

Beliefs about Self-Compassion: Implications for Coping and Self-Improvement

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Abstract

Self-compassion—treating oneself with caring and understanding during difficult times—promotes adaptive coping and self-improvement. Nonetheless, many people are not self-compassionate. We examined a key barrier people face to treating themselves self-compassionately: their negative beliefs about self-compassion (i.e., that it leads to complacency, indulgence or irresponsibility). Across three studies, the more people held these negative beliefs, the less self-compassionately they reported responding to a real-world event (Study 2) and hypothetical emotional challenges (Studies 1 and 3). Self-compassionate responding, in turn, predicted adaptive coping strategies and intentions for self-improvement. Experimentally inducing people to hold positive, as opposed to negative, beliefs about self-compassion predicted self-compassionate responding five to seven days later (Study 3). By recognizing and targeting peoples' beliefs, our findings highlight the importance of reducing such beliefs that are barriers to practicing self-compassion, as a means to improve the way people respond to difficult times.

Keywords: self-compassion, mindset, lay theories, coping, self-improvement

Beliefs about Self-Compassion: Implications for Coping and Self-Improvement

The “Golden Rule” prescribes that people should treat others how they want to be treated. However, this maxim is seldom accompanied by advice on how individuals should first treat themselves. This reflects an emphasis to be kind to others, which is not always extended to oneself (Neff, 2003b). Such self-compassion fundamentally involves giving oneself care and support in difficult times—much like we would extend to a loved one (Neff, 2011). This phenomenon is typically conceptualized as involving three key processes: (1) self-kindness, as opposed to self-criticism (i.e., offering words of comfort rather than berating); (2) mindfulness, as opposed to over-identification (i.e., observing emotions non-judgmentally and openly, rather than dwelling on them); and (3) a sense of common humanity, as opposed to isolation (i.e., acknowledging that all humans are imperfect, rather than feeling alone in failings and suffering; Neff, 2003a, 2003b).

Although self-compassion confers numerous benefits, many people do not treat themselves self-compassionately when encountering challenges. For example, in previous research, the majority of 391 undergraduates sampled reported treating others with more kindness than which they treated themselves (Neff, 2003b). One important, yet under-researched reason for this could be that some people hold negative beliefs about self-compassion, believing it leads to complacency, self-indulgence, or irresponsibility (e.g., Germer & Neff, 2019; Gilbert, McEwan, Matos, & Ravis, 2011; Neff & Germer, 2018). Such “negative self-compassion beliefs” hinder people from practicing self-compassion, especially when they might need it most (for example, during emotionally challenging situations). In turn, this may affect how adaptively they cope with such situations and strive to improve themselves thereafter. In this paper, our goal was

to examine how these negative self-compassion beliefs relate to peoples' practice of self-compassion, and in turn, adaptive coping and self-improvement outcomes.

The Benefits of Self-Compassion

Self-compassion has consistently been linked with many benefits, including lower levels of anxiety and depression, greater psychological well-being, better physical health, and positive interpersonal relationships (Dunne, Sheffield, & Chilcot, 2018; Hall, Row, Wuensch, & Godley, 2013; MacBeth & Gumley, 2012; Neff & Beretvas, 2011; Neff, Kirkpatrick, & Rude, 2007; Neff & McGehee, 2010; Yarnell & Neff, 2013; Zessin, Dickhäuser, & Garbade, 2015). People who are self-compassionate tend to experience these numerous benefits, in part, because self-compassion is associated with how adaptively people cope with a wide range of emotionally challenging events, including those that are not necessarily their fault (e.g., Germer & Neff, 2013; Neff, 2003a, Leary et al., 2007; Sirois, Molnar, & Hirsch, 2015). In addition, self-compassion relates to peoples' intentions to improve themselves or their situations following these difficulties (Breines & Chen, 2012; Leary, Tate, Adams, Batts, & Hancock, 2007).

Although self-compassion is associated with greater extroversion, agreeableness, conscientiousness, and most commonly with lower neuroticism (Arslan, 2016; Neff, Rude, & Kirkpatrick, 2007; Pfattheicher et al., 2017), research suggests that it can uniquely predict outcomes such as life satisfaction (Neff et al., 2018), psychological health (Neff et al., 2007), and constructive problem solving (Arslan, 2016) beyond these personality traits. Compared to neuroticism, self-compassion tends to focus more specifically on strategy use: neuroticism captures individual differences in emotional reactivity more broadly, whereas self-compassion represents explicit “strategies for dealing with negative emotions and experiences” (Pfattheicher et al., 2017, p. 167)—such as showing oneself kindness and engaging in mindfulness. In our

studies, we focused on testing how people's self-compassion relates to their specific coping strategies and self-improvement intentions.

Self-compassion and coping. Self-compassion tends to be positively related to adaptive coping strategies, such as acceptance (e.g., Sirois, Molnar, & Hirsch, 2015) and positive reframing (e.g., Neff, Hsieh, & Dejitterat, 2005; Sirois et al., 2015), while it is associated with fewer maladaptive avoidant coping strategies, such as denial, distraction, and behavioral disengagement (Neff et al., 2005; Sirois et al., 2015).

Self-compassion and self-improvement intentions. Self-compassion also plays an important role in peoples' intentions to improve themselves or the situation (i.e., their "self-improvement intentions") following emotional challenges. For example, students encouraged to reflect upon a setback with self-compassion (as opposed to self-enhancement) reported greater intentions to make amends after a wrongdoing (Breines & Chen, 2012), expressed greater willingness to accept personal responsibility for their role in a negative event (Leary et al., 2007), and elected to study longer after a difficult test (Breines & Chen, 2012).

These studies suggest that practicing self-compassion is associated with more adaptive coping and greater self-improvement intentions in response to emotional challenges. Consistent with these findings, we theorized that self-compassion would be associated with these adaptive outcomes because it comprises mindfulness, self-kindness, and common humanity components. During emotionally challenging situations, when people are more mindfully aware of their thoughts and emotions (i.e., mindfulness), they would be more likely to select appropriate strategies to help themselves cope adaptively (as opposed to becoming overwhelmed by difficult emotions); when people view their circumstances from a place of acceptance, as opposed to judgment (i.e., self-kindness), they could be more willing to acknowledge areas for

improvement, rather than resort to less helpful ways of coping, such as avoidance; and when people acknowledge that everyone makes mistakes and encounters emotional difficulties (i.e., common humanity), they may feel more empowered to face challenges head-on, rather than dwelling in self-pity. Therefore, by enabling people to mindfully perceive life's difficulties in a non-judgmental, supportive manner, self-compassion could promote adaptive responses to emotional challenging situations.

Barriers to Being Self-Compassionate

Despite the numerous benefits of self-compassion, many people face significant barriers to treating themselves self-compassionately. Some people, for instance, have fears about self-compassion, and therefore refrain from practicing self-compassion (Gilbert et al., 2007; Gilbert, McEwan, Catarino, Baião, & Palmeira, 2014). Other people experience negative physiological responses to self-compassion-building exercises (Duarte, McEwan, Barnes, Gilbert, & Maratos, 2015; Rockliff, Gilbert, McEwan, Lightman, & Glover, 2008). Another major barrier is peoples' "negative self-compassion beliefs"—or beliefs that self-compassion leads to less motivation, more self-indulgence, and less self-responsibility. Self-compassion researchers consider these beliefs to pose a major barrier towards practicing self-compassion (e.g., Germer & Neff, 2019; Gilbert, et al., 2011; Neff & Germer, 2018).

