



## Self-compassion promotes positive adjustment for people who attribute responsibility of a romantic breakup to themselves

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### ABSTRACT

Attributing responsibility for a romantic breakup to the self can have dual effects on psychological adjustment, exacerbating disruptive thoughts and feelings, yet also increasing the likelihood of positive changes. Three studies ( $N = 441$ ) examined whether these dual effects associated with attributing responsibility for a romantic breakup to the self are moderated by self-compassion. Supporting this assertion, trait self-compassion predicted better romantic outlook (Studies 1 & 2), and induced self-compassion predicted greater intended future romantic partner appreciation (Study 3), among people who attributed greater responsibility of a breakup to themselves. In addition, higher trait (Study 2) and induced self-compassion (Study 3) boosted self-improvement motivation with regard to future relationships among participants who attributed responsibility of a romantic breakup to themselves. These adjustment-promoting tendencies associated with self-compassion held controlling for a range of variables known to impact romantic breakup adjustment (e.g., self-esteem, attachment styles, and prior relationship characteristics). We discuss possible mechanisms for these effects and broader implications for future self-compassion research.

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You must take personal responsibility. You cannot change the circumstances, the seasons, or the wind, but you can change yourself. That is something you have charge of.

– Jim Rohn

You have to patiently learn to live together with your shadow. And carefully observe the darkness that resides within you. Sometimes in a dark tunnel you have to confront your own dark side.

– Haruki Murakami, in his acceptance speech for the Hans Christian Andersen Literary Award

The phrase “happily ever after” is often used to describe the fate of romantic unions in fairy tales. In real life, though, the notion that romantic relationships lead to everlasting happiness is often misleading (Battaglia, Richard, Datteri, & Lord, 1998). Romantic breakups are common and they often come with a plethora of detrimental outcomes. For example, romantic breakups are linked to a wide range of negative affective consequences (e.g., anger, frustration; Frazier & Cook, 1993). In fact, people often identify a romantic breakup as one of life’s most stressful

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events (Kendler, Hettema, Butera, Gardner, & Prescott, 2003). Among adolescents and young adults, romantic breakups are strong predictors of major depression (Monroe, Rohde, Seeley, & Lewinsohn, 1999), and in a large sample of adults across the United States, romantic breakups predicted greater anxiety, social dysfunction, and psychological distress (Rhoades, Kamp Dush, Atkins, Stanley, & Markman, 2011). Specifically, research suggests that romantic breakups take an especially difficult psychological toll among individuals who believe that they are responsible for their breakup. For instance, people who took greater relative to those who took less responsibility for a breakup reported more disruptive thoughts about the breakup (Chung et al., 2003). Another study showed that people who believed they were responsible for a breakup reported greater grief over the breakup (e.g., *I feel I have trouble accepting that this relationship is over*), depressive symptoms, and anxiety relative to those who felt less responsible (Boelen & Reijntjes, 2009). As a final example, people who viewed their own problems as a major reason for their breakup reported more obsessive pursuit of their ex-partner (e.g., internet stalking, taking the partner to some place against his/her will; Park, Sanchez, & Brynildsen, 2011).

Interestingly, however, although people who attribute responsibility to themselves for a romantic breakup often endure more emotional suffering, they are also more apt to report experiencing personal growth as a result of a romantic breakup. Along these lines, researchers have argued that stress-related growth may be especially likely to occur when individuals attribute responsibility for a stressful life event to themselves (Linley & Joseph, 2004). Theories of attribution suggest that attributing causality to the self can breed positive adjustment because such attributions promote a sense of control, the sense that one has the ability to change and to prevent the same negative event from arising again in the future (Janoff-Bulman, 1979; Wong & Weiner, 1981). Supporting the viewpoint that taking responsibility for a negative event may promote adjustment specifically in the realm of romantic breakups, Gray and Silver (1990) found that people who felt responsible for a breakup reported less continued regret over the breakup (e.g., *I will never get over the breakup*) and fewer preoccupied thoughts about the breakup (e.g., *unable to get thoughts out or memories out of your mind*), relative to those who felt less responsible. Further, Buck (2011) found that individuals who attributed more, compared to less responsibility, of a breakup to themselves reported more personal growth.

In short, greater attribution of responsibility for a romantic breakup to the self can have dual effects on psychological adjustment, exacerbating disruptive thoughts and feelings, yet also increasing the likelihood of positive changes. In the current research, we examined whether these dual effects associated with attributing responsibility for a romantic breakup to the self are moderated by self-compassion (Neff, 2003).

### **Romantic relationship adjustment outcomes: Romantic outlook, self-improvement motivation, and intended future partner appreciation**

We focused on three adjustment-related outcomes: (1) individuals' poor romantic outlook (Davis, Shaver, & Vernon, 2003); (2) self-improvement motivation with regard to future romantic relationships (Breines & Chen, 2012); and (3) intended future partner appreciation (Gordon, Impett, Kogan, Oveis, & Keltner, 2012).

Research suggests that one factor that prevents people from adjusting to romantic breakup is having a poor romantic outlook (Davis et al., 2003). That is, the ability to perceive that one is able to find new romantic relationships post breakup is an adaptive part of the recovery process. For instance, people who thought that they were unlikely to enter a new relationship

after a breakup made especially poor estimation of their emotional reaction to a breakup (Eastwick, Finkel, Krishnamurti, & Loewenstein, 2008). Moreover, people who had a greater inclination to find new partners since the breakup reported heightened personal growth compared to people who didn't believe they will enter into new relationships (Marshall, Bejanyan, & Ferenczi, 2013). Anxious people who were led to imagine others in their social network who are single and who they would be willing to date were more likely to report reduced emotional attachment to the ex-partner (Spielmann, MacDonald, & Wilson, 2009).

Research suggests that having a positive attitude and the intention to improve the self is central to recovering from difficult life events (Sedikides & Hepper, 2009; Tashiro & Frazier, 2003; Tedeschi & Calhoun, 1996; Tedeschi, Tedeschi, Park, & Calhoun, 1998). For instance, in one study, romantic partners' supportive actions for participants' self-improvement efforts predicted participants' perception of partners as more helpful, which in turn predicted greater relationship satisfaction and increased self-improvement success among participants (Overall, Fletcher, & Simpson, 2010). A follow-up study by these same authors showed that romantic partners' supportive actions for participants' self-improvement efforts during an in-lab discussion of self-improvement goals predicted enhanced relationship quality over a 12-month period (Overall et al., 2010). Other research has shown that changes in self-concept improvement (e.g., *I have added positive qualities to my sense of self*) predicted more love, relationship quality, and reduced infidelity (Mattingly, Lewandowski, & McIntyre, 2014).

Lastly, recent studies have shown that a sense of appreciation between romantic partners is an important factor for enhancing intimate bonds. For instance, people who appreciate their partners are more responsive to their partner's needs and are more likely to remain in the relationship 9 months later (Gordon et al., 2012). Another study by these authors demonstrated that people transmit their appreciation to their partners via non-verbal displays of responsiveness and commitment during laboratory dyadic interactions (Gordon et al., 2012). In other words, people feel more appreciative toward partners who they perceive to be more invested into their relationship which, in turn, enhances relationship commitment and longevity (Joel, Gordon, Impett, MacDonald, & Keltner, 2013).

Together, we propose that self-compassion promotes adjustment to romantic breakups among people who attribute responsibility to themselves by reducing their poor romantic outlook and enhancing their tendency to self-improvement, as well as intended partner appreciation. That is, self-compassion may both buffer against some of the negative effects, and promote some of the positive effects, of romantic breakups among those who attribute responsibility to themselves.

### **Self-compassion reduces suffering and promotes positive adjustment**

Self-compassion is rooted in sympathy extended towards the self when an individual is faced with a mistake or failure. According to Neff (2011), self-compassion has three interrelated components: (1) self-kindness, a tendency to apply a caring and tender, rather than judgmental, attitude towards one's personal failures; (2) common humanity, the recognition that it is only "human" to make mistakes and that one's suffering is shared by others; and (3) mindfulness, or taking a balanced approach toward one's failure and observing one's pain with an open mind set.

Research shows that self-compassion predicts less suffering in the face of difficult experiences. For example, people who experienced an increase in self-compassion after an intervention

reported lower levels of self-criticism, anxiety, and rumination related to their personal weaknesses (Neff, Kirkpatrick, & Rude, 2007). In the domain of body image and weight concerns, research has shown that self-compassion predicts less anticipated disordered eating (Breines, Toole, Tu, & Chen, 2013), and mediates the relationship between body disturbance and greater distress (Przedziecki et al., 2013). With regard to romantic relationships, Neff and Beretvas (2013) found that couples who are more self-compassionate report higher relational well-being (e.g., greater care and connectedness in their relationships) compared to less self-compassionate couples. Particularly relevant to the present research, recent work found that participants 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).

Self-compassion has also been linked to personal growth and other improvement-oriented responses, such as enhanced motivation to make constructive changes in response to a negative personal event. For example, trait self-compassion predicted greater positive re-interpretation and growth among a group of students who were highly dissatisfied with their exam grade (Neff, Hsieh, & Dejitterat, 2005). Other work demonstrated that people who were induced to feel self-compassion were more likely to report that their personal shortcomings can be changed compared to control participants (Breines & Chen, 2012). In a follow-up study, these researchers showed that people who were induced to feel self-compassion after they were reminded of a past transgression reported being more willing to make amends and to avoid the same transgression in the future compared to control participants. More recently, people who were led to think about a prior regret experience with self-compassion, compared to self-esteem, were more likely to report greater personal improvement, in part, because they accepted their regrets have happened (Zhang & Chen, 2016). In other work, older adults with walking difficulty were more willing to use a walker if they were higher, compared to lower, in trait self-compassion (Allen, Goldwasser, & Leary, 2012). In the romantic relationship domain, self-compassion predicted a greater desire to correct interpersonal mistakes and problem-solving behaviors at least among women and highly conscientious men (Baker & McNulty, 2011).

