

## **SELF-COMPASSION SOOTHES THE SAVAGE EGO-THREAT SYSTEM: EFFECTS ON NEGATIVE AFFECT, SHAME, RUMINATION, AND DEPRESSIVE SYMPTOMS**

EDWARD A. JOHNSON AND KAREN A. O'BRIEN  
*University of Manitoba*

Self-compassion, involving self-kindness, common humanity, and mindfulness, appears well-suited to soothing feelings of threat following negative events and thereby reducing depressive sequelae. Study 1 found a strong negative association between self-compassion and depressive symptoms in 335 university students and evaluated four markers of threat that potentially mediate this relation. A test of multiple mediation revealed shame as a significant mediator, along with rumination and self-esteem. In Study 2, shame-prone students recalled an experience of shame and then were randomly assigned to (1) write about it self-compassionately, (2) express their feelings about it in writing, or (3) do neither. Participants completed their assigned task three times in one week. Immediately after writing, participants in the self-compassion condition reported less state shame and negative affect than those in the expressive writing condition. At two-week follow-up, participants in the self-compassion condition alone showed reductions in shame-proneness ( $d = .53$ ), and depressive symptoms ( $d = .49$ ). It appears that self-compassion promotes soothing, "hypo-egoic" (Leary, 2012) responses to negative outcomes that reduce threat system activation and depressive symptoms.

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Address correspondence to Edward A. Johnson, P416 Duff Roblin Building, Department of Psychology, University of Manitoba, 190 Dysart Rd., Winnipeg, MB, R3T 2N2, Canada; E-mail: ed\_johnson@umanitoba.ca

Negative experiences, including stressful life events, have long been noted to contribute to the onset and maintenance of depressive symptoms (Hammen, 2005; Hovens et al., 2012; Kessler, 1997). For instance, experiencing financial stress or violence in the past year is associated with attempting suicide that year (Wang et al., 2012). According to the cognitive theory of depression, the emotional impact of stressful events is exacerbated when dysfunctional attitudes are present and result in self-critical attributions for negative events (Clark & Beck, 1999). Consequently, efforts to prevent or mitigate depressive symptoms depend partly upon altering such dysfunctional attitudes. Self-compassion, which consists in attitudes and acts of self-kindness and self-acceptance along with mindful awareness of feelings, offers a means of disarming overly self-critical responses to negative events and thereby maintaining positive mental health (Neff, 2003a, 2011).

One way that self-compassion may enhance mental health is by reducing the tendency for dysfunctional interpretations of negative events to activate the psycho-physiological threat system. According to Gilbert (2005) both human and non-human species exhibit a common set of physiological and behavioral responses (the threat system) to stressful experiences of involuntary subordination, including heightened activity in the hypothalamic-pituitary axis (HPA) resulting in the release of cortisol, as well as experiential changes (e.g., shame, reduced positive affect) that motivate behavioral withdrawal. With recurring, or chronic, negative events there is the potential for prolonged hyperactivity in the HPA and for a pervasive sense of shame, both of which have been linked to depression (Holsboer, 2000; Kim, Thibodeau, & Jorgensen, 2011). For instance, the contribution of experiences of abuse in childhood to recurrent depression in adulthood is mediated by shame (Andrews, 1995). If self-compassion can interrupt the tendency for self-critical responses to negative events to activate the threat system it may be possible to reduce depressive symptoms. Accordingly, the present study sought to examine whether naturally occurring and experimentally-induced variations in self-compassion reduced activation of psychological markers of the threat system, such as shame, as well as depressive symptoms.

Shame is a negative self-conscious emotion that has long been a subject of interest in clinical writing but has only attracted sustained scientific attention in the past two decades, in part because it has often been confused with the related construct of guilt (Tangney

& Dearing, 2002). Shame and guilt differ, however, in several important respects. In shame the object of negative evaluation is the whole self whereas in guilt it is a specific behavior (Lewis, 1971). They also differ in attributional patterns (stable and global for shame, unstable and specific for guilt), direction of attentional focus (inward for shame, outward for guilt), phenomenology (worthless, bad in shame; tense, remorseful in guilt), action tendencies (escape or avoidance for shame; approach and repair for guilt), and accompanying emotions (pain, anger, anxiety for shame; less pain, sorrow, empathy for guilt; Tangney & Dearing, 2002). Understood in this way, shame is now beginning to be appreciated as having a unique and significant association with mental illness. Research has linked shame to numerous forms of psychopathology (Tangney & Dearing, 2002) as well as to self-harm (Gilbert et al., 2010). These findings suggest that, when treating depression, devising interventions that reduce shame is an important goal.