For example, self-compassion interventions sometimes include, along with self-compassion skills training, educational material explaining how negative beliefs about self-compassion can, in fact, be misconceptions (e.g., Germer & Neff, 2019; Gilbert & Proctor, 2006; Neff & Germer, 2018). In addition, one study found that participants who did not treat themselves with self-compassion were more likely to associate self-compassion with negative attributes, such as laziness and self-indulgence (Robinson et al., 2016). These studies suggest

that negative self-compassion beliefs prevent people from treating themselves with compassion. However, to our knowledge, no empirical research has yet specifically isolated and tested the effects of such beliefs on peoples' practice of self-compassion and its downstream effects—the aim of our present paper.

Lay Theories

Lay theories are peoples' fundamental beliefs about themselves and the world (Dweck, Chiu, & Hong, 1995; Molden & Dweck, 2006). These beliefs about intelligence, empathy, personality, emotions, or other attributes, predict whether people perceive and respond to challenges in adaptive or maladaptive ways (De Castella, Platow, Tamir & Gross, 2018; Hong, Chiu, Dweck, Lin, & Wan, 1999; Schumann, Zaki & Dweck, 2014; Yeager, Miu, Powers, & Dweck, 2013). For example, students who believed intelligence is malleable responded to difficulty and failure with greater mastery-oriented behaviors and persistence, compared to those who believed intelligence is fixed (Dweck, 2000; Hong et al., 1999; Mueller & Dweck, 1998). In studies of empathy, when participants were led to believe empathy can be developed (as opposed to a quality that's fixed), they were more likely to expend effort to empathize with others in challenging contexts (Schumann et al., 2014). To our knowledge, no existing studies have extended this framework to understanding—and changing—peoples' lay theories of self-compassion.

Negative Beliefs About Self-Compassion

Likewise, people have beliefs about self-compassion—that self-compassion might lower motivation, lead to self-indulgence, or decrease a sense of responsibility (Neff & Germer, 2018; Germer & Neff, 2019). These negative self-compassion beliefs can be self-fulfilling because people who hold them may be more likely to avoid practicing self-compassion in emotionally

challenging situations, which may undermine adaptive responding. In contrast, people who hold these negative beliefs to a lesser extent (or who have been primed in a way that reduces such beliefs) may be more inclined to practice self-compassion in difficult times, which in turn, should relate to more adaptive coping and greater self-improvement intentions. Therefore, we predicted and tested in our studies an indirect effect of negative self-compassion beliefs on adaptive coping and self-improvement intentions through peoples' reported practice of self-compassion.

Overview

In three studies, we tested the hypothesis that participants' negative self-compassion beliefs would be associated with their practice of self-compassion, and in turn, their coping strategies and self-improvement intentions in response to emotionally difficult situations. In Study 1, we presented participants with three emotionally challenging scenarios and measured their negative self-compassion beliefs, as well as their reported intentions to practice self-compassion, coping strategies, and self-improvement intentions in response to these scenarios. In Study 2, we replicated our results in a real-world setting with Americans who felt disappointed by the 2016 United States Presidential election. In Study 3, we experimentally induced either positive or negative beliefs about self-compassion and examined their effects on participants' intentions to practice self-compassion in response to emotionally challenging scenarios five to seven days afterward.

Study 1: Negative Self-Compassion Beliefs Predict Responses to Challenging Events

In this study, we investigated whether peoples' self-compassion beliefs relate to how self-compassionately they respond in moments of adversity. We first presented participants with three hypothetical scenarios depicting emotionally challenging situations. We were interested in

measuring participants' intentions to respond self-compassionately in these situations, utilize various adaptive or maladaptive coping strategies, and their self-improvement intentions. Then, we assessed participants' negative self-compassion beliefs. We tested the predictions that (1) the more people hold negative self-compassion beliefs, the less likely they would be to respond self-compassionately; (2) the greater their intentions to respond self-compassionately, the more likely they would report using adaptive coping strategies, the higher their self-improvement intentions, and the less likely they would report using maladaptive coping strategies; and (3) there would be an indirect effect of negative self-compassion beliefs on coping and self-improvement intentions through peoples' intentions to practice self-compassion in these situations.

Participants

We conducted a power analysis for a bivariate correlation in G-POWER to determine a sufficient sample size using an alpha of .05, power of .80 and a medium effect size ($r = .35$; Cohen, 1992). We aimed to detect a medium effect size, given the range of effect sizes found in past studies ($r_s = .17-.56$; Leary et al., 2007; Neff et al., 2005; Sirois et al., 2005) and financial cost considerations. Based on these assumptions, the desired sample size was 61. Therefore, we recruited 65 adults from Amazon Mechanical Turk for the study, an online crowdsourcing marketplace where people can be recruited virtually to complete surveys for pay (for more information about Mechanical Turk samples see Paolacci & Chandler, 2014). Six people did not answer any questions after the consent form (which we had not anticipated), leaving a final sample of 59 participants (25 women, 34 men; $M_{age} = 35.9$, $SD_{age} = 11.2$; 68% White). We did not pre-register this study or other studies within this manuscript because we conducted them before pre-registration became common practice.

Procedure

We asked participants to imagine themselves in three emotionally challenging scenarios, each designed to elicit negative emotions, and to rate how they would respond to each of them separately (Leary et al., 2007). These scenarios asked participants to imagine (a) not studying sufficiently for an important test, resulting in them failing the test, (b) forgetting to call a grandparent back, only to learn afterwards that the grandparent had unexpectedly passed away, and (c) forgetting their lines in the middle of a performance, causing the production to abruptly halt (see SOM Appendix A). After each scenario, participants reported their intentions to respond self-compassionately, their intentions to use various kinds of coping strategies, and their self-improvement intentions. We additionally assessed social desirability in responding (to test how participants' responses to our negative self-compassion beliefs items might be related to concerns about social desirability), and participants' individual differences in self-compassion (to provide initial validation for their reported intentions to respond self-compassionately).

Measures

Emotional Responses. To check that our scenarios elicited negative emotions as intended, participants reported the extent to which they would feel 16 negative emotions (e.g., sad, angry, irritated) if the situation had *just* occurred, indicating responses a scale ranging from 1 (Very slightly or Not at all) to 5 (Extremely). Averaging across the three scenarios, participants' ratings on emotion items were highly inter-correlated ($r_s > .51$, $p_s < .001$), and internal consistency of the scale as a whole was high ($\alpha = .95$). Thus, we averaged items to create a composite "negative emotion" score.

Responding Self-Compassionately to Emotionally Challenging Scenarios. To assess intentions to respond self-compassionately, participants completed an adapted version of the Self-Compassion Scale-Short Form (Raes, Pommier, Neff, & Van Gucht, 2011), indicating

responses on a scale ranging from 1 (Almost never) to 5 (Almost always). We adapted items that were originally worded to measure individual differences in self-compassion (“I try to be understanding and patient towards those aspects of my personality I don’t like”) to assess intentions to respond self-compassionately to a specific event (“I would try be understanding and patient towards those aspects of my personality I don’t like”). Three subscales addressed the positive aspects of self-compassion: self-kindness, common humanity, and mindfulness. Three subscales addressed the negative counterparts of these aspects: self-judgment, isolation, and over-identification. Internal consistency of the scale was high across scenarios ($\alpha = .89$), and participants’ intentions to respond self-compassionately were highly correlated across all scenarios ($r_s > .62$, $p_s < .001$). Because we were interested in capturing how people would generally respond to these emotionally challenging events, we calculated a composite self-compassion score for each participant by averaging their intentions to respond self-compassionately across the three scenarios.

Coping Responses. After reading each scenario, participants completed an adapted version of the Brief COPE (Carver, 1997) to rate how likely they would be to use various coping strategies in response to the event if it had *just* occurred, on a scale ranging from 1 (I wouldn’t do this at all) to 4 (I would do this a lot). We adapted items that were originally worded to measure how people have generally coped in the past (e.g., “I’ve been getting help and advice from other people”) to measure how participants predicted they would cope with the hypothetical events (e.g., “I would get help and advice from other people”).