In short, mounting evidence indicates that self-compassion can both buffer people against the adverse consequences associated with difficult life experiences, and foster positive responses to such experiences, such as improvement-oriented intentions. Guided by such findings, we hypothesized that self-compassion likely promotes positive adjustment to romantic breakups among people who attribute responsibility of a romantic breakup to themselves. More specifically, in light of theory and research suggesting that attributions of responsibility to the self for a negative personal event can exacerbate both negative and positive consequences, we reasoned that self-compassion may both buffer the negative, and facilitate the positive, consequences associated with viewing the self as responsible for a romantic breakup.

### **Self-esteem as an alternative hypothesis**

Researchers have criticized that self-compassion is simply a variant of self-esteem because they are both grounded in the encouragement of self-worth (Neff, 2003). Moreover, research suggests that self-esteem is associated with positive responses to romantic breakup (Marshall, 2012; Miller, 2009; Waller & MacDonald, 2010). This raises the possibility that the hypothesized moderating effects of self-compassion can be explained by self-esteem. However, it is important to note that self-esteem and self-compassion are distinct in how each creates a sense of

self-worth. For example, self-esteem involves the evaluation of ourselves in relation to others. That is, self-esteem helps people develop a sense of self-worth through judgments of ourselves as better than others (Baumeister, 1998; Neff, 2011). In contrast, self-compassion does not involve evaluation and judgment of ourselves or others. Instead, self-compassion creates a sense of self-worth by leading people to genuinely care about their well-being (Neff, 2011).

Although self-compassion is conceptually distinct from self-esteem, there is some empirical overlap. For example, research has documented moderate to strong positive correlations ( $r_s \geq .40$ ; Neff, 2003; Neff & Vonk, 2009). Yet, mounting empirical evidence suggests independence and important differences between the two constructs. For instance, self-esteem, but not self-compassion, is positively associated with narcissism (Neff, 2003; Neff & Vonk, 2009). Self-compassion, but not self-esteem, predicts less anxiety after talking about a personal weakness (Neff, Kirkpatrick, et al., 2007). Both self-compassion and self-esteem correlate negatively with rumination and public self-consciousness, but when controlling for each other, only self-compassion remains as a predictor (Neff & Vonk, 2009). Similarly, both self-compassion and self-esteem predict less negative affect in response to a hypothetical personal failure (e.g., getting a poor test grade), but when controlling for each other, only self-compassion remains as a predictor (Leary, Tate, Adams, Batts Allen, & Hancock, 2007). Despite the growing evidence for the distinction between self-esteem and self-compassion, we assessed self-esteem in all of our studies in order to directly address self-esteem as an alternative explanation.

## The current research

In Study 1, we examined whether trait self-compassion would buffer the negative effects of romantic breakup on romantic outlook (Davis et al., 2003), particularly among individuals who attribute responsibility of a romantic breakup to themselves. Study 2 aimed to replicate Study 1's romantic outlook findings and to test whether trait self-compassion is linked to self-improvement inclinations (Breines & Chen, 2012) among individuals who attribute responsibility of a breakup to themselves. Finally, Study 3 sought to extend the previous studies by taking an experimental approach and by examining future romantic partner appreciation as an outcome (Gordon et al., 2012). More specifically, Study 3 participants were instructed to respond to a breakup from a self-compassionate perspective, from a self-esteem-bolstering perspective, or were not given any instructions, and then completed a series of dependent measures. We hypothesized that induced self-compassion would enhance self-improvement motivation and intended future partner appreciation among participants who attribute responsibility for a breakup to themselves. Finally, some research suggests that relationship characteristics (e.g., relationship satisfaction; Tashiro & Frazier, 2003) and attachment styles (e.g., Simpson, 1990) may shape romantic breakup adjustment. Thus, across studies, we controlled for various relationship characteristics (e.g., length, relationship satisfaction) and attachment styles, along with various demographics, so as to isolate the unique influence of self-compassion.

## Study 1: Trait self-compassion buffers against poor romantic outlook

Study 1 examined whether trait self-compassion promotes positive adjustment to romantic breakups in the form of reducing poor romantic outlook among people who attribute greater responsibility of a breakup to themselves. We expected attributions of responsibility to the

self to predict poorer romantic outlook among individuals relatively low in self-compassion, but that this relationship would be diminished among individuals higher in trait self-compassion. We conducted a power analysis to estimate an adequate sample size for this hypothesized interaction between attribution of responsibility to the self and self-compassion. We based our power analysis on a previous study that examined self-compassion and romantic breakup adjustment, which had a sample size of 105 (Sbarra et al., 2012). Because no effect size was reported in this study, we calculated the minimum sample size required for the addition of an interaction term over the main effects model using a conservative, small estimated effect (anticipated Cohen's  $f^2 = .06$ ), a power level of .80, and an alpha level of .05. Using an online calculator (<http://danielsoper.com/statcalc3/calc.aspx?id=16>), we determined that we would have adequate power to detect a significant interaction with approximately 132 participants (the sample size we collected in Study 2 was also based on this calculation). Lastly, we measured demographic variables (i.e., age and gender), relationship characteristics associated with the breakup (i.e., length of relationship, time since breakup, and relationship satisfaction), and self-esteem.

## Method

### Participants

Participants were 179 adults recruited from Amazon's Mechanical Turk (Mturk; see Buhrmester, Kwang, & Gosling, 2011 on the validity of recruiting from Mturk) for a nominal compensation. Thirty-one people were excluded because they did not complete anything or did not complete one or more of our study variables. Thus, the focal analyses included 148 adults ( $M_{\text{age}} = 34.00$ ,  $SD = 13.00$ , range 18–72; 62.8% female; 77% Caucasian).

### Procedure

Participants accessed the study through an online server, provided informed consent, and filled out trait measures of self-compassion and self-esteem. Afterward, they were instructed to recall and describe a past romantic breakup without any temporal restrictions. Then, they completed questions that assessed their attribution of responsibility for their breakup, romantic outlook, and relationship characteristics. Finally, participants completed a demographic questionnaire, were debriefed, and thanked for their participation.

## Measures

### Trait self-compassion

Participants completed the 26-item Self-Compassion Scale (SCS; see Neff, 2003 for the complete measure) by indicating their agreement on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*) to statements that assess three positive components (self-kindness, common humanity, and mindfulness) and three negative components (self-judgment, isolation, and over-identification) of self-compassion. Following past research that used the SCS (Leary et al., 2007), we reverse-coded ratings on the negative subscales and averaged them with ratings on the positive subscales to create a composite self-compassion score ( $M = 4.21$ ,  $SD = 1.13$ ,  $\alpha = .90$ ).

### 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*;  $M = 5.12$ ,  $SD = 1.43$ ,  $\alpha = .95$ ).

### Attribution of responsibility

To measure participants' attribution of responsibility for their breakup, we administered six items that we adapted from previous research (Davis et al., 2003). Two items measured attribution of the breakup to the partner (e.g., *I felt like the breakup was my partner's fault*), and four items measured attribution of the breakup to the self (e.g., *I felt like the breakup was my fault*). Participants responded to the items using a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*). The two partner items were reverse-coded and averaged with the self items, such that higher scores meant greater attribution of responsibility to the self ( $M = 3.77$ ,  $SD = 1.41$ ,  $\alpha = .76$ ).

### Romantic outlook

To measure participants' romantic outlook, we administered six items (four reverse-coded) that we adapted from previous research (e.g., *I felt sick at the thought of trying to find a new relationship, I looked forward to dating new people*; Davis et al., 2003). Participants responded to the items using a 7-point scale (1 = *strongly disagree*; 7 = *strongly agree*). The four reverse-coded items were recoded and averaged with the two other items, such that lower scores meant poorer romantic outlook ( $M = 4.00$ ,  $SD = 1.70$ ,  $\alpha = .88$ ).

### Relationship characteristics

Participants indicated length of their prior relationship ( $M_{\text{days}} = 1182$ ,  $SD = 1646$ ), time since breakup ( $M_{\text{days}} = 2345$ ,  $SD = 2726$ ), and a standard five-item relationship satisfaction measure from 1 (*strongly disagree*) to 7 (*strongly agree*;  $M = 3.85$ ,  $SD = 1.74$ ,  $\alpha = .95$ ; Rusbult, Martz, & Agnew, 1998) that referred to their satisfaction with the relationship before it ended.

## Results and brief discussion

Table 1 shows the correlations among all the variables in this study. We standardized all variables and multiplied trait self-compassion and attribution of responsibility scores to create

**Table 1.** Zero order correlations: demographics, relationship characteristics, self-compassion, self-esteem, attributing responsibility, and romantic outlook in Study 1.

Variables	1	2	3	4	5	6	7	8	9
1. Age	–								
2. Gender	.11	–							
3. Prior relationship length	.39*	.28*	–						
4. Time since breakup	.51*	.03	.06	–					
5. Prior relationship satisfaction	.12	–.07	.06	.01	–				
6. Self-compassion	.38*	–.04	.25*	.12	.07	–			
7. Self esteem	.33*	.05	.25*	.09	.08	.76*	–		
8. Attributing responsibility	–.09	–.11	–.05	–.01	.35*	–.33*	–.32*	–	
9. Romantic outlook	.01	–.02	–.07	–.03	–.48*	.36*	.33*	–.56*	–

Note: Gender (1 = Male; 2 = Female).

\* $p < .05$ .