There is reason to expect that self-compassion may reduce experiences of shame in response to negative events. The three components of self-compassion (self-kindness, common humanity, and mindful awareness) appear well suited to countering prominent elements of the shame experience, such as negative self-evaluation, social withdrawal, and mental avoidance of distressing events. Specifically, self-kindness can soften self-criticism and negative self-evaluation, acceptance of one's common humanity can lessen the perceived need for behavioral withdrawal and social isolation, and mindful awareness of feelings can decrease the tendency to mentally avoid or suppress natural emotional reactions to negative events. Consistent with this conceptualization, Barnard and Curry (2012) found self-compassion was strongly negatively correlated with shame, but unrelated to guilt in a sample of Christian clergy. Also, in clinical research, an intervention designed to promote compassion towards the self reduced self-criticism and shame (Gilbert & Procter, 2006).

Taken together, these findings suggest two promising hypotheses. First, self-compassion may represent a potent, new but relatively untapped, resource for preventing or reducing depressive symptoms in the aftermath of negative life events. Secondly, such an effect, if found, would likely result from the ability of self-compassion to reduce the activity of the threat system.

To test these ideas we constructed two inter-related studies. In the first, a correlational design was used to examine whether naturally occurring differences in self-compassionate attitudes in young

adults are associated with lower levels of depression and, if so, whether this effect was mediated by differences in variables known to influence the development of depression, including shame. In the second, a randomized experimental design was used to determine whether shame-prone individuals show benefits, immediately and at two-week follow-up, from using self-compassion to process experiences of shame relative to controls.

## STUDY 1

In addition to shame, our review of the literature identified three other plausible mediators of the hypothesized effect of self-compassion on depression: guilt, rumination, and self-esteem. At present guilt has an ambiguous relationship with mental health in general and depression specifically. Guilt is a negative self-evaluative emotion and excessive or inappropriate guilt is officially listed as a symptom of depression in the DSM (American Psychiatric Association, 2000). However, efforts to distinguish guilt from shame have led to guilt being reconceptualized as a distinct feeling state in which negative self-evaluation applies only to a specific behavior rather than the whole self, and involves a motivation to atone for the behavior or repair a relationship affected by the behavior (Tangney & Dearing, 2002). Research has shown that although guilt typically exhibits a moderate positive correlation with depressive symptoms, when shared variance with shame is partialled out the association of guilt with depression effectively becomes zero (Kim, Thibodeau, & Jorgensen, 2011). Accordingly, we hypothesized that guilt would demonstrate positive zero-order links to depressive symptoms which would drop out when shared variance with shame was controlled, and that shame-free guilt would not mediate any effect of self-compassion on depressive symptoms.

Global self-esteem is a summary evaluation of our worth as individuals. Prospective longitudinal research examining stability and change in global self-esteem during adolescence and young adulthood has shown that although many persons experience stable, high global self-esteem, other patterns are also consistently found, including chronically low self-esteem or declining global self-esteem (Hirsch & Dubois, 1991). These latter patterns are associated with greater symptoms of depression at age 30 (Birkeland, Melkevik, Holsen, & Wold, 2012). This finding is consistent with the

view that low (Beck, 1967) or contingently variable (Kernis, 2005) self-esteem heightens vulnerability to depression, a view supported by longitudinal research (Orth, Robins, & Roberts, 2008). From the perspective of this vulnerability model, an important question concerns whether self-compassion can enhance the strength and resilience of self-esteem in the face of negative events that may arise in adolescence and early adulthood. The typically strong positive correlation found between self-compassion and self-esteem (Barnard & Curry, 2011) supports this idea, as does the strong negative correlation between self-compassion and contingent self-esteem (Neff & Vonk, 2009). Neff (2011) argues that global self-esteem and self-compassion represent two related, but distinct, ways that individuals regulate well-being and that holding self-compassionate attitudes may promote a more genuine, less contingent, form of self-esteem. Based on these theoretical and empirical linkages, we hypothesized that global self-esteem would mediate any observed relationship between self-compassion and depressive symptoms.