We grouped participants’ ratings on these coping questions into three subscales: (1) emotion-focused coping (venting, positive reframing, humor, acceptance, and emotional support scales; $\alpha = .87$ averaged across scenarios), (2) avoidant coping (self-distraction, denial,

behavioral disengagement, self-blame and substance use scales; $\alpha = .71$ averaged across scenarios), and (3) problem-focused coping (active coping, planning, instrumental support, and religion scales; $\alpha = .89$ averaged across scenarios). These categorizations are consistent with past research (Schnider, Elhai, & Gray, 2007), and with theoretical and empirical distinctions between various types of coping strategies (Carver & Scheier, 1994; Folkman & Lazarus 1985, Holahan & Moos, 1987; McWilliams, Cox, & Enns, 2003; Zeidner, 1995)¹.

Self-Improvement Intentions. We were interested not only in how participants coped with the events, but also their inclination to improve themselves and the situation afterwards. To assess self-improvement intentions, we created three face-valid items to measure the three core beliefs that people could have about self-compassion—namely that it negatively affects motivation (“I would be motivated to fix the situation”), self-discipline (“I would try to become more self-disciplined”), and self-responsibility (“I would take personal responsibility for the situation”). Such single-item measures can be valid when they are straightforward to understand (Abdel-Khalek, 2006; Cheung & Lucas, 2014; Konrath, Meier, & Bushman, 2018). Participants indicated responses on a scale ranging from 1 (Extremely unlikely) to 5 (Extremely likely). We averaged items to create a “self-improvement intention” score and averaged scores across scenarios ($\alpha = .85$).

Negative Self-Compassion Beliefs. Drawing from prior work (Gilbert et al., 2011; Neff & Germer, 2012), we operationalized the three key negative self-compassion beliefs: the belief

¹ Although one self-blame item in the Brief COPE avoidant coping subscale (“I’ve *been* criticizing myself”) has theoretical overlap with the self-criticism dimension of self-compassion, this does not affect our interpretations of the relation between self-compassion and coping. First, removing this item did not change results—there was still a significant negative association between avoidant coping and self-compassion across studies (Study 1: $B = -.15, p = .03$; Study 2: $B = -.49, p < .001$; Study 3: $B = -.38, p < .001$). Second, self-compassion was associated with other forms of coping that did not have conceptual overlap with self-compassion.

that self-compassion leads to (a) complacency (e.g., “I will become complacent if I accept my imperfections completely”); (b) self-indulgence (e.g., “If I’m kind towards my flaws, I won’t have the discipline needed to succeed”); and (c) less self-responsibility (e.g., “I’ll take less responsibility for my shortcomings if I don’t constantly criticize myself”). Participants answered 10 items about their negative self-compassion beliefs (see SOM Appendix B for the item wording) using a 1 (Strongly disagree) to 5 (Strongly agree) scale ($\alpha = .94$). High scores reflect the endorsement of more negative self-compassion beliefs. For further details about item generation and selection, and the psychometric properties of our negative self-compassion beliefs measure, please refer to SOM Appendices C and D. Supplementary Table S1 presents means and standard deviations for each negative self-compassion beliefs item.

Social Desirability. To assess whether desires to respond in a socially desirable way may have influenced participants’ responses about their negative self-compassion beliefs, participants completed the 13-item Marlowe-Crowne Social Desirability Scale–Short Form C (M-C Form C; Crowne & Marlowe, 1964). Participants indicated either true or false in response to statements describing culturally approved, yet highly improbable, behaviors (e.g., “No matter who I’m talking to, I’m always a good listener”); scale internal consistency: $\alpha = .85$).

Individual Differences in Self-Compassion. To validate our adapted self-compassionate responses measure, participants completed the 26-item Self-Compassion Scale (SCS; Neff, 2003), by indicating their responses on a scale ranging from 1 (Almost never) to 5 (Almost always). Internal consistency of the scale was high ($\alpha = .94$).

Results

We first report the results from our checks that (a) the three scenarios elicited negative emotions; (b) negative self-compassion beliefs were uncorrelated with social desirability; and (c)

our adapted self-compassion measure was positively correlated with the original Self-Compassion Scale (SCS; Neff, 2003). Afterwards, we present the results of our hypothesis testing. Supplementary Table S2 presents correlations amongst all study measures.

Scenarios elicited negative emotions. Each of the three hypothetical scenarios were generally effective at eliciting negative emotions (scenario 1: $M = 3.49$, $SD = .83$; scenario 2: $M = 3.15$, $SD = .90$; scenario 3: $M = 3.64$, $SD = .77$). Because each scenario elicited the same pattern of self-compassion and coping responses, we averaged across all scenarios in subsequent analyses. A one-sample t-test indicated that participants' mean score on the negative emotion items, averaged across scenarios ($M = 3.43$, $SD = .70$), significantly differed from the midpoint of the scale ($t(58) = 4.70$, $p < .001$, 95% CI = [.25, .61]).

Self-reported beliefs were not driven by social desirability concerns. Participants' reported negative self-compassion beliefs were not significantly correlated with social desirability concerns ($r = -.22$, $p = .10$), suggesting that social desirability concerns were unlikely to have driven participants' reported self-compassion beliefs.

Validation of the self-compassionate responses measure. Our adapted self-compassionate responses measure was highly correlated with the original self-compassion measure ($r = .92$, $p < .001$), providing preliminary evidence of its construct validity. Because we were primarily interested in how participants reacted to the scenarios, and given that results using both our adapted measure and the original self-compassion measure were the same, we focused on analyzing participants' reported intentions to practice self-compassion in context (instead of their individual differences in self-compassion) in this and following studies. Next, we present the results of our hypothesis testing.

Negative self-compassion beliefs predicted reported practice of self-compassion.

Consistent with our hypothesis, negative self-compassion beliefs were negatively associated with intentions to respond self-compassionately ($r = -.46, p < .001$)—the more strongly participants endorsed negative self-compassion beliefs, the lower their intentions to respond to the scenarios with self-compassion ($B = -.31, 95\% \text{ CI } [-.47, -.15], SE = .08, t(57) = -3.90, p < .001$). Notably, the magnitude of the correlation between negative self-compassion beliefs and intentions to respond self-compassionately was not so high as to suggest they are the same construct.

Self-compassion predicted self-reported adaptive coping and self-improvement intentions. Self-compassion predicted the adaptive coping strategies and self-improvement intentions that participants reported they would employ in response to the hypothetical negative events (see Table 1). Participants' intentions to respond self-compassionately was associated with more emotion-focused coping, more problem-focused coping, less avoidant coping, and greater self-improvement intentions.

Indirect effects. To test our prediction that negative self-compassion beliefs would relate to participants' coping and self-improvement intentions through their intentions to practice self-compassion, we conducted an indirect effects analysis using PROCESS with a bootstrap of 10,000 resamples (Preacher & Hayes, 2004). Supporting our hypothesis, we found significant indirect effects of negative self-compassion beliefs on emotion-focused coping, problem-focused coping, and self-improvement intentions, mediated by self-compassion. The indirect effect was not significant for avoidant coping, which trended in the predicted direction, but did not reach statistical significance. Consistent with recommended best practices (Preacher & Hayes, 2008), we report the bootstrapped 95% confidence intervals (instead of p-values) of the indirect effect estimates across all studies. Table 2 summarizes indirect effect coefficients and Figure 1 illustrates the indirect effects for problem-focused coping as an example.