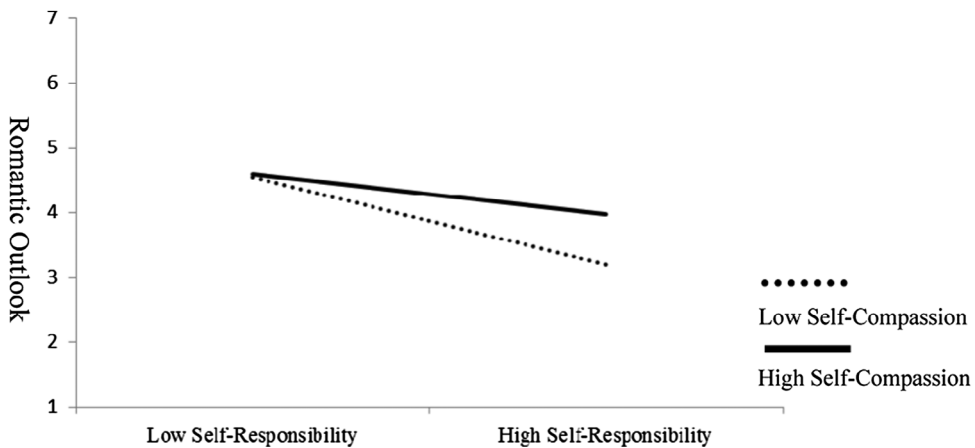
an interaction term. Then, romantic outlook was regressed onto trait self-compassion, attributions of responsibility, and their interaction. Trait self-compassion predicted better romantic outlook ( $b = .20, p = .004, r = .24, 95\% \text{ CI} [.11, .57]$ ). Attributing responsibility of the breakup to the self predicted poorer romantic outlook ( $b = -.49, p < .001, r = .50, 95\% \text{ CI} [-1.05, -.59]$ ). However, these effects were qualified by an interaction ( $b = .18, p = .007, r = .22, 95\% \text{ CI} [.08, .50]$ <sup>1,2,3,4</sup>); the interaction was also significant after controlling for age, gender, relationship characteristics, and self-esteem,  $b = .18, p = .003, r = .24, 95\% \text{ CI} [.10, .48]$ ; see Table 2). We probed this interaction at one standard deviation above and below the mean on self-compassion and attribution of responsibility (Aiken & West, 1991). Among participants who were lower on trait self-compassion, attributions of responsibility to the self were associated with poorer romantic outlook ( $b = -.67, p < .001, r = .52, 95\% \text{ CI} [-1.41, -.81]$ ; see Figure 1). As anticipated, this relationship was reduced among people higher in trait self-compassion ( $b = -.32, p = .001, r = .26, 95\% \text{ CI} [-.86, -.21]$ ). Put differently, the difference in the romantic outlook between people relatively high vs. low in trait self-compassion was significant for people who saw themselves as relatively high in responsibility for their breakup ( $b = .37, p < .001, r = .30, 95\% \text{ CI} [.31, .95]$ ), but not among those relatively low in responsibility

**Table 2.** Hierarchical regression predicting romantic outlook in Study 1.

IVs	Romantic outlook				
	<i>B</i>	SE	$\beta$	95% CI lower	95% CI upper
Age	-.01	.01	-.01	-.02	.02
Gender	-.18	.22	-.05	-.61	.25
Prior relationship length	-.23*	.11	-.13	-.45	-.002
Time since breakup	-.10	.12	-.06	-.33	.13
Prior relationship satisfaction	-.65*	.11	-.39*	-.87	-.44
Self-esteem	.23	.15	.14	-.07	.53
Attributing responsibility	-.53*	.11	-.32	-.76	-.31
Self-compassion	.38*	.16	.23	.07	.69
Attributing responsibility x self-compassion	.29*	.10	.18	.10	.48

Note: The interaction was also significant without the covariates,  $b = .18, p = .007, 95\% \text{ CI} [.08, .50]$ .

\* $p < .05$ .



**Figure 1.** Attributing responsibility by self-compassion interaction from Study 1 predicting romantic outlook.



attributions to the self ( $b = .03, p = .74, r = .03, 95\% \text{ CI}[-.25, .35]$ ). A separate analysis showed that self-esteem was not a significant moderator of the association between attributions of responsibility to the self and romantic outlook ( $b = .08, p = .20, 95\% \text{ CI}[-.08, .36]$ ).

In sum, Study 1 showed that self-compassionate people who attributed responsibility for a breakup to themselves reported better romantic outlook than their less self-compassionate counterparts. Self-esteem did not show a similar moderating effect. Also, self-compassion's role in promoting positive adjustment to a romantic breakup among people who attributed responsibility to themselves was not affected by demographics and relationship characteristics.

## Study 2: Trait self-compassion promotes self-improvement motivation

The first aim of Study 2 was to replicate the buffering effect of trait self-compassion on romantic outlook among people who attribute responsibility to themselves found in Study 1. The second aim was to test whether trait self-compassion may promote self-improvement motivation with regard to future relationships among people who attribute responsibility of a breakup to themselves. Finally, given that attachment style has been shown to predict responses to romantic breakups (e.g., Sbarra & Emery, 2005; Simpson, 1990), we included a measure of attachment style (Wei, Russell, Mallinckrodt, & Vogel, 2007), in addition to measures of demographics, relationship characteristics, and self-esteem, to use as covariates in our main analyses.

### Method

#### Participants and procedure

Participants were 199 adults recruited via Mturk for nominal compensation. Forty-six people were excluded because they did not complete anything or did not complete one or more of our study variables. Thus, the focal analyses included 153 adults ( $M_{\text{age}} = 32.67, SD = 10.55$ , range 18–65; 49% female; 76% Caucasian). The procedure for this study was the same as Study 1.

### Measures

#### Trait self-compassion

As in Study 1, participants completed the SCS (Neff, 2003;  $M = 4.00, SD = 1.10, \alpha = .91$ ).

#### Trait self-esteem

As in Study 1, the Rosenberg (1965) self-esteem inventory was administered ( $M = 4.95, SD = 1.40, \alpha = .94$ ).

#### Attachment styles

To measure attachment styles, participants responded to the 12-item Experience in Close Relationship Scale (Wei et al., 2007) using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. Six items measured attachment anxiety (e.g., *I worry that romantic partners won't care about me as much as I care about them*;  $M = 3.57, SD = 1.30, \alpha = .71$ ) and six items measured attachment avoidance (e.g., *I try to avoid getting too close to my partner*;  $M = 2.74, SD = 1.23, \alpha = .68$ ).

### *Attribution of responsibility*

The same six-item measure used in Study 1 was administered to measure attribution of responsibility to the self for the breakup ( $M = 3.60$ ,  $SD = 1.39$ ,  $\alpha = .76$ ).

### *Romantic outlook*

The same six-item measure used in Study 1 was administered to measure romantic outlook ( $M = 4.29$ ,  $SD = 1.60$ ,  $\alpha = .86$ ).

### *Self-improvement motivation*

To measure self-improvement motivation, we administered 14 items (see Appendix 1) that we adapted from Breines and Chen (2012). The items assessed people's motivation for self-improvement with regard to future relationships, including self-focused items tapping the likelihood of changing one's own behavior (e.g., *I would try to find opportunities that would challenge me and help me grow as a romantic partner*), as well as partner-focused items tapping the inclination to make better partner choices (e.g., *I would like to get to know more about the other person before I get into a serious relationship*). Participants responded using a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. The partner-focused items were reverse-coded and averaged with the self-focused items, such that higher scores reflected greater self-improvement motivation ( $M = 3.87$ ,  $SD = 0.71$ ,  $\alpha = .69$ ). We performed an exploratory factor analysis (Principal Component extraction) with varimax rotation to ensure that the 14 items we used belong together. A one-factor solution was suggested by the scree test (Cattell, 1966). This factor accounted for 35% of the variance. The mean loading for the items was .57. Finally, to test whether our a priori self-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 .70 with the corresponding factor scores. In short, our a priori scale captured a significant amount of variance in the empirically determined factor. This suggests that the items we used to capture self-improvement are captured by one underlying self-improvement factor.

### *Relationship characteristics*

As in Study 1, participants completed a series of questions about their relationship and breakup: length of the prior relationship ( $M_{\text{days}} = 869$ ,  $SD = 1353$ ), time since breakup ( $M_{\text{days}} = 2,065$ ,  $SD = 2,330$ ), relationship satisfaction while the relationship was intact ( $M = 3.70$ ,  $SD = 1.75$ ,  $\alpha = .95$ ; Rusbult et al., 1998), and whether they were currently in a relationship (Yes = 98, No = 54).

### *Results and brief discussion*

Table 3 shows the correlations among all the variables in this study. We coded current relationship status (No = 0, Yes = 1) and standardized all other variables. We formed the interaction term by multiplying trait self-compassion scores with attribution of responsibility to the self scores and then entered all variables into two separate multiple regression models predicting romantic outlook and self-improvement motivation.

**Table 3.** Zero order correlations: demographics, relationship characteristics, self-compassion, self-esteem, attributing responsibility, romantic outlook, and self-improvement motivation in Study 2.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	—												
2. Gender	-.06	—											
3. Currently in relationship	-.06	-.26*	—										
4. Time since breakup	.45*	.05	-.25*	—									
5. Prior relationship length	.33*	.03	.10	-.11	—								
6. Prior relationship satisfaction	-.03	-.18*	.10	-.03	.12	—							
7. Anxiety	-.17*	.01	.16	-.18*	-.09	-.02	—						
8. Avoidance	-.20*	-.16	.34*	-.28*	-.09	.18*	.34*	—					
9. Self-compassion	.14	-.14	-.04	.09	.09	.12	-.58*	-.32*	—				
10. Self esteem	.17*	-.08	-.09	.14	.06	.01	-.53*	-.43*	.75*	—			
11. Attributing responsibility	-.14	-.05	-.04	-.09	.04	.34*	.12	.28*	-.27*	-.27*	—		
12. Romantic outlook	.03	-.01	-.12	-.01	.03	-.48*	-.33*	-.28*	.34*	.32*	-.43*	—	
13. Self-improvement motivation	-.27*	-.05	-.02	-.22*	-.01	.17*	.17*	-.01	-.01	-.08	.37*	-.03	—

Note: Gender (1 = Male; 2 = Female). Currently in a relationship (1 = Yes, 2 = No).

\* $p < .05$ .

### Romantic outlook

We found that trait self-compassion predicted better romantic outlook ( $b = .23, p = .002, r = .25, 95\% \text{ CI} [.14, .60]$ ), and attributing greater responsibility to the self predicted poorer romantic outlook ( $b = -.34, p < .001, r = .34, 95\% \text{ CI} [-.78, -.30]$ ). Most importantly, we observed a significant interaction between trait self-compassion and attributing responsibility to the self ( $b = .15, p = .041, r = .16, 95\% \text{ CI} [.008, .38]$ ); the interaction was also significant after controlling for age, gender, attachment styles, relationship characteristics, and self-esteem,  $b = .18, p = .01, r = .22, 95\% \text{ CI} [.07, .40]$ ; see Table 4). We probed this interaction at one standard deviation above and below the mean on self-compassion and attribution of responsibility (Aiken & West, 1991). Among participants who were lower on trait self-compassion, attributions of responsibility to the self were associated with poorer romantic outlook ( $b = -.46, p < .001, r = .39, 95\% \text{ CI} [-1.01, -.47]$ ; see Figure 2). As in Study 1, however, this negative relationship was reduced among people higher in trait self-compassion ( $b = -.21, p = .04, r = .16, 95\% \text{ CI} [-.67, -.01]$ ). Put differently, the difference between high and less self-compassionate people who attributed greater responsibility to themselves was significant ( $b = .35, p < .001, r = .29, 95\% \text{ CI} [.27, .85]$ ), whereas there was no effect of self-compassion among participants who tended not to attribute their romantic breakup to themselves ( $b = .10, p = .26, r = .09, 95\% \text{ CI} [-.13, .48]$ ). A separate analysis showed that self-esteem was not a significant moderator of the relationship between attribution of responsibility to the self and romantic outlook ( $b = .14, p = .052, 95\% \text{ CI} [-.44, .002]$ ).