Rumination has also been proposed as a vulnerability factor for depression. Rumination involves repetitive thinking about, and evaluation of, the self in a maladaptive effort to understand one's inadequacies and symptoms of distress (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Watkins, 2008). Meta-analyses show moderate to large linkages between ruminative thinking and symptoms of depression (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Rood, Roelofs, Bogels, Nolen-Hoeksema, & Schouten, 2009). Neff (2003a, 2011) proposes that self-compassion may lessen distress over inadequacies and failures that typically prompt rumination. Cross-sectional research has shown that the beneficial effects of self-compassion on symptoms of depression are substantially mediated by rumination (Raes, 2010). Moreover, an intervention study using the Gestalt two-chair technique found that, after using the procedure to process a situation in which they had been self-critical, students who subsequently reported higher levels of self-compassion reported less rumination (Neff, Kirkpatrick, & Rude, 2007). Based on these findings and conceptualization, we hypothesized that rumination would mediate any observed association between self-compassion and depressive symptoms.

Including guilt, self-esteem, and rumination, along with shame, as potential mediators allowed for a more comprehensive evaluation of how self-compassion may affect depression. As well, their

inclusion permitted the shame pathway to be subjected to a more rigorous test against other known influences on depression.

## METHOD

### Participants

Because of the enduring and disabling nature of shame-proneness (Tangney & Dearing, 2002) it is important to examine how it can be relieved in younger adults where the potential exists for improving quality of life for a lifetime. Accordingly, the study sample examined young adults (under 40 years old) at a western Canadian university, which provided ethical approval for the study. To achieve adequate power (.80) for both studies, Study 1 required at least 300 participants. This ensured that the required minimum of 30 in each of Study 2's three experimental conditions were available from among those scoring above the median on shame-proneness in Study 1. In fact, 354 students initially volunteered to complete Study 1 for course credit and 335 of them (252 women, 81 men, 2 not specified) provided complete, useable data. The mean age of these participants was 19.02 (range 17–37). Although a slight majority of participants self-identified as White ( $n = 180$ ), a variety of other ethnicities were present including Filipino ( $n = 48$ ), Chinese, ( $n = 35$ ), Black African ( $n = 13$ ), Other ( $n = 13$ ), and seven other groups with  $n \leq 10$ .

### Materials And Procedure

The study was conducted on-line using SurveyGizmo. After consenting, participants provided demographic information and were then presented with the following measures in randomized order.

*Shame and Guilt.* The Test of Self-Conscious Affect (TOSCA-3; Tangney, Dearing, Wagner, & Gramzow, 2000) is a widely used measure of trait shame. The short version employed uses 11 different scenarios in which the respondent is portrayed as causing a negative outcome (e.g., breaking an expensive piece of office equipment) to assess tendencies to respond with guilt or shame. Each type of response is scored using a 1 (not likely) to 5 (very likely) scale. The State Shame and Guilt Scale (SSG; Marschall, Sanftner, & Tangney, 1994) captures current feelings and includes five shame items (e.g.,

I feel humiliated, disgraced), five guilt items (e.g., I feel remorse, regret), and five positively-valenced filler items, which are rated on a 5-point scale from 1 (not feeling this way at all) to 5 (feeling this way very strongly).

*Self-Compassion.* The 26-item Self-Compassion Scale (SCS; Neff, 2003b) was administered using a 7-point scale ranging from 1 (almost never) to 7 (almost always). Neff (2003b) conceptualized self-compassion as a higher-order construct consisting of three lower-level bipolar constructs: self-kindness (versus self-judgment), common humanity (versus isolation), and mindfulness (versus overidentification). The 13 negatively-valenced items were reverse scored and added to the 13 positively-valenced items to provide a total self-compassion score (Neff, 2003b).

*Other Measures.* Symptoms of depression were measured with the 21-item Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). Ruminative thinking was assessed with the 12 rumination items (sample item: Sometimes it is hard for me to shut off thoughts about myself) from the Reflection and Rumination Questionnaire (RRQ; Trapnell & Campbell, 1999). Participants responded to all items on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Self-esteem was measured using Rosenberg's (1965) 10-item Self-Esteem Scale (RSE), which employs a 4-point scale ranging from 1 (strongly agree) to 4 (strongly disagree). Total scores were reversed so that higher scores reflected greater self-esteem. At the conclusion of Study 1, respondents reported on several measures of response integrity, including honesty, attentiveness, and distractedness on a 5-point scale. Survey software also measured time to complete the survey. These measures did not identify any problematic candidates for removal from the study.