Table 1

Study 1 Regression Coefficients of the Relationships Between Participants' Intentions to Practice Self-Compassion and Their Negative Self-Compassion Beliefs, Their Responses to the Scenarios (Coping Strategies and Self-Improvement Intentions)

Responses to Scenarios	Intentions to Practice Self-Compassion						Negative Self-Compassion Beliefs					
	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>
		LL	UL					LL	UL			
Emotion-focused	.40	.22	.57	.09	4.56	< .001	-.12	-.25	.02	.07	-1.76	.08
Problem-focused	.42	.21	.64	.11	3.91	< .001	-.13	-.29	.03	.08	-1.57	.12
Avoidant-focused	-.18	-.31	-.06	.06	-2.87	.006	.10	.02	.19	.04	2.39	.02
Self-improvement	.43	.22	.63	.10	4.12	< .001	-.18	-.33	-.03	.08	-2.44	.02

Note. $N = 59$. Higher scores indicate a greater endorsement of negative self-compassion beliefs.

Table 2

Study 1 Regression Coefficients for Tests of the Indirect Effect of Negative Self-Compassion Beliefs (IV) on Responses to Scenarios (DV), Mediated by Self-Compassion (M)

Effects on Scenario Responses	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>
		LL	UL			
Emotion-focused coping (DV)						
Total effect	-.12	-.25	.02	.07	-1.76	.08
M → DV (controlling for X)	.40	.20	.60	.10	4.07	< .001
Direct effect	.01	-.13	.14	.07	.10	.92
Indirect effect	-.12	-.22	-.05	.05		
Problem-focused coping (DV)						
Total effect	-.13	-.29	.03	.08	-1.57	.12
M → DV (controlling for X)	.43	.18	.67	.12	3.48	.001
Direct effect	.01	-.16	.17	.08	.07	.94
Indirect effect	-.13	-.25	-.04	.05		
Avoidant coping (DV)						
Total effect	.10	.02	.19	.04	2.39	.02
M → DV (controlling for X)	-.14	-.28	.00	.07	-1.98	.05
Direct effect	.06	-.04	.16	.05	1.26	.21
Indirect effect	.04	-.02	.11	.03		
Self-improvement intentions (DV)						
Total effect	-.18	-.33	-.03	.08	-2.44	.02
M → DV (controlling for X)	.38	.15	.61	.12	3.27	.002
Direct effect	-.07	-.22	.09	.08	-.84	.41
Indirect effect	-.12	-.26	-.02	.06		

Note. *N* = 59. X: negative beliefs about self-compassion (higher scores indicate greater endorsement of negative self-compassion beliefs); M: intentions to respond with self-compassion; DV: dependent variable; Direct effect: X → DV (controlling for M).



Figure 1. Mediation of the effect of self-compassion beliefs on problem-focused coping by self-compassion in Study 1. Unstandardized regression coefficients are presented. The unstandardized regression coefficient between self-compassion beliefs and problem-focused coping, when controlling for people's intentions to respond with self-compassion, is in parentheses. $**p < .01$. $***p < .001$. Mediation by self-compassion for the outcomes of emotion-focused coping, avoidant coping, and self-improvement intentions can be similarly represented.

Discussion

Participants who endorsed more negative self-compassion beliefs reported lower intentions to respond to emotionally challenging scenarios with self-compassion. The lower their intentions to respond self-compassionately, the less likely participants were to report using adaptive coping strategies and the lower their self-improvement intentions. These results support the idea that negative self-compassion beliefs can pose barriers towards practicing self-compassion in times of adversity (Neff, 2015; Neff, 2003a, 2003b; Neff & Dahm, 2015), and that holding negative beliefs is associated with how adaptively people respond to challenging times.

While we found support for both of our primary hypotheses, how participants reacted to our hypothetical scenarios may not generalize to how they respond to real-world events. Study 2 addressed this by examining how people responded to one important event that affected the lives of many Americans—the 2016 U.S. presidential election.

Study 2: Negative Self-Compassion Beliefs Predict Responses to a Real-World Emotionally Challenging Event

In this study, we examined the role of peoples' beliefs about self-compassion in response to a political event of great importance to the American people: Donald Trump's inauguration as the President of the United States. Many Americans experienced emotional reactions following the election. For example, in a November 2016 survey of 1,254 U.S. residents, 53% reported feeling uneasy, 41% sad, 41% scared, and 31% angry in response to the election of Trump ("Pew Research Center" 2016). Many Americans continued to find the political climate stressful following President Trump's inauguration: in a January 2017 survey of 1,019 U.S. residents, 57% reported that the current political climate was a very or somewhat significant source of stress and 49% reported that the election outcome was a very or somewhat significant source of stress (American Psychological Association, 2017). Given the negative emotional response many Americans had in response to the 2016 U.S. presidential election, we found this a suitable context to study how people reacted to a real-world emotionally challenging event.

In Study 2, we tested the same hypotheses among individuals who experienced the inauguration as a negative event, specifically that (1) the more strongly they endorsed negative self-compassion beliefs, the less they would report practicing self-compassion in response to the inauguration; (2) the less they reported practicing self-compassion, the less they would report using adaptive coping strategies, the more they would report using maladaptive coping strategies, and the lower their self-improvement intentions in response to the event; and (3) there would be an indirect effect of negative self-compassion beliefs on these coping and self-improvement intentions, mediated by self-compassion.

Participants

In this field study, we planned as a conservative estimate to detect a smaller effect size than in Study 1. We conducted a power analysis in G-POWER to determine a sufficient sample size for a bivariate correlation using an alpha of .05, power of .80 and a small-medium effect size ($r = .20$; Cohen, 1992). Based on these assumptions, the desired sample size was 193.

Screening survey. We first screened for people who had experienced the political changes in America as an emotionally negative event, for recruitment in our survey. Forty-four days after the inauguration of Trump, we invited 529 people to complete a screening survey to ensure that we would have enough participants who met our criteria. We told participants the survey was part of a study about goal achievement. This survey included our main measures assessing peoples' political beliefs (i.e., how disappointed they felt with the unfolding policies, their voting decision, and their political views), along with filler questions about their self-reported goal achievement.

Main survey. Aiming for a final sample of 193, we sent out 285 study invitations 50 days after the inauguration. We sent invitations to all people who had reported feeling extremely dissatisfied ($n = 201$), dissatisfied ($n = 75$), or somewhat dissatisfied ($n = 33$) with the unfolding policies. On Amazon Mechanical Turk, 213 participants completed the study between 50 and 53 days after Trump's inauguration (i.e., a response rate of 75%). We decided a priori to exclude participants who failed an attention check question because inattention can affect data quality and statistical power (e.g., Maniaci & Rogge, 2014). Hence, we excluded 23 participants, leaving a final sample of 186 participants (98 men, 85 women, 2 nonbinary; $M_{\text{age}} = 36.6$, $SD_{\text{age}} = 11.2$; 75% White). Forty-five participants reported not voting; nine reported voting for Donald Trump (the Republican candidate); 108 for Hillary Clinton (the Democratic candidate); eight for Gary Johnson (the Libertarian candidate); seven for Jill Stein (the Green Party candidate); four for

another 3rd party candidate; and five did not disclose their voting decision. Fifty-three participants identified as “very liberal;” 78 as “liberal;” 35 as “moderate;” 18 as “conservative;” and two as “very conservative.”

Procedure

In our main survey, participants reported their opinions on the Trump Administration’s policies, as well as their reported practice of self-compassion, emotional responses, coping strategies, and self-improvement intentions in response to American politics. Afterwards, participants reported their negative self-compassion beliefs and their individual differences in self-compassion.