### Self-improvement motivation

Trait self-compassion did not predict self-improvement motivation ( $b = .09, p = .27, r = .09, 95\% \text{ CI} [-.05, .17]$ ), and attributing responsibility to the self predicted more self-improvement motivation ( $b = .43, p < .001, r = .40, 95\% \text{ CI} [.20, .41]$ ). However, these effects were qualified by the hypothesized interaction between trait self-compassion and attributing responsibility to the self ( $b = .17, p = .027, r = .18, 95\% \text{ CI} [.011, .19]$ ); the interaction was also significant after controlling for age, gender, attachment styles, relationship characteristics, and self-esteem,  $b = .16, p = .033, r = .17, 95\% \text{ CI} [.01, .18]$ ; see Table 4). We probed this interaction at one standard deviation above and below the mean on self-compassion and attribution of responsibility (Aiken & West, 1991). Among participants who were lower on trait self-compassion, attributions of responsibility to the self predicted greater self-improvement motivation ( $b = .29, p < .001, r = .25, 95\% \text{ CI} [.08, .33]$ ; see Figure 3). However, this relationship was stronger among people higher in trait self-compassion ( $b = .57, p < .001, r = .38, 95\% \text{ CI} [.25, .56]$ ). Put differently, the difference between people relatively higher vs. lower on trait self-compassion was significant among those who attributed responsibility to themselves ( $b = .23, p = .023, r = .18, 95\% \text{ CI} [.023, .29]$ ), but not among those who tended not to make such self attributions of responsibility ( $b = -.05, p = .59, r = .04, 95\% \text{ CI} [-.18, .10]$ ). A separate analysis showed that self-esteem did not have a parallel moderating effect ( $b = .13, p = .09, 95\% \text{ CI} [-.01, .20]$ ).

In sum, Study 2 showed that self-compassionate people who attributed responsibility for a breakup to themselves exhibited less decline in their romantic outlook than their less self-compassionate counterparts, replicating Study 1's buffering finding. Extending Studies 1, 2 also showed that self-compassionate people who attributed responsibility for a breakup to themselves reported greater self-improvement motivation with regard to future romantic relationships relative to their less self-compassionate counterparts. Self-esteem did not show

**Table 4.** Hierarchical regressions predicting romantic outlook and self-improvement motivation in Study 2.

IVs	Romantic outlook					Self-improvement motivation				
	B	SE	$\beta$	95% CI lower	95% CI upper	B	SE	$\beta$	95% CI lower	95% CI upper
Age	-.01	.01	-.09	-.04	.01	-.01	.01	-.18	-.02	.01
Gender	-.29	.21	-.09	-.71	.13	-.05	.11	-.04	-.27	.17
Currently in relationship	-.34	.23	-.10	-.80	.12	-.04	.12	-.03	-.28	.20
Time since breakup	-.15	.12	-.09	-.39	.09	-.11	.06	-.15	-.23	.02
Prior relationship length	.10	.11	.06	-.13	.32	-.01	.06	-.02	-.13	.10
Prior relationship satisfaction	-.73*	.11	-.46	-.95	-.52	.03	.06	.04	-.09	.14
Anxiety	-.34*	.13	-.21	-.58	-.09	.16*	.07	.23	.04	.29
Avoidance	-.03	.13	-.02	-.27	.22	-.17*	.06	-.24	-.30	-.05
Self-esteem	-.03	.16	-.02	-.34	.28	-.08	.08	-.11	-.24	.08
Attributing responsibility	-.30*	.12	-.19	-.53	-.07	.31*	.06	.43	.19	.43
Self-compassion	.34*	.16	.21	.01	.66	.18*	.09	.26	.01	.35
Attributing responsibility* self-compassion	.24*	.08	.18	.07	.40	.10*	.04	.16	.01	.18

Note: The attributing responsibility\* self-compassion predicting romantic outlook and self-improvement motivation were significant without the covariates ( $b = .15, p = .041, 95\% \text{ CI} [.008, .39]$  &  $b = .17, p = .027, 95\% \text{ CI} [.011, .19]$ ), respectively.  
 \* $p < .05$ .

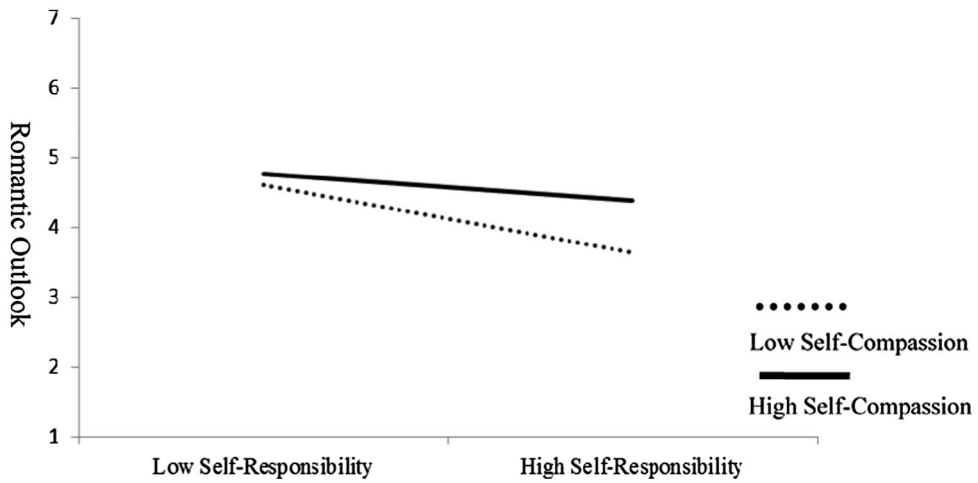


Figure 2. Attributing responsibility by self-compassion interaction from Study 2 predicting romantic outlook.

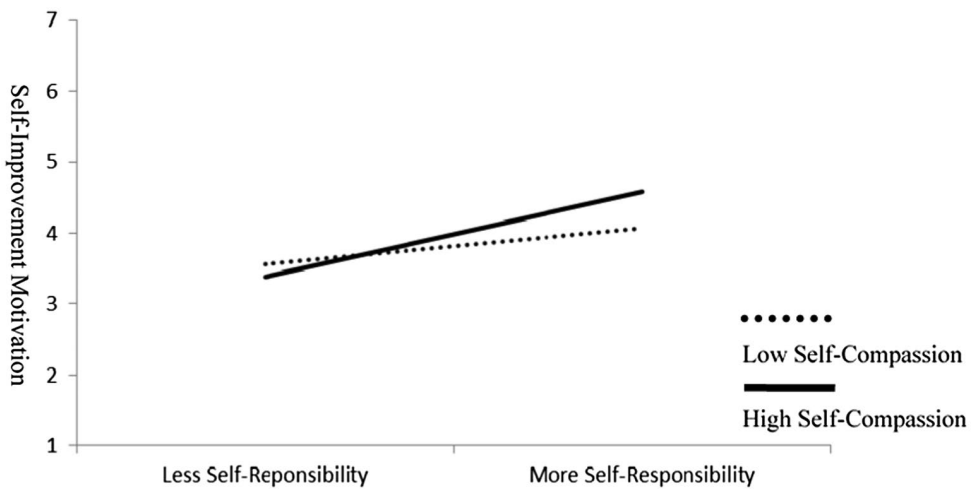


Figure 3. Attributing responsibility by self-compassion interaction from Study 2 predicting self-improvement motivation.

these same moderating effects. Lastly, these findings were not affected by demographics, relationship characteristics, or attachment style.

### Study 3: Induced self-compassion promotes self-improvement motivation and intended future partner appreciation

The first goal of Study 3 was to bolster Study 2's self-improvement findings with experimental evidence. Specifically, Study 3 participants were instructed to respond to a romantic breakup from a self-compassionate perspective, from a perspective of validating their positive

qualities (Breines & Chen, 2012; Leary et al., 2007), or did not receive any instructions, after which they completed the dependent measures. Our second goal was to measure participants' inclination to show appreciation for future romantic partners (Gordon et al., 2012). Research has shown that when people feel a sense of appreciation for their romantic partner, they feel more satisfied and committed to their relationship (Gordon et al., 2012; Joel et al., 2013). Thus, like self-improvement motivation with regard to future relationships, intended future partner appreciation reflects an adaptive, relationship-promoting response to a romantic breakup. We aimed for the minimum per-condition sample size of 20 as outlined by Simmons, Nelson, and Simonsohn (2011). More specifically, we aimed to recruit at least 120 people across this study's six conditions (i.e., high vs. low on attributing responsibility  $\times$  three conditions [self-compassion, self-esteem, & control]).

## Method

### Participants

The study was posted on the online recruitment website for the duration of the semester. At the end of the semester, we were able to recruit a total of 140 students ( $M_{\text{age}} = 21.30$ ,  $SD = 4.10$ , range 18–49; 74% female; 21% Caucasian) from a large public university on the west coast of the United States who participated in exchange for course credit.