## RESULTS

### DESCRIPTIVE STATISTICS

Preliminary analyses revealed that shame and guilt showed substantial shared variance in both state ( $r = .66, p < .001$ ) and trait ( $r = .34, p < .001$ ) forms. Following Tangney and Dearing (2002), "purified" residualized measures of guilt-free shame and shame-free guilt were constructed for both state and trait scales. Table 1 presents means, standard deviations, Cronbach alphas, and inter-

TABLE 1. Descriptive Statistics and Correlations of Study 1 Measures (N = 335)

Variable	Mean	SD	2	3	4	5	6	7	8
1. Self-Compassion	99.09	22.20	-.22***	-.06	-.43***	.05	.60***	-.52***	-.49***
2. State GFShame	8.57	3.80		-.67***	.19**	-.17**	-.43***	.02	.39***
3. State SFGuilt	11.29	4.98			.04	.15**	-.03	.24***	.06
4. Trait GFShame	32.69	7.42				-.34***	-.43***	.28***	.29***
5. Trait SFGuilt	44.69	5.91					.15**	.07	-.06
6. Self-Esteem	29.09	4.64						-.38***	-.62***
7. Rumination	39.83	4.68							.38***
8. Depression	11.35	7.96							

Note. SF = Shame Free; GF = Guilt Free. Means and standard deviations for Shame and Guilt measures reflect the original, unresidualized scales.

\*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$

correlations among study variables. All scales showed adequate to excellent reliability. As hypothesized, self-compassion was significantly negatively correlated with depressive symptoms, guilt-free trait shame, and rumination, positively correlated with self-esteem, and not correlated with shame-free trait guilt.

### Mediational Analyses

Following the recommendations of Preacher and Hayes (2008) tests of simple and multiple mediation were conducted using bias-corrected bootstrapping to measure indirect effects. Table 2 presents point estimates of the product of the a and b mediation paths along with bias-corrected and accelerated confidence intervals based on 5,000 bootstrap samples, for both simple and multiple mediator models. To improve normality, log depression and square root shame scores were used. Tests of simple indirect effects (Table 2, top part) indicated that all four putative mediators, when considered individually, functioned to mediate the relationship between self-compassion and depressive symptoms.

Tests of multiple indirect effects are presented in the bottom part of Table 2. When entered simultaneously, the set of four mediators produced a total indirect effect of self-compassion on depressive symptoms of -.0194 with a bias-corrected confidence interval of -.0246 and -.0146 indicating significant mediation. Of the four mediators, shame, rumination, and self-esteem emerged as unique significant mediators of the self-compassion-depressive symptom relationship whereas guilt did not. The total and direct effects of

**TABLE 2. Simple and Multiple Mediation of the Indirect Effects of Self-Compassion on Depressive Symptoms through State Shame (Shame) State Guilt (Guilt), Rumination, and Self-Esteem (5000 samples;  $N = 335$ )**

Mediator	Product of Coefficients	Bootstrapping BCA 95% CI	
	Point Estimate	Lower	Upper
Simple Indirect Effects			
Shame	-.0561*	-.0790	-.0377
Guilt	-.0316*	-.0494	-.0179
Rumination	-.0319*	-.0512	-.0146
Self-Esteem	-.1095*	-.1420	-.0779
Multiple Indirect Effects			
Shame	-.0047*	-.0080	-.0021
Guilt	-.0006	-.0026	.0013
Rumination	-.0037*	-.0068	-.0011
Self-Esteem	-.0104*	-.0160	-.0058
Contrasts			
Shame vs. Guilt	-.0041*	-.0086	-.0003
Shame vs. Rumination	-.0010	-.0049	.0029
Shame vs. Self-Esteem	.0057	-.0003	.0131
Guilt vs. Rumination	.0031	-.0004	.0069
Guilt vs. Self-Esteem	.0098*	.0050	.0156
Rumination vs. Self-Esteem	.0067*	.0006	.0133

Note. BCA = Bias Corrected and Accelerated. \* $p < .05$

self-compassion on depressive symptoms were  $B = -.0287$ ,  $p < .001$  and  $B = -.0093$ ,  $p < .01$ , respectively. When specific indirect effects were contrasted, the only significant differences in magnitude were found between shame and guilt, guilt and self-esteem, and rumination and self-esteem.

