceptance: An experimental comparison of two emotion regulation strategies. *Behaviour Research and Therapy, 49*, 858-866.
- Wrosch, C., Bauer, I., & Scheier, M. F. (2005). Regret and quality of life across the adult life span: The influence of disengagement and available future goals. *Psychology and Aging, 20*, 657-670.