### Procedure

Participants arrived at the laboratory and were seated in front of a computer. They accessed the study through an online server on the computer, provided informed consent, completed a measure of attachment style, and then were instructed to recall and describe a past romantic breakup without temporal restrictions. Afterward, they attributed responsibility for the breakup. Then, participants were randomly assigned to one of three conditions. In the self-compassion condition, participants were asked to respond to the following prompt: *Imagine that you are talking to yourself about this breakup 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 breakup from a perspective of validating your positive (rather than negative) qualities.* These experimental instructions were adapted from Breines and Chen (2012) and Leary et al. (2007). In the control condition, participants did not receive any reflection instructions. Following the manipulation, participants indicated their current feelings of self-compassion as a manipulation check (Breines & Chen, 2012), and completed measures of self-improvement motivation and future romantic partner appreciation (Gordon et al., 2012). Finally, participants completed items assessing demographics and relationship characteristics, and then were debriefed and thanked for their participation.

## Measures

### Attachment styles

As in Study 2, participants completed the Experience of Close Relationship scale (Wei et al., 2007;  $M_{\text{Anxiety}} = 3.80$ ,  $SD = 1.30$ ,  $\alpha = .53$ ;  $M_{\text{Avoidance}} = 2.80$ ,  $SD = 1.06$ ,  $\alpha = .67$ ).

### **Attribution of responsibility**

To increase generalizability, we used a different measure of attribution of responsibility from the one used in Studies 1 and 2. Adapted from prior research (Sprecher, 1994), the three-item measure assessed attribution of responsibility on a continuum (*I believe the person that is mainly accountable for the eventual break up of this relationship was...*; *In general, I consider this break up to be...* and *Some people think their partner should be blamed for the break up, whereas others think they should be blamed for the breakup... I feel that this break up is...*). Participants responded using a 7-point scale ranging from 1 (*my partner's responsibility*) to 7 (*my responsibility*;  $M = 4.10$ ,  $SD = 1.45$ ,  $\alpha = .87$ ).

### **Manipulation check**

Participants completed a three-item measure adapted from Neff (2003) that assessed state self-compassion using a 1 (*not at all*) to 7 (*a lot; I am being understanding toward myself; I am treating myself with caring and kindness; I am trying to take a balanced view of things*) scale ( $M = 5.60$ ,  $SD = 0.99$ ,  $\alpha = .79$ ).

### **Self-improvement motivation**

Participants completed the same 14-item measure that was used in Study 2 to assess self-improvement motivation with regard to future romantic relationships ( $M = 4.25$ ,  $SD = 0.57$ ,  $\alpha = .73$ ). We performed an exploratory factor analysis (Principal Component extraction) with varimax rotation to ensure that the 14 items we used belong together. A one-factor solution was suggested by the scree test (Cattell, Balcar, Horn, & Nesselroade, 1969). This factor accounted for 40% of the variance. The mean loading for the items was .60. Finally, to test whether our a priori self-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 .73 with the corresponding factor scores. Thus, similar to Study 2, the a priori scale captured a significant amount of variance in the empirically determined factor.

### **Intended future partner appreciation**

To measure intended partner appreciation in future relationships, we administered an 11-item scale adapted from Gordon et al. (2012; three reverse-coded items, e.g., *I don't think I will show much appreciation towards my partner*, along with eight other items, *I plan to become more appreciative of my partner*). Participants responded using a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*;  $M = 6.07$ ,  $SD = 0.75$ ,  $\alpha = .90$ ).

### **Relationship characteristics**

Similar to the prior studies, participants completed items about their relationship and breakup: length of the prior relationship ( $M_{\text{days}} = 523$ ,  $SD = 516$ ), time since break up ( $M_{\text{days}} = 628$ ,  $SD = 680$ ), relationship satisfaction while the relationship was intact ( $M = 4.00$ ,  $SD = 1.64$ ,  $\alpha = .93$ ; Rusbult et al., 1998), and current relationship status (Yes = 74, No = 65).

## **Results and brief discussion**

### **Manipulation check: State self-compassion**

Supporting the effectiveness of our self-compassion manipulation, responses to the three-item manipulation check differed across conditions,  $F(2, 139) = 3.77$ ,  $p = .026$ , with higher



**Table 5.** Zero order correlations: demographics, relationship characteristics, self-compassion, self-esteem, attributing responsibility, intended future partner appreciation, and self-improvement motivation in Study 3.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	—												
2. Gender	-.09	—											
3. Currently in relationship	-.20*	.10	—										
4. Time since breakup	.38*	-.04	-.13	—									
5. Prior relationship length	.38*	-.01	-.06	.04	—								
6. Prior relationship satisfaction	-.26*	-.08	.14	-.29*	.01	—							
7. Anxiety	-.18*	.10	.11	-.03	-.21*	-.07	—						
8. Avoidance	-.10	.12	.30*	-.19*	-.12	.01	.15*	—					
9. Self-esteem manipulation	-.01	-.02	.04	.14	-.14	-.04	.05	.03	—				
10. Self-compassion manipulation	-.04	-.01	-.02	-.13	.11	.09	-.09	.06	-.52*	—			
11. Attributing responsibility	.02	.01	.06	.14	-.01	.09	-.05	.02	.08	.01	—		
12. Intended future partner appreciation	.10	.11	-.22*	.21*	.14	-.08	-.04	-.33*	-.06	.08	-.03	—	
13. Self-improvement motivation	.10	.05	-.20*	.18*	.13	-.20*	.08	-.21*	-.05	.02	.07	.57*	—

Note: Gender (1 = Male; 2 = Female). Currently in a relationship (1 = Yes; 2 = No).

\* $p < .05$ .

scores in the self-compassion condition ( $M = 5.87$ ,  $SD = 0.84$ ) compared to the self-esteem ( $M = 5.58$ ,  $SD = 0.92$ ) and control conditions ( $M = 5.31$ ,  $SD = 1.15$ ). A follow-up, pairwise contrast between the self-compassion and self-esteem conditions was marginal ( $p = .15$ ,  $r = .16$ ,  $d = .33$ ), and one between the self-compassion and control conditions was significant ( $p = .007$ ,  $r = .26$ ,  $d = .59$ ). The self-esteem and control conditions did not differ from each other ( $p = .19$ ,  $r = .12$ ,  $d = .25$ ).

### Primary analyses

Table 5 shows the correlations among all the variables in this study. Next, we conducted two separate regression models that tested the condition by attributing responsibility to the self interaction predicting self-improvement motivation and intended future partner appreciation. We created two dummy codes, with the control condition as the comparison group in both of the two dummy variables (self-esteem manipulation: control = 0, self-esteem = 1, self-compassion = 0; self-compassion manipulation: control = 0, self-esteem = 0 and self-compassion = 1), and standardized all other variables. Interaction terms were formed by multiplying the each dummy code with standardized attribution of responsibility to the self scores.

### Self-improvement motivation

There was no main effect of self-esteem manipulation ( $b = -.05$ ,  $p = .64$ ,  $r = .04$ , 95% CI[-.29, .18]) or self-compassion manipulation ( $b = .02$ ,  $p = .87$ ,  $r = .01$ , 95% CI[-.21, .25]). The main effect of attributing responsibility to the self was also non-significant ( $b = -.15$ ,  $p = .37$ ,  $r = .08$ , 95% CI[-.26, .10]). The interaction between self-esteem manipulation and attributions of responsibility to the self did not significantly predict self-improvement motivation ( $b = .21$ ,  $p = .10$ ,  $r = .14$ , 95% CI[-.04, .43]). However, there was an interaction between self-compassion manipulation and attributions of responsibility to the self on self-improvement motivation ( $b = .30$ ,  $p = .022$ ,  $r = .19$ , 95% CI[.04, .51]; this interaction was also significant after controlling for age, gender, attachment styles, and relationship characteristics,  $b = .35$ ,  $p = .008$ ,  $r = .22$ , 95% CI[.09, .55]; see Table 6). As can be seen in Figure 4 (Aiken & West, 1991), in the control and self-esteem conditions, attributing responsibility to the self did not predict self-improvement motivation ( $b = -.14$ ,  $p = .37$ ,  $r = .14$ , 95% CI[-.47, .18] and  $b = .27$ ,  $p = .06$ ,  $r = .27$ , 95% CI[-.009, .42], respectively). However, in the self-compassion condition, attributing responsibility to the self predicted greater self-improvement motivation ( $b = .30$ ,  $p = .037$ ,  $r = .29$ , 95% CI[.02, .66]), consistent with Study 2's correlational, self-improvement motivation findings.

### Intended future partner appreciation

There was no main effect of self-esteem manipulation ( $b = -.01$ ,  $p = .95$ ,  $r = .01$ , 95% CI[-.42, .39]) or self-compassion manipulation ( $b = .08$ ,  $p = .42$ ,  $r = .07$ , 95% CI[-.24, .56]). There was a main effect of attributing responsibility to the self ( $b = -.35$ ,  $p = .038$ ,  $r = .17$ , 95% CI[-.65, -.02]). There was no significant interaction between self-esteem manipulation with attributing responsibility to the self ( $b = .22$ ,  $p = .14$ ,  $r = .08$ , 95% CI[-.05, .78]). However, there was a significant interaction between self-compassion manipulation with attributing responsibility to the self ( $b = .29$ ,  $p = .026$ ,  $r = .19$ , 95% CI[.04, .68], this interaction was also significant after controlling for age, gender, attachment styles, and relationship characteristics,  $b = .39$ ,  $p = .002$ ,  $r = .26$ , 95% CI[.14, .73]; see Table 6). As depicted in Figure 5, attributions of responsibility to the self predicted less intended future partner appreciation ( $b = -.34$ ,  $p = .023$ ,

**Table 6.** Hierarchical regressions predicting self-improvement motivation and intended future partner appreciation in Study 3.