## DISCUSSION

Study 1 provided support for a number of the hypothesized relations. First, consistent with theoretical claims (Neff, 2003a, 2011) and empirical evidence (Leary, Tate, Adams, Allen, & Hancock, 2007; Neff, 2003b) self-compassion was found to be significantly and substantially associated with lower symptoms of depression. Second, tests of simple indirect effects supported the mediating role of all four of the putative mediators when considered individually.

The test of multiple mediation, however, revealed that only three of the four variables, shame, rumination, and self-esteem, functioned as mediators in the presence of the others. Self-esteem provided a larger indirect effect than did rumination, but shame did not differ from either self-esteem or rumination.

The main upshot of these findings is that shame served to mediate the effects of self-compassion on depressive symptoms, even when other plausible mediators were controlled in the analysis. The mediating role of shame was independent of guilt, rumination, and self-esteem. Also, the fact that the indirect effect of shame was equal in magnitude to that of two well-established correlates of depression, self-esteem and rumination, highlights the importance of shame's influence on depression. However, given the correlational and cross-sectional nature of Study 1, it is possible that different causal arrangements among the variables may obtain. Also, although shame is a common, perhaps universal, human emotion (Tangney & Dearing, 2002), it is likely that its negative influences on mental health are most acutely found among those who are chronically prone to feeling shame in response to negative events (Fontaine, Luyten, de Boeck, & Corveleyn, 2001). Study 2 addressed these issues.

## STUDY 2

In Study 2 we used an experimental induction of self-compassion to examine its causal efficacy in reducing shame, rumination, and depressive symptoms. By including three practice occasions and a two-week follow-up beyond the intervention period, we were also able to examine the impact of practice and the durability of the effects of self-compassion.

Because shame-prone persons are ordinarily lacking in self-compassion and are highly self-critical (Gilbert et al., 2010), it is important to determine whether they can benefit from practicing self-compassion in a self-directed rather than therapist-directed context. Accordingly, we examined the effects of written instructions to induce self-compassion for experiences of shame among individuals who are shame-prone.

In order to help clarify whether self-compassion's effects are distinct from other potentially helpful responses to shame, two com-

parison groups were employed. First, a shame-recall control group helped establish whether mere exposure to past shame episodes through recall, without any active processing of the episode, could account for any observed improvements. Exposure is a well-established therapeutic mechanism in the treatment of anxiety disorders, and so it is conceivable that the benefits of exposure may also extend to experiences that elicit feelings of shame. Second, an expressive-writing control group was used to help establish whether processing shame-eliciting experiences in a distinct way produces the same or different benefits from self-compassionate writing. Previous research has shown that expressive writing about painful experiences provides mental and physical health benefits (Frattaroli, 2006; Smythe, 1998). Relatedly, as some research has shown that attributions for negative events differ between those who employ self-compassion versus expressive writing (Leary et al., 2007), we examined attributions for experiences of shame in the study.

Finally, some authors have argued that self-esteem may be viewed as a competing, rather than complementary, strategy to self-compassion for maintaining mental health (Leary et al., 2007). Accordingly, we controlled for the influence of self-esteem in tests of experimental condition on shame, depressive symptoms, and rumination.

Based on existing theory and the findings cited above we hypothesized that, relative to the expressive-writing and no-writing control groups, those using self-compassion prompts to write about experiences of shame would demonstrate (1) better immediate outcomes on negative affect, state shame, and attributions for the events; (2) a practice effect across the three occasions, and (3) improvements at two-week follow-up on dispositional self-compassion, shame-proneness, rumination, and depressive symptoms.

## METHOD

### Participants

Participants in Study 2 were selected from among Study 1 participants who scored at or above the median on the TOSCA Shame scale ( $Mdn = 33$ ;  $n = 179$ ). Altogether, 90 persons (15 men, 75 women), with a mean age of 19.12 (range 17–37) and representing nine different ethnicities, provided complete useable data.

## Materials and Procedure

Data for both Phase 1 and 2 were collected on-line using SurveyGizmo. Consent was obtained separately at the outset of each phase.

*Study 2, Phase 1.* Participants first described and rated an episode of shame. They then were randomly assigned to condition which involved completing a condition-dependent writing assignment and filling out a number of dependent measures, described below, three times within a one-week period. Each occasion was separated from the others by at least 24 hours.