Policy opinions. To make opinions on political events salient during survey completion, participants first indicated the extent to which they agreed with twelve of the Trump Administration’s unfolding policies on a scale of 1 (Strongly disagree) to 7 (Strongly agree). Participants had the option of selecting “Unsure/Don’t know”. We included policies ranging from more controversial (e.g., repealing and replacing the Affordable Care Act) to less controversial (e.g., withdrawing from the Trans-Pacific Partnership).

Emotional responses. We measured participants’ negative emotions, as a check that they indeed felt negatively toward American politics following Trump’s inauguration. Participants indicated the degree to which they felt nine emotions (e.g., sad, angry, embarrassed) over the past two weeks about American politics on a scale ranging from 1 (Very slightly or Not at all) to 5 (Extremely). These negative emotion items were interspersed among filler questions about experiences of positive emotions. We again averaged the negative emotion items to create a composite negative emotion scale ($\alpha = .89$).

Coping responses. Participants reported how they coped with American politics over the past three days by completing an adapted version of the Brief COPE (Carver, 1997), described in Study 1. To keep the survey length reasonable, we excluded subscales that had not correlated with self-compassion intentions in Study 1 (humor, self-distraction, denial and substance abuse), with the exception of the venting subscale, which has previously been associated with individual differences in self-compassion (Neff et al., 2005). Again, we grouped coping strategies into three types: emotion-focused coping ($\alpha = .75$), avoidant coping ($\alpha = .77$), and problem-focused coping ($\alpha = .84$).

Reported practice of self-compassion. Participants reported how self-compassionately they responded over the past three days, similar to the adapted measure described in Study 1 (adapted from Raes et al., 2011). However, rather than frame items in the hypothetical as we did with the adapted items in Study 1 (e.g., “I would be intolerant and impatient towards those aspects of my personality I don’t like”), we framed these items to measure how in-the-moment responses (e.g., “I was intolerant and impatient towards those aspects of my personality I didn’t like”; $\alpha = .77$).

Self-improvement intentions. We assessed components of participants’ self-improvement intentions, namely their motivation (“I feel motivated to help promote a positive political climate,” and “I will engage actively in politics”), self-discipline (“I am trying to become more self-disciplined”), and self-responsibility (“I am taking personal responsibility for America’s current political climate” and “I will invest time and energy into promoting a positive political climate”) on a scale ranging from 1 (Strongly disagree) to 7 (Strongly agree). We again averaged items to again create a “self-improvement intentions” scale ($\alpha = .89$).

Negative self-compassion beliefs. Participants reported their negative self-compassion beliefs using the same 10 items described in Study 1 ($\alpha = .94$). For additional psychometric properties of the items, see Appendices C and D.

Individual Differences in Self-Compassion. Participants completed the 26-item Self-Compassion Scale to validate our adapted measure. Internal reliability of the scale was high ($\alpha = .95$).

Table 3

Study 2 Regression Coefficients of the Relationship Between Participants' Reported Practice of Self-Compassion and Their Negative Self-Compassion Beliefs, and Their Responses to Political Dissatisfaction (Including Coping, and Self-Improvement Intentions)

Responses to Political Event	Self-Compassion						Negative Self-Compassion Beliefs					
	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>
		LL	UL					LL	UL			
Emotion-focused	.22	.09	.35	.07	3.33	.001	.03	-.05	.12	.04	.83	.41
Problem-focused	.16	.01	.31	.08	2.16	.03	.09	.00	.18	.05	1.90	.06
Avoidant-focused	-.57	-.71	-.43	.07	-7.92	< .001	.28	.19	.37	.05	6.10	< .001
Self-improvement	.38	.06	.71	.16	2.33	.02	.09	-.11	.28	.10	.85	.40

Note. $N = 186$. Higher scores indicate a greater endorsement of negative self-compassion beliefs.

Results

Supplementary Table S3 presents correlations among all study measures.

Political event elicited negative emotions among sample. As expected, participants rated that the political event generally elicited negative emotions ($M = 3.18$, $SD = 0.93$). A one-sample t-test indicated that mean scores on the negative emotion items significantly differed from the midpoint of the scale (95% CI of the mean difference from midpoint = [.05, .32], $t(185) = 2.69$, $p = .008$).

Negative self-compassion beliefs predicted the reported practice of self-compassion.

Negative self-compassion beliefs were moderately negatively correlated with reported practice of self-compassion ($r = -.37, p < .001$). Consistent with Study 1, the more strongly participants endorsed negative self-compassion beliefs, the less they reported practicing self-compassion in response to the negative political event ($B = -.23, [-.31, -.14], SE = .04, t(184) = -5.44, p < .001$).

Self-compassion predicted self-reported adaptive coping and self-improvement intentions. Participants with greater self-compassionate responding reported using more adaptive strategies (emotion-focused coping, problem-focused coping), and fewer maladaptive coping strategies (avoidant coping). Participants with greater self-compassionate responding also reported greater self-improvement intentions (see Table 3).

Indirect effects. Next, we tested the predicted indirect effect of negative self-compassion beliefs on coping strategies and self-improvement intentions, through self-compassion. As hypothesized, all indirect effects were significant (see Table 4). The effect of participants' self-compassion beliefs on emotion-focused coping, problem-focused coping, avoidant coping, and self-improvement intentions were significantly mediated by their reported practice of self-compassion. Figure 2 represents the mediation results for problem-focused coping as an example.

Table 4

Study 2 Regression Coefficients for Tests of the Indirect Effect of Negative Self-Compassion Beliefs (IV) on Responses to Political Disappointment (DV), Mediated by Self-Compassion (M)

Effects on Responses to Political Event	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>
		LL	UL			
Emotion-focused coping (DV)						
Total effect	.03	-.05	.12	.04	.83	.41
M → DV (controlling for X)	.28	.14	.42	.07	3.97	< .001
Direct effect	.10	.01	.18	.04	2.27	.02
Indirect effect	-.06	-.11	-.03	.02		
Problem-focused coping						
Total effect	.09	.00	.17	.05	1.90	.06
M → DV (controlling for X)	.25	.09	.40	.08	3.15	.002
Direct effect	.14	.05	.24	.05	2.97	.003
Indirect effect	-.06	-.11	-.02	.02		
Avoidant coping						
Total effect	.28	.19	.37	.05	6.10	< .001
M → DV (controlling for X)	-.46	-.61	-.31	.07	-6.17	< .001
Direct effect	.18	.09	.27	.05	3.90	< .001
Indirect effect	.10	.06	.16	.03		
Self-improvement intentions						
Total effect	.08	-.11	.28	.10	.85	.40
M → DV (controlling for X)	.51	.16	.85	.18	2.88	.004
Direct effect	.20	-.01	.41	.11	1.87	.06
Indirect effect	-.11	-.20	-.04	.04		

Note. $N = 186$. X: negative beliefs about self-compassion (higher scores indicate a greater endorsement of negative self-compassion beliefs); M: self-compassion; DV: dependent variable; direct effect: $X \rightarrow DV$ (controlling for M).

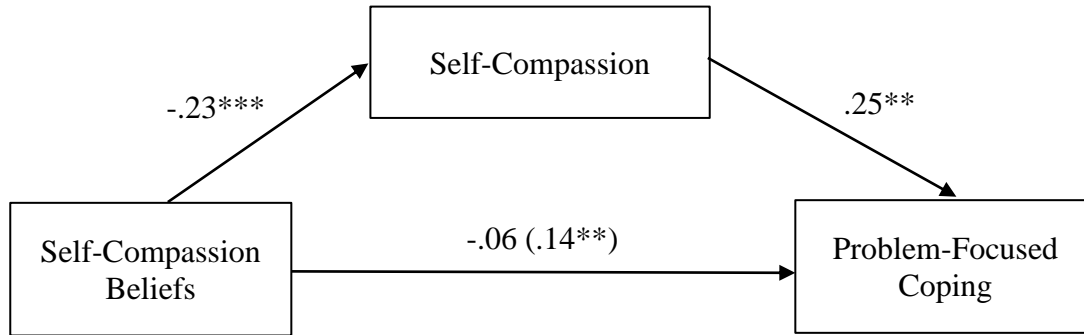


Figure 2. Mediation of the effect of self-compassion beliefs on problem-focused coping by self-compassion in Study 2. Unstandardized regression coefficients are presented. The unstandardized regression coefficient between self-compassion beliefs and problem-focused coping, when controlling for reported practice of self-compassion, is in parentheses. $^{**}p < .01$. $^{***}p < .001$. Mediation by reported practice of self-compassion for the outcomes of emotion-focused coping, avoidant coping and self-improvement intentions can be similarly represented.