IVs	Self-improvement motivation				Intended future partner appreciation					
	B	SE	β	95% CI lower	95% CI upper	B	SE	β	95% CI lower	95% CI upper
Age	-.01	.01	-.07	-.04	.02	.01	.02	.02	-.03	.04
Gender	-.03	.11	-.03	-.24	.18	.34*	.20	.20	.07	.61
Currently in relationship	-.06	.05	-.11	-.16	.04	-.11	-.15	-.15	-.24	.01
Time since breakup	.03	.05	.05	-.08	.14	.13*	.07	.18	.01	.26
Prior relationship length	.16*	.05	.29	.06	.26	.12*	.06	.16	.01	.24
Prior relationship satisfaction	-.04	.05	-.08	-.14	.06	.06	.06	.09	-.07	.19
Anxiety	.04	.05	.07	-.06	.13	-.01	.06	-.01	-.12	.11
Avoidance	-.10	.05	-.17	-.20	.01	-.18*	.06	-.24	-.31	-.05
Self-esteem	.01	.12	.01	-.23	.23	.02	.14	.01	-.27	.30
Self-compassion	.04	.11	.03	-.19	.26	.22	.14	.14	-.07	.50
Attributing responsibility	-.10	.09	-.18	-.28	.08	-.31*	.12	-.42	-.54	-.07
Self-esteem manipulation * attributing responsibility	.20	.12	.22	-.03	.44	.31*	.15	.26	.01	.61
Self-compassion * attributing responsibility	.32*	.12	.35	.09	.55	.43*	.15	.39	.14	.73

Note: Self-esteem manipulation (Control = 0, Self-esteem = 1, Self-compassion = 0), Self-compassion manipulation (Control = 0, Self-esteem = 0, Self-compassion = 1). The self-compassion manipulation \* attributing responsibility predicting self-improvement motivation and intended future partner appreciation were significant without covariates ( $b = .30, p = .022, 95\% \text{ CI} [.04, .51]$  &  $b = .29, p = .026, 95\% \text{ CI} [.04, .68]$ ), respectively.

\* $p < .05$ .

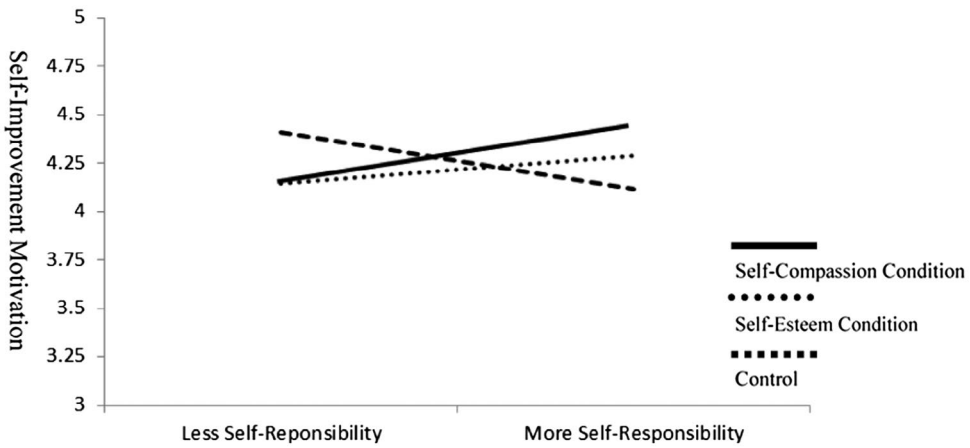


Figure 4. Attributing responsibility by conditions interaction from Study 3 predicting self-improvement motivation.

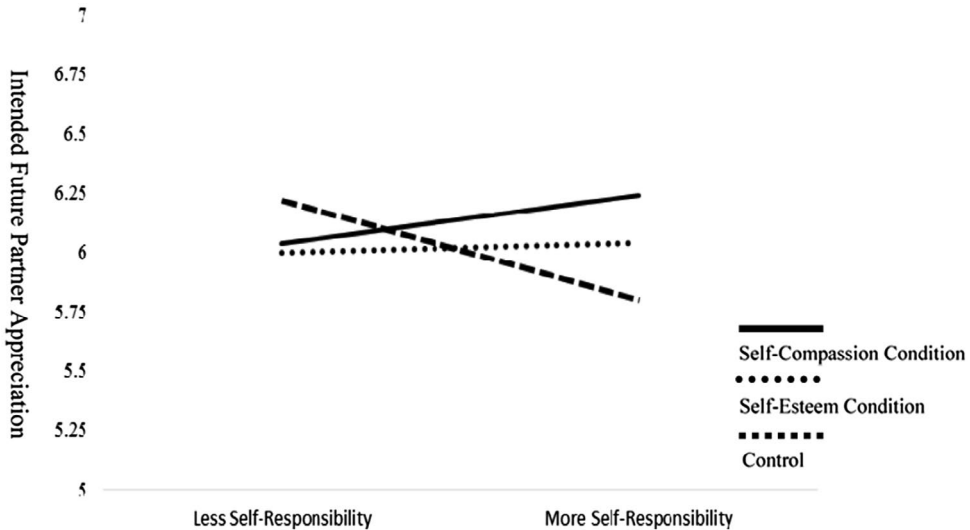


Figure 5. Attributing responsibility by conditions interaction from Study 3 predicting intended future partner appreciation.

$r = .33$ , 95% CI[-.48, -.04]) in the control condition. This relationship between attributing responsibility to the self and less intended future partner appreciation was diminished in both the self-esteem and self-compassion conditions ( $b = .03$ ,  $p = .84$ ,  $r = .03$ , 95% CI[-.19, .23] and  $b = .13$ ,  $p = .36$ ,  $r = .13$ , 95% CI[-.12, .33], respectively). These results suggest that both the self-esteem and the self-compassion inductions ameliorated the negative relationship between attributing responsibility to the self and intended future partner appreciation seen in the control condition.

Taken as a whole, Study 3’s experimental findings conceptually replicated and extended the correlational evidence obtained in the prior two studies. Specifically, people who attributed responsibility for a breakup to themselves reported more self-improvement motivation

when they were induced to feel self-compassion compared to people in the self-esteem and control condition. For intended future partner appreciation, attributions of responsibility to the self were linked to less intended appreciation for future partners in the control condition – a relationship that was reduced to non-significance in not only the self-compassion condition, but also the self-esteem one.

## General discussion

Research suggests that romantic breakups can have especially damaging *and* beneficial effects for people who attribute responsibility for a breakup to themselves. We tested the novel hypothesis that self-compassion promotes positive adjustment to romantic breakups by buffering the damaging, and enhancing the beneficial, consequences of a romantic breakup among such individuals. Supporting this hypothesis, people who attributed greater responsibility to themselves reported poorer romantic outlook when they were lower relative to higher on trait self-compassion (Studies 1 & 2), and less intended future partner appreciation in a control condition relative to when they were induced with a self-compassionate mindset (Study 3). We also found that higher trait self-compassion (Study 2) and induced self-compassion (Study 3) augmented self-improvement motivation among participants who attributed responsibility of a romantic breakup to themselves. These adjustment-promoting effects of self-compassion held controlling for a range of variables known to impact romantic breakup adjustment, including self-esteem and attachment style. Together, these results suggest that self-compassion promote positive adjustment to romantic breakups among people who attribute responsibility for a breakup to themselves.

## Implications and possible mechanism

Because attributions of responsibility to the self for negative, personal events can be linked to both negative and positive consequences, it is important to uncover factors that can reduce the negatives, as well as factors that can boost the positives. In the current studies, we hypothesized that being self-compassionate is one such factor and the results generally supported this hypothesis. We do note, though, that our young-adult participants in the self-compassion condition of Study 3 who attributed responsibility for a breakup to themselves were motivated to self-improve but weren't significantly more likely to endorse intended future partner appreciation. We speculate that this may be because feeling grateful and appreciative is not a strategy that young adults use in an effort to self-improve and become better romantic partners. Indeed, a recent study showed that young adults in the U.S. tend to rank gratitude as a less important character strength than, for example, young adults in Japan (Shimai, Otake, Park, Peterson, & Seligman, 2006). Future research is needed to explore the specific, self-improvement strategies people who attribute a breakup to themselves are most apt to employ.

We also note that, although our findings were fairly robust, we did not explore the underlying mechanism that accounts for the moderating effects of self-compassion. Some have theorized that self-compassion may function as an emotion regulation strategy (Neff, 2003, 2011), suggesting that the adaptive regulation of undesirable emotions following a romantic breakup may be one possible mechanism underlying the present findings (Terry & Leary, 2011). Indeed, poor breakup adjustment tends to be characterized by an inability to manage negative emotions, and research has shown that people who believe they can regulate their

negative mood scored lower on depression immediately following a breakup and six months later (Mearns, 1991). Also consistent with the possibility that emotion regulation is an underlying mechanism is evidence that highly self-compassionate people are less likely to ruminate (Neff, 2003) and brood on their negative mood (e.g., *Why do I always react this way?*; Raes, 2010). Furthermore, brooding mediated the negative relationship between self-compassion and depression as well as anxiety (Raes, 2010). Updegraff and Taylor (2000) argued that one factor that prevents people from recovering from difficult life events (e.g., romantic breakup) is poor emotional adjustment. Consequently, we speculate that self-compassion may regulate the emotional reactions of people who attribute responsibility of a breakup to themselves, which in turn, enable them to make better adjustments.

One emotion regulation strategy that future research could examine is emotional disclosure, which helps people moderate their emotional reaction to a difficult life event by gradually translating (e.g., speaking or writing) that event into smaller manageable components (Harber & Pennebaker, 1992). Many studies have shown that emotional disclosure is an effective strategy that resolves emotional conflicts and, ultimately, protects people from health risk and enhances psychological adjustments (Pennebaker & Chung, 2011). Future research is needed to explore the specific strategies that self-compassionate people who attribute a breakup to themselves are most apt to employ.

Compassion is central to the theory of self-compassion (Neff, 2011) and is evidenced in work showing self-compassion is associated with enhanced other-focused concerns (Neff & Pommier, 2013), as well as a greater likelihood to use relationship-preserving strategies during conflicts with close others (e.g., compromises; Yarnell & Neff, 2013). For these reasons, we speculate another possible mechanism for why self-compassionate people who attribute responsibility of a breakup to themselves are able to report better adjustment is having more compassionate love for the ex-partner during the breakup process (e.g., care and concern for others during times of suffering; Sprecher & Fehr, 2005). For example, we may see that self-compassionate people who attribute responsibility of a breakup to themselves may be inclined to use compassionate breakup strategies both when they initiate the breakup (e.g., *Find a time when we can talk face to face about my desire to break up*) or be the person broken up with (e.g., *Tell my partner that I didn't regret the time we had spent together in the relationship*). That is, this type of strategy may enable both people to walk away with the least possible harm (Sprecher, Zimmerman, & Abrahams, 2010), resulting in a romantic breakup that is easier for both partners to recover from.