*Description and Rating of Shame Episode.* To reduce socially desirable responding the present study employed the following procedures: (1) self-administration (vs. interviewer administration), (2) computerized administration, and (3) private (vs. public) responding (Tourangeau & Yan, 2007). Participants were invited to "Take a few moments to think of a negative event that occurred in the last 5 years (during high school or university) that made you feel ashamed of yourself—as if you were a completely awful or worthless person. This could be something that involved failure, humiliation, or rejection." Following Leary et al. (2007; p. 899) respondents were then instructed to: "Please describe the experience. Include such things as: what led up to it; who was present; precisely what happened; and most importantly, how you felt and behaved at the time." Participants then rated how ashamed they felt (a) at the time of the event, and (b) now, on a scale ranging from 1 (completely ashamed) to 5 (not particularly ashamed). These scores were reversed in the analysis.

*Self-Compassion Writing.* Following Leary et al. (2007, p. 899), those in the self-compassion condition were asked to proceed as follows: "Bearing in mind the experience you just described, please provide a written response to each of the following three instructions. It is important for you to really make an effort with your responses and to write down everything that is relevant." To encourage an acceptance of one's common humanity participants were asked to "List as many ways as you can think of in which other people also experience similar events to the one you just described." To encourage self-kindness participants were asked to "Write a paragraph expressing understanding, kindness, and concern to yourself the way you might express concern to a friend who had undergone the

experience." Finally, to promote mindful, nonreactive awareness of the experience, participants were asked to "Describe your feelings about the experience in an objective and unemotional fashion."

*Expressive Writing.* Following Pennebaker's expressive writing procedure (Pennebaker, Colder, & Sharp, 1990), participants were asked to take fifteen minutes to write about their deepest feelings associated with the experience of shame they described. They were exhorted to really let go and explore their feelings and thoughts about it and how it relates to their past, present, and future, to relationships with loved ones, and their identity.

*No-Writing Control.* There was no further writing task for these participants.

*Dependent Measures.* After completing the writing requirements of their assigned condition, participants rated their feelings on 16 mood items representing anger (e.g., irritated), sadness (e.g., down), anxiety (e.g., tense) and happiness (e.g., happy) on a 7-point scale from 1 (not at all) to 7 (extremely). The four happiness items were reverse-scored before all 16 items were summed for a total negative affect score (Leary et al., 2007). The internal consistency of the scale over its three administrations was excellent, with Cronbach's  $\alpha$ s ranging from .92 to .94.

Participants then rated their state levels of shame and guilt using the SSG. The internal consistency of the Shame and Guilt Scales over the three administrations was excellent, with Cronbach's  $\alpha$  ranging between .88 and .93. Finally, participants were asked to rate to what extent the negative event was caused by (1) something you did, (2) someone else, (3) bad luck, and (4) the kind of person you are (your personality, abilities, attitude, character, etc.). Attribution ratings were made on a 12-point scale from 1 (not at all) to 12 (completely).

### **Study 2, Phase 2 (Follow-Up)**

Two weeks after completing the final trial of Phase 1, Study 2 participants received a link to complete Phase 2. Phase 2 included all of the baseline measures from Study 1, with the exception of the demographics measure, presented in randomized order. Subsequently, participants were thanked and informed that they would receive a summary of the study within two months.

## RESULTS

### Participant Flow

Study 2 began with 135 participants. Dropouts occurred in nearly equal numbers across conditions: Thirteen each in the control and expressive writing conditions and 15 in the self-compassion condition. Four additional participants were removed from the dataset: two participants (one each from control and expressive writing conditions) reported experiencing no shame over their purported experiences of shame, one participant initially began in the expressive writing condition and was subsequently mistakenly assigned to complete a different condition, and one participant from the control condition did not report an episode of shame. These 45 participants, categorized as noncompleters, were compared to the 30 participants per condition who completed the study. No significant differences on demographic or Study 1 measures were found, suggesting there were no systematic factors affecting participant dropout.