Discussion

Replicating Study 1's findings in a real-world political context, we found in Study 2 that the stronger participants' negative self-compassion beliefs, the less self-compassion they reported when coping with disappointment following the American political election. In turn, the less people reported practicing self-compassion, the fewer adaptive coping strategies and more maladaptive coping strategies they reported using, and the lower their self-improvement intentions following the election.

These correlational findings lent support for our theorized model but are insufficient to infer causality. Therefore, our next study experimentally manipulated participants' beliefs about self-compassion and measured how likely they were to report responding self-compassionately to emotionally adverse events.

Study 3: Causal Effects of Beliefs about Self-Compassion

Study 3 employed a two-wave design to investigate whether experimentally manipulating beliefs about self-compassion would causally affect participants' intentions to practice self-compassion in response to emotional challenges, which in turn, would be related to their coping strategies and self-improvement intentions. At Time 1, we manipulated participants' beliefs about self-compassion; at Time 2, five to seven days later, participants indicated how they would respond to three emotionally challenging scenarios (that were the same as those used in Study 1; SOM Appendix A). We hypothesized that promoting positive, as opposed to negative, self-compassion beliefs, would increase participants' intentions to practice self-compassion in response to emotionally challenging scenarios presented five to seven days later. We again expected that intentions to be self-compassionate would relate to participants' use of more adaptive coping strategies (emotion-focused coping and problem-focused coping), fewer maladaptive coping strategies (avoidant coping), and greater self-improvement intentions. Finally, we tested the expected indirect effects described in earlier studies. Our random assignment controlled for individual differences in self-compassion and other factors that may explain the relationship between negative self-compassion beliefs and participants' reported intentions to practice self-compassion in the previous correlational studies.

Participants

We expected a medium to large effect size of our experimental manipulation, because past lay theories research using scientific articles or videos to experimentally induce different beliefs have generally found medium to large differences between conditions (e.g., Aronson, Fried, & Good, 2001; Hong et al., 1999; Schuman et al., 2014). Power analysis using G-POWER

with an alpha of .05 and specified power of .80 showed that a sample size of 90 would enable us to detect a predicted medium to large effect size of our manipulation ($d = .60$; Cohen, 1992).

Aiming for a final sample of 90, and taking attrition between parts 1 and 2 of the study (corresponding to Time 1 and Time 2, respectively) into account, we recruited 121 participants (50 women, 71 men; $M_{\text{age}} = 32.9$, $SD_{\text{age}} = 9.9$, 65% White) from Amazon Mechanical Turk for part 1. Eighty-eight of these participants (73% of the original sample) also completed part 2 of the study. Their demographic information did not significantly differ from those who completed only part 1 (33 women, 55 men; $M_{\text{age}} = 34.0$, $SD_{\text{age}} = 10.5$, 73% White).

Time 1 Pre-Manipulation Measures

We invited people to participate in a study on “goal achievement.” To support this cover story, we included filler questions about goal achievement. Before receiving the manipulation, participants completed the 26-item Self-Compassion Scale (SCS; Neff, 2003) ($\alpha = .95$), to assess whether our random assignment to condition worked.

Self-Compassion Beliefs Manipulation

We randomly assigned participants to read one of two fictitious *Psychology Today* articles—a method researchers have successfully used to change peoples’ beliefs (Chiu, Hong, & Dweck, 1997; Schumann et al., 2014).

Both articles detailed ways that people could respond to challenges so as to better achieve their goals. In the “positive self-compassion beliefs” condition, the article explained how self-compassion facilitates personal growth and goal achievement (e.g., “When we relate to ourselves in a self-compassionate way, it’s safe for us to acknowledge our shortcomings and face the truth about ourselves... [Next time I make a mistake, I’ll] remember that being understanding of my slip-ups... pays dividends;” SOM Appendix E). In the “negative self-compassion beliefs”

condition, the article explained how self-compassion hinders personal growth and goal achievement (e.g., “When we relate to ourselves in a self-compassionate way, it’s difficult for us to acknowledge our shortcomings and face the truth about ourselves... [Next time I make a mistake, I’ll] remember that being critical of my slip-ups... pays dividends”; SOM Appendix F). As a manipulation check, participants reported their negative self-compassion beliefs using the same items as in earlier studies ($\alpha = .93$).

Time 2 Post-Manipulation Measures

Five days later, participants received a link to a survey where they responded to the three emotionally challenging scenarios used in Study 1 by reporting their emotions, intentions to practice self-compassion, intended coping strategies, and self-improvement intentions.

Participants had up to two days to complete this survey.

Emotional responses. Participants indicated the degree to which they would feel nine negative emotions (e.g., sad, anxious, angry) if the scenario had *just* occurred to them, on a scale ranging from 1 (Very slightly or not at all) to 5 (Extremely). We averaged them into a composite score of negative emotions (α averaged across scenarios = .94).

Responding Self-Compassionately to Emotionally Challenging Scenarios. We used our same self-compassion measure described in Study 1 (α averaged across scenarios = .91).

Coping responses. We used the same coping measures described in Study 2 (α s for each of the three coping types, averaged across scenarios > .66).

Self-improvement intentions. Participants completed the same items described in Study 1 ($\alpha = .85$).

Results

Supplementary Table S4 presents correlations among all study measures.

Negative emotions check. On average, participants rated that each of the three scenarios presented elicited negative emotions (scenario 1: $M = 3.71$, $SD = 1.04$; scenario 2: $M = 3.59$, $SD = .89$; scenario 3: $M = 3.56$, $SD = .95$). We again averaged negative emotions across scenarios. A one-sample t-test indicated that mean scores on the negative emotion items, averaged across scenarios, ($M = 3.62$, $SD = .79$), were significantly different than the scale's midpoint ($[.45, .79]$, $t(87) = 7.31$, $p < .001$).

Time 1 pre-manipulation measures. Results showed that our randomization was effective: participants' scores on the pre-manipulation survey measures, including their individual differences in self-compassion and demographics, did not differ by condition (all $ps > .40$).

Manipulation checks. Our articles successfully influenced participants' Time 1 beliefs about self-compassion: participants randomly assigned to the negative self-compassion beliefs condition endorsed negative self-compassion beliefs more ($M = 3.35$, $SD = 0.84$; $N = 61$) than those assigned to the positive self-compassion beliefs condition ($M = 2.61$, $SD = 0.99$; $N = 60$; 95% CI of the mean difference = $[.41, 1.07]$, $t(119) = 4.45$, $p < .001$, $d = .81$).