On a different note, the high correlation between self-compassion and self-esteem has led to questions about the discriminant validity between the two constructs and the need to rule out self-esteem as an alternative explanation of apparent effects of self-compassion (e.g., Neff, 2003, 2004, 2011; Neff et al., 2005). In the present studies, we showed that self-compassion's adjustment-promoting effects were independent of self-esteem. Moreover, the experimental results of Study 3 join a rather small body of evidence showing that a momentary state of self-compassion can be induced by instructing participants to think about a negative, personal event from a kind, non-judgmental, and broader perspective (Baker & McNulty, 2011; Breines & Chen, 2012; Leary et al., 2007). These findings, together with prior theorizing (Neff, 2011), suggest that self-compassion is a malleable skill that can be taught and improved. Indeed, recent research has demonstrated that self-compassion can be reliably increased (Jazaieri et al., 2013; Kabat-Zinn, 1995; Neff & Germer, 2013). For

instance, a group of community adults who went through a 9-week compassion course experienced a 20 percent increase in their self-compassion scores compared to people in a waitlist control condition. Moreover, our 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, Leary, & Mehta, 2013; Zhang & Chen, 2016), paints self-compassion as a proactive coping strategy that guides people to approach rather than avoid difficult life experiences. The implication here is that self-compassion may be cultivated to promote adjustment to romantic breakups and other difficult life experiences.

An interesting side note from Study 3 is that it appears people in the control condition who attributed less responsibility to themselves showed directionally more self-improvement motivation and intended future partner appreciation than people in the other two conditions. However, we tested and found no significant condition differences among people lower in attributing responsibility on either self-improvement motivation ( $F = 1.25, p = .30$ ) or appreciation ( $F = .80, p = .46$ ), suggesting that people lower on attributing responsibility were not reliably different on self-improvement motivation and intended partner appreciation across conditions.

### **Limitations and future directions**

The present research has several limitations. Among them, we relied heavily on recollection procedures in which participants often recalled a breakup from a while back. However, it is important to note that the attribution of responsibility by self-compassion effects across studies remained even after controlling for time since breakup. Also, participants' interpretation of the breakup could have been influenced by whether they had experience other romantic relationships post-breakup. We partially addressed this possibility by showing that the attribution of responsibility and self-compassion interaction remained significant when we controlled for current relationship status. However, it is possible that people still could have had other relationships in-between the last breakup and the current relationship. Future research could extend our results by recruiting participants who only had a breakup in the last several months and have not enter a new relationship. This would help paint a clearer picture of people's emotions and attitudes toward their breakup.

We also relied on self-report methods. Most extant research on self-compassion and romantic relationships has similarly relied on self-report measures (e.g., Baker & McNulty, 2011; Neff & Beretvas, 2013), but future research would benefit from more diverse methodological approaches (e.g., objective coding of behavior; see Sbarra et al., 2012). Moreover, we only measured people's self-improvement and intended future partner appreciation. It will be important for future research to examine the extent to which people actually act on such intentions. Further, we focused exclusively on *post* breakup adjustment and growth, but it would be interesting to examine how self-compassion and perceptions of one's responsibility for a breakup influence the thoughts and behaviors of people who report the *intention* to break up. In light of research suggesting that self-compassion promotes compromising decisions (Yarnell & Neff, 2013), intimate bonding behaviors (e.g., affection), less aggression during conflict situations (Neff & Beretvas, 2013), it may be that people who attribute greater responsibility to themselves and are highly self-compassionate will make a greater effort at mending

a volatile, but still intact, romantic relationship. Such results would suggest that self-compassion may stimulate people to mend romantic relationships *before* they are broken.

## Conclusion

Contrary to the storybook notion that romantic relationships are “happily ever after,” relationships often dissolve and produce great distress in the process. As is the case for many other life stressors, the challenges for people facing a romantic breakup include confronting the breakup with resilience and moving forward with a positive attitude, especially among those who believe they are responsible for the termination of the relationship. The present findings suggest that, among such individuals, having greater compassion towards the self can promote more adjustment and growth responses to a breakup. We hope that these results will stimulate further research on how self-compassion can improve relationship quality and our chances of actually experiencing “happily ever after.”

## Notes

1. There was no significant attributing responsibility  $\times$  self-compassion  $\times$  gender interaction in any of the studies (Study 1 [romantic outlook],  $b = -.01, p = .96, 95\% \text{ CI}[-.23, .22]$ ; Study 2 [romantic outlook],  $b = .04, p = .63, 95\% \text{ CI}[-.14, .24]$ , Study 2 [self-improvement motivation],  $b = .10, p = .18, 95\% \text{ CI}[-.03, .15]$ , Study 3 [intended future partner appreciation],  $b = -.05, p = .52, 95\% \text{ CI}[-.35, .18]$ , Study 3 [self-improvement motivation],  $b = -.02, p = .79, 95\% \text{ CI}[-.31, .24]$ ).
2. There was no significant attributing responsibility  $\times$  anxiety interaction in any of the studies (Study 2 [romantic outlook],  $b = -.03, p = .71, 95\% \text{ CI}[-.22, .15]$ , Study 2 [self-improvement motivation],  $b = -.15, p = .052, 95\% \text{ CI}[-.18, .001]$ , Study 3 [intended future partner appreciation],  $b = -.13, p = .12, 95\% \text{ CI}[-.30, .03]$ , Study 3 [self-improvement motivation],  $b = -.11, p = .19, 95\% \text{ CI}[-.18, .15]$ ). There was no significant attributing responsibility  $\times$  avoidance interaction in any of the studies, except one predicting self-improvement motivation in Study 2 (Study 2 [romantic outlook],  $b = -.04, p = .57, 95\% \text{ CI}[-.27, .15]$ , Study 2 [self-improvement motivation],  $b = -.23, p = .002, 95\% \text{ CI}[-.25, -.06]$ , Study 3 [intended future partner appreciation],  $b = .02, p = .83, 95\% \text{ CI}[-.12, .15]$ , Study 3 [self-improvement motivation],  $b = -.06, p = .48, 95\% \text{ CI}[-.20, .09]$ ).
3. There was no significant age  $\times$  attributing responsibility  $\times$  self-compassion in any of the studies (Study 1 [romantic outlook],  $b = .07, p = .32, 95\% \text{ CI}[-.11, .32]$ ; Study 2 [romantic outlook],  $b = .14, p = .09, 95\% \text{ CI}[-.03, .40]$ , Study 2 [self-improvement motivation],  $b = -.12, p = .14, 95\% \text{ CI}[-.17, .02]$ , Study 3 [intended future partner appreciation],  $b = .10, p = .26, 95\% \text{ CI}[-.15, .56]$ , Study 3 [self-improvement motivation],  $b = .04, p = .67, 95\% \text{ CI}[-.21, .32]$ ). There was no significant time since breakup  $\times$  attributing responsibility  $\times$  self-compassion in any of the studies (Study 1 [romantic outlook],  $b = .14, p = .07, 95\% \text{ CI}[-.02, .48]$ ; Study 2 [romantic outlook],  $b = .22, p = .002, 95\% \text{ CI} [.13, .57]$ , Study 2 [self-improvement motivation],  $b = .02, p = .82, 95\% \text{ CI}[-.09, .12]$ , Study 3 [intended future partner appreciation],  $b = -.01, p = .97, 95\% \text{ CI}[-.43, .42]$ , Study 3 [self-improvement motivation],  $b = .04, p = .81, 95\% \text{ CI}[-.50, .64]$ ).
4. There was no significant prior relationship satisfaction  $\times$  attributing responsibility  $\times$  self-compassion in any of the studies (Study 1 [romantic outlook],  $b = .11, p = .14, 95\% \text{ CI}[-.05, .36]$ ; Study 2 [romantic outlook],  $b = -.07, p = .29, 95\% \text{ CI}[-.24, .07]$ , Study 2 [self-improvement motivation],  $b = .07, p = .45, 95\% \text{ CI}[-.05, .12]$ , Study 3 [intended future partner appreciation],  $b = -.02, p = .82, 95\% \text{ CI}[-.22, .17]$ , Study 3 [self-improvement motivation],  $b = -.02, p = .83, 95\% \text{ CI}[-.16, .13]$ ).

## Disclosure statement

No potential conflict of interest was reported by the authors.