### Preliminary Analyses

*Shame Episode Descriptions.* Describing an experience of shame in writing re-activated some of the original strong feeling. Participants reported intense shame at the time the event occurred ( $M = 4.11$ ,  $SD = .87$ ). Although ratings of current shame were lower ( $M = 2.80$ ,  $SD = 1.10$ ) ( $M$  difference = 1.31,  $SD = 1.27$ )  $t(89) = 9.80$ ,  $p < .001$ , 95% CI [1.04, 1.57], current shame nonetheless was near the mid-point of the scale and differed significantly from the scale's bottom level of 1 (not particularly ashamed) ( $M$  difference = 1.80)  $t(89) = 15.6$ ,  $p < .001$ , 95% CI [1.57, 2.03] indicating considerable residual levels of shame. These values did not differ significantly across conditions, occasions, nor their interaction on either original or current shame scores.

*Equivalence of Groups at Baseline.* Using one-way ANOVAs to evaluate group equivalence on the baseline measures (Table 3), the three conditions differed only on self-esteem  $F(2, 87) = 4.86$ ,  $p = .01$ . Accordingly, and consistent with recommended practice (Leary et al., 2007), baseline trait self-esteem was used as a covariate in the analyses comparing conditions. Effects of gender were examined on all baseline measures. Consistent with previous research (Neff, 2003b), men endorsed more self-compassionate attitudes ( $M = 105.33$ ) than

TABLE 3. Descriptive Statistics for Study 2 Baseline Measures by Condition

Measure	Condition					
	Control (n = 30)		Self-Compassion (n = 30)		Expressive Writing (n = 30)	
	M	SD	M	SD	M	SD
Shame-Proneness	38.33	3.97	39.27	3.83	38.70	3.58
Self-Compassion	92.84	18.76	91.36	22.16	93.70	20.33
Self-Esteem	30.02 <sub>a</sub>	3.43	27.32 <sub>b</sub>	3.88	27.41 <sub>b</sub>	4.08
BDI	10.78	5.50	13.21	6.48	14.60	7.99
Rumination	40.60	4.59	41.23	5.21	41.61	4.23

Note. BDI = Beck Depression Inventory

Means within a row with different subscript letters differ at  $p < .05$ .

did women ( $M = 90.09$ ),  $t(88) = 2.76$ ,  $p < .01$  (two-tailed). No gender differences were found for any of the other baseline measures. As gender was not a focus of the research it was not examined further.

### Immediate Effects of Interventions

*Analytic Strategy.* Because research examining self-compassion interventions typically controls for individual differences in self-compassion, we included baseline self-compassion as a covariate along with baseline trait self-esteem. Accordingly, all Phase 1 dependent variables were evaluated using a mixed one-between (3 conditions) by one-within (3 occasions) repeated measures analysis of covariance (ANCOVA). Examination of epsilon values for all dependent variables indicated that the assumption of sphericity was met in the analyses.

*Negative Affect, State Shame and Guilt.* As hypothesized, experimental condition significantly influenced the reported levels of negative affect and guilt-free shame, but not shame-free guilt (hereafter, shame and guilt). For negative affect the ANCOVA revealed a large effect of condition,  $F(2, 85) = 7.49$ ,  $p = .001$ ;  $\eta_p^2 = .15$ . Pairwise comparisons showed that self-compassion users reported significantly less negative affect (marginal  $M = 46.74$ ) than did expressive writers (marginal  $M = 58.70$ ), ( $M$  difference =  $-11.96$ ,  $SE = 3.48$ ),  $p < .001$ , 95% CI  $[-18.51, -5.41]$  but not significantly less than those in the control condition (marginal  $M = 48.54$ ). Feelings of shame also showed a significant influence of condition,  $F(2, 85) = 3.87$ ,  $p = .025$ ;  $\eta_p^2 = .08$ . Pairwise comparisons revealed significantly less shame in the self-

compassion condition (marginal  $M = -.76$ ) than the expressive writing condition (marginal  $M = .98$ ), ( $M$  difference =  $-1.74$ ,  $SE = .64$ )  $p = .008$ , 95% CI  $[-3.00, -.47]$  and non-significantly less than the control condition (adjusted  $M = -.21$ ). For guilt, no main effect was found for condition. No interaction of condition and time was observed for negative affect, shame, or guilt.