Promoting positive self-compassion beliefs increased self-compassionate responding. Importantly, our findings showed that promoting positive self-compassion beliefs significantly increased participants' intentions to practice self-compassion in response to the emotionally challenging scenarios, five to seven days later (see Figure 3). Participants in the positive self-compassion beliefs condition reported that they would respond to the scenarios with greater self-compassion ($M = 3.22$, $SD = .81$; $N = 39$) than those in the negative self-compassion beliefs condition ($M = 2.80$, $SD = .73$; $N = 49$; 95% CI of the mean difference = $[-.75, -.10]$, $t(86) = -2.57$, $p = .01$, $d = .54$). The manipulation influenced participants' intentions to respond self-

compassionately to the scenarios ($B = .42$, $[.10, .75]$, $SE = .16$, $t(86) = 2.57$, $p = .01$), even when controlling for their individual differences in self-compassion ($B = .31$, $[.08, .54]$, $SE = .12$, $t(85) = 2.66$, $p = .01$).

Self-compassion predicted self-reported coping and self-improvement intentions. As hypothesized, self-compassion was associated with participants' coping strategies and self-improvement intentions in response to the scenarios. Participants' with greater self-compassionate responding at Time 2 reported using more emotion-focused coping ($B = .12$, $[.01, .24]$, $SE = .06$, $t(86) = 2.17$, $p = .03$), more problem-focused coping ($B = .17$, $[.03, .30]$, $SE = .07$, $t(86) = 2.45$, $p = .02$), and less avoidant coping ($B = -.45$, $[-.55, -.34]$, $SE = .05$, $t(86) = -8.46$, $p < .001$). Reported intentions to practice self-compassion were also related to greater self-improvement intentions, but this relationship did not reach statistical significance ($B = .15$, $[-.02, .33]$, $SE = .09$, $t(86) = 1.79$, $p = .08$).

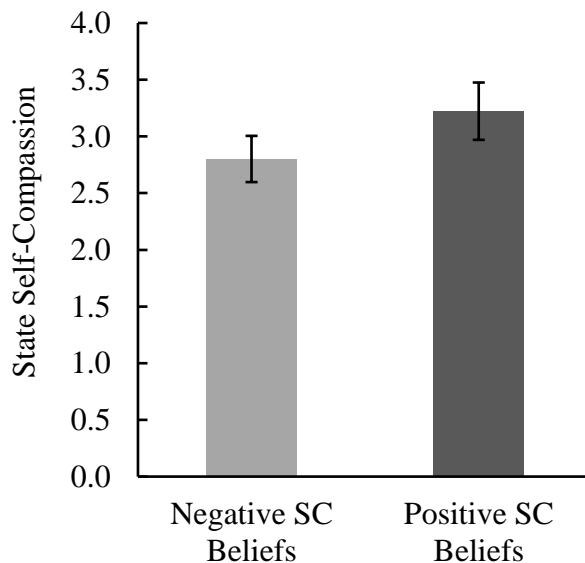


Figure 3. Reported intentions to practice self-compassion by condition. SC: self-compassion. Error bars depict +/- 1 SE.

Indirect effects. We tested the hypothesized indirect effects (regression coefficients summarized in Table 5). As aforementioned, participants in the positive self-compassion beliefs condition reported greater intentions to respond to the scenarios with self-compassion than those in the negative self-compassion beliefs condition. Controlling for condition, greater reported practice of self-compassion predicted greater reported use of adaptive emotion-focused and problem-focused coping strategies, and less use of maladaptive avoidant coping strategies. However, contrary to our hypothesis, self-compassion did not significantly predict greater self-improvement intentions when controlling for condition.

Results demonstrated significant indirect effects of condition on emotion-focused coping, problem-focused coping, and avoidant coping through self-compassion as a mediator. The indirect effect on self-improvement intentions trended in the predicted direction but was not statistically significant. Figure 4 illustrates mediation results for problem-focused coping, as an example.

Table 5

*Study 3 Regression Coefficients for Tests of the Indirect Effect of Self-Compassion**Beliefs Condition (IV) on Scenario Responses (DV), Mediated by Self-Compassion (M)*

Effects on Scenario Responses	<i>B</i>	95% CI		<i>SE</i>	<i>t</i>	<i>p</i>
		LL	UL			
Emotion-focused coping (DV)						
Total effect	-.01	-.20	.17	.09	-.15	.88
M → DV (controlling for X)	.13	.02	.25	.06	2.28	.02
Direct effect	-.07	-.25	.11	.09	-.76	.45
Indirect effect	.06	.002	.15	.04		
Avoidant coping (DV)						
Total effect	-.29	-.50	-.07	.11	-2.65	.01
M → DV (controlling for X)	-.43	-.54	-.32	.05	-7.85	<.001
Direct effect	-.11	-.28	.07	.09	-1.23	.22
Indirect effect	-.18	-.32	-.04	.07		
Problem-focused coping (DV)						
Total effect	.01	-.21	.23	.11	.10	.92
M → DV (controlling for X)	.18	.04	.32	.07	2.51	.01
Direct effect	-.06	-.29	.16	.11	-.57	.57
Indirect effect	.07	.00	.20	.06		
Self-improvement intentions (DV)						
Total effect	.13	-.14	.40	.14	.93	.35
M → DV (controlling for X)	.14	-.04	.32	.09	1.59	.12
Direct effect	.07	-.21	.35	.14	.48	.63
Indirect effect	.06	-.02	.18	.05		

Note. $N = 88$. X: beliefs about self-compassion condition (0 = “negative self-compassion beliefs” condition; 1 = “positive self-compassion beliefs” condition); M: intentions to respond with self-compassion; DV: dependent variable; direct effect: $X \rightarrow DV$ (controlling for M).

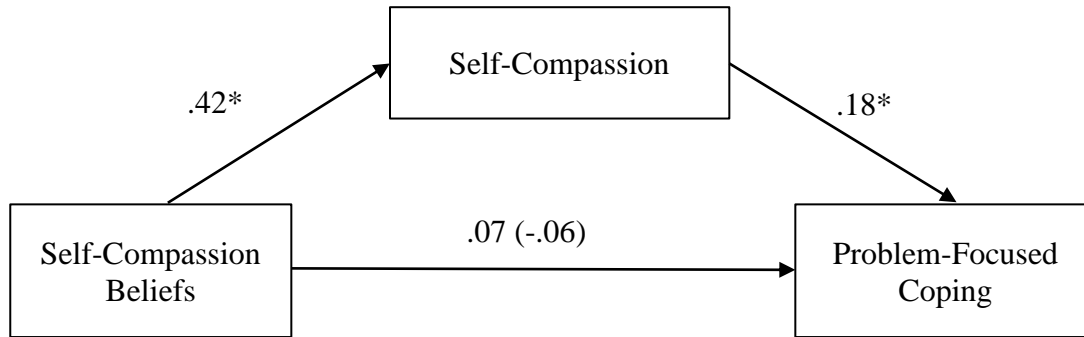


Figure 4. Mediation of the effect of self-compassion beliefs manipulation (0 = “negative self-compassion beliefs” condition; 1 = “positive self-compassion beliefs” condition) on problem-focused coping by self-compassion in Study 3. Unstandardized regression coefficients are presented. The unstandardized regression coefficient between self-compassion beliefs and problem-focused coping, when controlling for people’s intentions to respond with self-compassion, is in parentheses. $*p < .05$. Mediation by self-compassion for the outcomes of emotion-focused coping, avoidant coping and self-improvement intentions can be similarly represented.

Discussion

Our Study 3 results found evidence supporting a causal relationship between peoples’ beliefs about self-compassion and their intentions to respond self-compassionately. In turn, the higher people’s intentions to practice self-compassion, the greater their reported use of emotion-focused coping strategies, and the lower their reported use of maladaptive coping strategies. As before, we found indirect effects of peoples’ self-compassion beliefs on these coping patterns, mediated by their self-compassion. Unlike our previous correlational studies, there was a weak relation between reported intentions to practice self-compassion and self-improvement intentions here, hence, there was only a small and nonsignificant indirect effect for this outcome. Future studies should replicate this effect with larger samples and stronger belief manipulations. Overall, this study provides empirical evidence that: (1) it is possible to change peoples’ beliefs about self-compassion with a brief belief induction article, with effects lasting over a period of

five to seven days; and (2) changing peoples' beliefs about self-compassion can potentially improve how they respond to emotional challenges.