## References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Allen, A. B., Goldwasser, E. R., & Leary, M. R. (2012). Self-compassion and well-being among older adults. *Self and Identity, 11*, 428–453.
- 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.
- Battaglia, D. M., Richard, F. D., Datteri, D. L., & Lord, C. G. (1998). Breaking up is (relatively) easy to do: A script for the dissolution of close relationships. *Journal of Social and Personal Relationships, 15*, 829–845.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2 pp. 680–740). New York, NY: McGraw-Hill.
- Boelen, P. A., & Reijntjes, A. (2009). Negative cognitions in emotional problems following romantic relationship break-ups. *Stress and Health, 25*, 11–19.
- Breines, J., Toole, A., Tu, C., & Chen, S. (2013). Self-compassion, body image, and self-reported disordered eating. *Self and Identity, 13*, 432–448.
- Breines, J. G., & Chen, S. (2012). Self-compassion increases self-improvement motivation. *Personality and Social Psychology Bulletin, 38*, 1133–1143.
- Buck, E. (2011). *Relationship breakups: Are they all bad?* Unpublished manuscript.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical Turk. *Perspectives on Psychological Science, 6*, 3–5.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research, 1*, 245–276.
- Cattell, R. B., Balcar, K. R., Horn, J. L., & Nesselroade, J. R. (1969). Factor matching procedures: An improvement of the s index; with tables. *Educational and Psychological Measurement, 29*, 781–792.
- Chung, M. C., Farmer, S., Grant, K., Newton, R., Payne, S., Perry, M., ... Stone, N. (2003). Coping with post-traumatic stress symptoms following relationship dissolution. *Stress and Health, 19*, 27–36.
- Davis, D., Shaver, P. R., & Vernon, M. L. (2003). Physical, emotional, and behavioral reactions to breaking up: The roles of gender, age, emotional involvement, and attachment style. *Personality and Social Psychology Bulletin, 29*, 871–884.
- Eastwick, P. W., Finkel, E. J., Krishnamurti, T., & Loewenstein, G. (2008). Mispredicting distress following romantic breakup: Revealing the time course of the affective forecasting error. *Journal of Experimental Social Psychology, 44*, 800–807.
- Frazier, P. A., & Cook, S. W. (1993). Correlates of distress following heterosexual relationship dissolution. *Journal of Social and Personal Relationships, 10*, 55–67.
- Gordon, A. M., Impett, E. A., Kogan, A., Oveis, C., & Keltner, D. (2012). To have and to hold: Gratitude promotes relationship maintenance in intimate bonds. *Journal of Personality and Social Psychology, 103*, 257–274.
- Gray, J. D., & Silver, R. C. (1990). Opposite sides of the same coin: Former spouses' divergent perspectives in coping with their divorce. *Journal of Personality and Social Psychology, 59*, 1180–1191.
- Harber, K. D., & Pennebaker, J. W. (1992). Overcoming traumatic memories. In S. A. Christianson (Ed.), *The handbook of emotion and memory: Research and theory* (pp. 359–386). Hillsdale, NJ: Erlbaum.
- Janoff-Bulman, R. (1979). Characterological versus behavioral self-blame: Inquiries into depression and rape. *Journal of Personality and Social Psychology, 37*, 1798–1809.
- Jazaieri, H., Jinpa, G. T., McGonigal, K., Rosenberg, E. L., Finkelstein, J., Simon-Thomas, E., ... Goldin, P. R. (2013). Enhancing compassion: A randomized controlled trial of a compassion cultivation training program. *Journal of Happiness Studies, 14*, 1–14.
- Joel, S., Gordon, A. M., Impett, E. A., MacDonald, G., & Keltner, D. (2013). The things you do for me. *Personality and Social Psychology Bulletin, 39*, 1333–1345.
- Kabat-Zinn, J. (1995). *Mindfulness meditation*. New York, NY: Nightingale-Conant Corporation.
- Kendler, K. S., Hettema, J. M., Butera, F., Gardner, C. O., & Prescott, C. A. (2003). Life event dimensions of loss, humiliation, entrapment, and danger in the prediction of onsets of major depression and generalized anxiety. *Archives of General Psychiatry, 60*, 789–796.
- 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.

- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress, 17*, 11–21.
- Marshall, T. C. (2012). Facebook surveillance of former romantic partners: Associations with postbreakup recovery and personal growth. *Cyberpsychology, Behavior, and Social Networking, 15*, 521–526.
- Marshall, T. C., Bejanyan, K., & Ferenczi, N. (2013). Attachment styles and personal growth following romantic breakups: The mediating roles of distress, rumination, and tendency to rebound. *PLoS ONE, 8*, e75161–e75171.
- Mattingly, B. A., Lewandowski, G. W., & McIntyre, K. P. (2014). 'You make me a better/worse person': A two-dimensional model of relationship self-change. *Personal Relationships, 21*, 176–190.
- Mearns, J. (1991). Coping with a breakup: Negative mood regulation expectancies and depression following the end of a romantic relationship. *Journal of Personality and Social Psychology, 60*, 327–334.
- Miller, M. R. (2009). *Growth following romantic relationship dissolution*. Unpublished manuscript.
- Monroe, S. M., Rohde, P., Seeley, J. R., & Lewinsohn, P. M. (1999). Life events and depression in adolescence: Relationship loss as a prospective risk factor for first onset of major depressive disorder. *Journal of Abnormal Psychology, 108*, 606–614.
- Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*, 223–250.
- Neff, K. D. (2004). Self-compassion and psychological well-being. *Constructivism in the Human Sciences, 9*, 27–37.
- Neff, K. D. (2011). Self-compassion, self-esteem, and well-being. *Social and Personality Psychology Compass, 5*, 1–12.
- Neff, K. D., & Beretvas, S. N. (2013). The role of self-compassion in romantic relationships. *Self and Identity, 12*, 78–98.
- 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., Kirkpatrick, K. L., & Rude, S. S. (2007). Self-compassion and adaptive psychological functioning. *Journal of Research in Personality, 41*, 139–154.
- 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.
- Neff, K. D., & Vonk, R. (2009). Self-compassion versus global self-esteem: Two different ways of relating to oneself. *Journal of Personality, 77*, 23–50.
- Overall, N. C., Fletcher, G. J., & Simpson, J. A. (2010). Helping each other grow: Romantic partner support, self-improvement, and relationship quality. *Personality and Social Psychology Bulletin, 36*, 1496–1513.
- Park, L. E., Sanchez, D. T., & Brynildsen, K. (2011). Maladaptive responses to relationship dissolution: The role of relationship contingent self-worth. *Journal of Applied Social Psychology, 41*, 1749–1773.
- Pennebaker, J. W., & Chung, C. K. (2011). Expressive writing and its links to mental and physical health. In H. Friedman (Ed.), *Oxford handbook of health psychology. A general summary of expressive writing research* (pp. 417–437). New York, NY: Oxford.
- Przedziecki, A., Sherman, K. A., Baillie, A., Taylor, A., Foley, E., & Stalgis-Bilinski, K. (2013). My changed body: Breast cancer, body image, distress and self-compassion. *Psycho-oncology, 22*, 1872–1879.
- Raes, F. (2010). Rumination and worry as mediators of the relationship between self-compassion and depression and anxiety. *Personality and Individual Differences, 48*, 757–761.
- Rhoades, G. K., Kamp Dush, C. M., Atkins, D. C., Stanley, S. M., & Markman, H. J. (2011). Breaking up is hard to do: The impact of unmarried relationship dissolution on mental health and life satisfaction. *Journal of Family Psychology, 25*, 366–374.
- Rosenberg, M. (1965). Rosenberg self-esteem scale (RSE). *Acceptance and Commitment Therapy. Measures Package, 61*, 52.
- Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The investment model scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships, 5*, 357–387.
- Sbarra, D. A., & Emery, R. E. (2005). The emotional sequelae of nonmarital relationship dissolution: Analysis of change and intraindividual variability over time. *Personal Relationships, 12*, 213–232.

- 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.
- Sedikides, C., & Hepper, E. G. (2009). Self-improvement. *Social and personality psychology Compass*, *3*, 899–917.
- Shimai, S., Otake, K., Park, N., Peterson, C., & Seligman, M. E. (2006). Convergence of character strengths in American and Japanese young adults. *Journal of Happiness Studies*, *7*, 311–322.
- Simmons, J. P., Nelson, L. D., & Simonsohn, U. (2011). False-positive psychology. *Psychological Science*, *22*, 1359–1366.
- Simpson, J. A. (1990). Influence of attachment styles on romantic relationships. *Journal of Personality and Social Psychology*, *59*, 971–980.
- Spielmann, S. S., MacDonald, G., & Wilson, A. E. (2009). On the rebound: Focusing on someone new helps anxiously attached individuals let go of ex-partners. *Personality and Social Psychology Bulletin*, *35*, 1382–1394.
- Sprecher, S. (1994). Two sides to the breakup of dating relationships. *Personal Relationships*, *1*, 199–222.
- Sprecher, S., & Fehr, B. (2005). Compassionate love for close others and humanity. *Journal of Social and Personal Relationships*, *22*, 629–651.
- Sprecher, S., Zimmerman, C., & Abrahams, E. M. (2010). Choosing compassionate strategies to end a relationship. *Social Psychology*, *41*, 66–75.
- Tashiro, T. Y., & Frazier, P. (2003). “I’ll never be in a relationship like that again”: Personal growth following romantic relationship breakups. *Personal Relationships*, *10*, 113–128.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The posttraumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*, 455–471.
- Tedeschi, R. G., Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (Eds.). (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*. Mahwah, NJ: Routledge.
- Terry, M. L., & Leary, M. R. (2011). Self-compassion, self-regulation, and health. *Self and Identity*, *10*, 352–362.
- Terry, M. L., Leary, M. R., & Mehta, S. (2013). Self-compassion as a buffer against homesickness, depression, and dissatisfaction in the transition to college. *Self and Identity*, *12*, 278–290.
- Updegraff, J. A., & Taylor, S. E. (2000). From vulnerability to growth: Positive and negative effects of stressful life events. *Loss and Trauma: General and Close Relationship Perspectives*, *25*, 3–28.
- Waller, K. L., & MacDonald, T. K. (2010). Trait self-esteem moderates the effect of initiator status on emotional and cognitive responses to romantic relationship dissolution. *Journal of Personality*, *78*, 1271–1299.
- Wei, M., Russell, D. W., Mallinckrodt, B., & Vogel, D. L. (2007). The experiences in close relationship scale (ECR)-short form: Reliability, validity, and factor structure. *Journal of Personality Assessment*, *88*, 187–204.
- Wong, P. T., & Weiner, B. (1981). When people ask ‘why’ questions, and the heuristics of attributional search. *Journal of Personality and Social Psychology*, *40*, 650–663.
- Yarnell, L. M., & Neff, K. D. (2013). Self-compassion, interpersonal conflict resolutions, and well-being. *Self and Identity*, *12*, 146–159.
- Zhang, J. W., & Chen, S. (2016). Self-compassion promotes personal improvement from regret experiences via acceptance. *Personality and Social Psychology Bulletin*, *42*, 244–258.

## Appendix 1. Self-improvement motivation scale

Below is a list of feelings and thoughts that people sometimes have after a breakup. Please read each item, and then indicate how much it describes how you felt after the breakup.

- (1) I would learn to put greater effort into the maintenance of my relationship;
- (2) I would be more willing to express my emotions and feelings;
- (3) I would learn and improve myself;
- (4) I would try to find opportunities that would challenge me and help me grow as a romantic partner;

- (5) I was interested in activities that would expand my abilities to become a better romantic partner;
- (6) I had the sense that I wanted to continue to develop my role as a romantic partner;
- (7) I wanted to become a more caring romantic partner;
- (8) I would not mind going to therapy with a future romantic partner if it helped our relationship;
- (9) I would want to be more understanding of my future romantic partner;
- (10) I would be a lot more cautious in choosing a romantic partner;
- (11) I would like to get to know more about the other person before I get into a serious relationship;
- (12) I would want to find a romantic partner who will be more kind to me;
- (13) I am looking for someone who will accept me for who I am;
- (14) I would want to find a romantic partner who is willing to improve himself/herself for me.