General Discussion

Self-compassion carries a range of psychological, physical, and interpersonal benefits (e.g., MacBeth & Gumley, 2012; Hall et al., 2013; Yarnell & Neff, 2013), yet many people do not treat themselves self-compassionately (Neff, 2003b). Our studies empirically examined the implications of an important barrier to developing self-compassion: peoples' negative self-compassion beliefs. Across three studies, we found that people with stronger negative self-compassion beliefs reported practicing less self-compassion in response to a real-world event and hypothetical scenarios. In turn, the less people reported practicing self-compassion, the less they reported using adaptive coping strategies, the more they reported using maladaptive coping strategies, and the lower their self-improvement intentions. Exposing people to a brief online message can change their beliefs about self-compassion, causally influencing their intentions to practice self-compassion—and reap its benefits—five to seven days later.

Implications

Prior research has suggested that negative beliefs and emotions about self-compassion can be self-fulfilling, by reducing peoples' likelihood of practicing self-compassion (Gilbert et al., 2011; Robinson et al., 2016). Therefore, earlier self-compassion interventions have often included, along with skills training, educational content explaining how negative self-compassion beliefs are often misconceptions (e.g., Germer & Neff, 2019; Gilbert & Proctor, 2006; Neff & Germer, 2018). However, it had yet to be empirically established whether these beliefs in and of themselves causally affect peoples' self-compassionate responding. Our work extends prior research by specifically isolating these negative self-compassion beliefs—and

demonstrating that these beliefs, on their own, are associated with peoples' intentions to respond self-compassionately to hypothetical scenarios (Studies 1 and 3) and also their actual practice of self-compassion during real-world emotional challenges (Study 2). Moreover, the good news, as our results show, is that changing peoples' beliefs about self-compassion increases their intentions to practice self-compassion during difficult times, and in turn that self-compassion is associated with better coping and (to a smaller extent) greater self-improvement intentions. Therefore, our work contributes by showing that providing psychoeducation around negative self-compassion beliefs is itself an important, active treatment component in self-compassion interventions.

Our findings also suggest practical implications for intervening on self-compassion. Typically, self-compassion interventions take place in-person, over multiple sessions and are delivered by highly specialized practitioners (e.g., Germer & Neff, 2013; Gilbert, 2010; Kirby, Tellegen, & Steindl, 2017). While generally effective, these interventions are costly and dependent on specialized providers, of which there is often a shortage. Our results demonstrate that a brief online message can increase reported intentions to practice self-compassion—highlighting the promise of briefer, technology-delivered interventions (e.g., Mantelou, & Karakasidou, 2017; Mitchell, Whittingham, Steindl & Kirby, 2018; Smeets, Neff, Alberts, & Peters, 2014). Such approaches are scalable, with the potential to reach a diverse sample of people who might otherwise not have access to specialized services. Yet, there is not enough research on the efficacy of brief, scalable online interventions to improve self-compassionate responding. Our work contributes practically by demonstrating one possible method (a brief online article educating people about self-compassion) that effectively raised self-compassion in a randomized, controlled experiment.

In addition, our research contributes to the rich literature on lay theories by extending it, for the first time, to the domain of self-compassion. We introduce beliefs about self-compassion as important lay theories that affect how people cope with adversity. To our knowledge, these studies are the first to demonstrate the causal effects of peoples' lay theories about self-compassion on their reported practice of self-compassion and its outcomes. This extends lay theory research, which has primarily focused on motivation and performance-related outcomes, such as persistence, and cognitive performance, and academic grades (Blackwell et al., 2007; Dweck & Yeager, 2019; Hong et al., 1999), and to a lesser extent, emotion regulation (e.g., Romero, Master, Paunesku, Dweck, & Gross, 2014; Schumann et al., 2014; Tamir, John, Srivastava, & Gross, 2007). Our studies underscore that people also hold beliefs about self-compassion, and that changing these beliefs fundamentally influences how they approach negative life events.

Limitations and Future Directions

Our sample sizes, particularly in Studies 1 and 3, were modest. To supplement this, we conducted an internal meta-analysis of our results across our studies, which showed that our hypothesized effects were robust (see SOM Appendix G).

The main goal of our studies was to explicate how negative self-compassion beliefs affect the practice of self-compassion, as well as coping and self-improvement outcomes. Our negative self-compassion beliefs measure was an operationalization of this key construct, which was inspired by prior theories about self-compassion beliefs (e.g., Neff & Germer, 2013). Importantly, this operationalization tracked the psychological process we theorized. Future work can build upon our studies to refine and replicate these promising albeit preliminary psychometric properties of the negative self-compassion beliefs measure (see SOM Appendices

C and D), and to compare the predictive value of this measure against potentially related constructs, such as fears of self-compassion (Gilbert et al., 2011). It is plausible that the Fears of Self-Compassion Scale, which emphasizes *affective* responses to self-compassion (including feelings of sadness, loss, emptiness, and fear; Gilbert et al., 2011), would be related to, yet theoretically and empirically distinguishable from, a measure of peoples' cognitive lay beliefs about the effectiveness of self-compassion.

Because we were interested in assessing (and changing) peoples' immediate reactions to hypothetical and real-life events, it was necessary to adapt the well-established Self-Compassion Scale—Short Form (Raes et al., 2011) into a measure that would capture peoples' practice of self-compassion in response to a specific situation. Supporting its construct validity, our self-compassion measure correlated highly with this individual difference measure (Study 1 $r = .92$; Study 2 $r = .75$; Study 3 $r = .72$). Hence, our self-compassion measure appeared to be appropriate for measuring self-compassionate responding in a specific context. Future research can build upon our current measure to further develop and validate it, such as by testing its discriminant validity with related constructs, including neuroticism (Pfattheicher et al., 2017), or adding reverse-scored items.

To begin examining the effects of negative self-compassion beliefs, we primarily utilized self-report measures—a method consistent with prior literature that typically employs self-report methods to assess self-compassion, coping, and self-improvement intentions (Breines & Chen, 2012; Leary et al., 2007; Neff et al., 2005; Sirois et al., 2015; Zhang & Chen, 2016). Future studies could utilize behavioral outcome measures of self-compassion where appropriate.

Relatedly, Studies 1 and 3 relied on hypothetical scenarios, which we complemented with a real-

world Study 2 of the United States Presidential elections. For external validity, new studies could extend our work to a wider array of naturalistic settings.

Our findings provide a start to showing that it is possible to change peoples' beliefs about self-compassion and that these effects can last a week. There is a need for more longitudinal studies to track how long these effects persist, and further intervention research to continue refining the current manipulations into interventions that can create long-lasting change in peoples' beliefs about self-compassion.

Conclusion

Self-compassion plays a powerful role in shaping how adaptively people respond to life's difficulties, however peoples' negative beliefs about self-compassion can pose obstacles to practicing it. Our research suggests that psychoeducation to correct these beliefs can be an important, active component of self-compassion interventions (Germer & Neff, 2019; Gilbert & Proctor, 2006; Neff & Germer, 2018). These findings provide a stepping stone to what we hope will be more research on self-compassion beliefs and their implications. Such research could enable researchers and practitioners to more effectively promote self-compassion, especially amongst people who might otherwise face psychological barriers toward practicing it.

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Author Contributions

C.C. designed the studies with guidance from P.C. and J.Z. C.C. collected the data. C.C. analyzed the data in consultation with P.C. C.C. and P.C. wrote the manuscript, and J.Z. provided critical feedback.

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