*Correlation of Current Shame and Negative Affect Over Trials.* If a self-compassionate response to a shame episode is soothing, it ought to reduce the association between shame and distress and this dissociation ought to become stronger with practice. No such dissociation should occur in the other, nonsoothing, conditions. To test this idea we examined changes in the correlation between current shame over a past episode and subsequent negative affect across the three writing occasions within each condition. The results, shown in Figure 1, indicate that relative to the critical  $r$  threshold value of .36 for significance ( $p < .05$ ), practicing self-compassion resulted in a marked change in the shame-distress correlation from initially strongly positive and significant in the first trial to weak and non-significant in subsequent trials. In contrast, for those not practicing self-compassion, the shame-distress correlation went from positive but nonsignificant (controls) or significant (expressive writing) in the first trial to positive and significant (both controls and expressive writers) in the subsequent two trials.

*Attributions.* No significant effects of condition, occasion, or their interaction were obtained for the attributions of bad luck, own behavior, personality, and others' behavior.

### **Effects of Interventions at Follow-Up**

*Analytic Strategy.* We examined changes in follow-up measures in two steps. First, simple pre-post comparisons were made within each condition to determine whether any change occurred between baseline (obtained in Study 1) and follow-up (obtained in Phase 2, Study 2; all tests two-tailed). In the second step, relative comparisons of change among conditions were made using ANCOVA, controlling for baseline levels of the dependent variables along with trait self-compassion and self-esteem. Finally, some within-group correlations were examined to determine any effects of relevant traits in moderating changes across conditions.

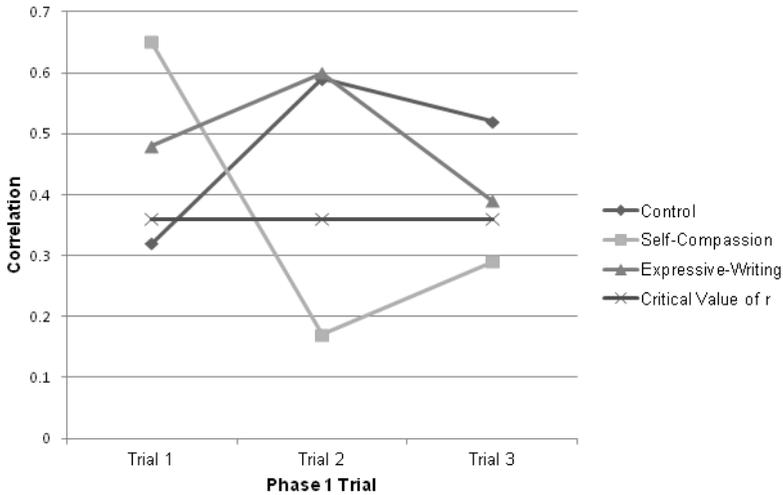


FIGURE 1. Correlation of current shame with post-trial distress by condition and trial: Study 2

*Change in Trait Self-Compassion.* Two weeks after last practicing the self-compassion intervention, participants in the self-compassion condition increased their scores on the Self-Compassion Scale by 4.8% on average relative to baseline, a marginally significant trend ( $M$  difference = 4.42,  $SD = 13.60$ )  $t(29) = -1.78$ ,  $p = .086$ ,  $d = 0.33$ , 95% CI [-.66, 9.50]. In contrast, participants in the control and expressive writing conditions showed no change in trait self-compassion. Pairwise comparisons revealed that with baseline self-compassion and self-esteem controlled, follow-up scores on the Self-Compassion Scale were higher for participants in the self-compassion condition (adjusted  $M = 97.81$ ,  $SE = 2.55$ ) than for control participants (adjusted  $M = 90.30$ ,  $SE = 2.65$ ), ( $M$  difference = 7.51,  $SE = 3.75$ )  $p = .049$ , 95% CI [.041, 14.97]. The scores of the expressive writing group (adjusted  $M = 94.29$ ,  $SE = 2.56$ ) fell in-between the other conditions and did not significantly differ from either.

Interestingly, the amount or direction of change in self-compassion for highly shame prone persons depended on condition. Within the self-compassion condition, shame-proneness was positively correlated with improved self-compassion ( $r = .30$ ), whereas a negative correlation was observed in the control ( $r = -.33$ ) and expressive

writing ( $r = -.05$ ) conditions. Although the small sample size within each condition rendered these individual correlations nonsignificant, nonetheless the differences among them were all significant at  $p < .05$  (two-tailed).

*Change in Shame-Prone*ness. Practicing self-compassion substantially reduced shame-proneness. Self-compassion participants showed a significant decrease in shame-proneness from baseline to follow-up ( $M$  difference = 2.26,  $SD = 4.67$ )  $t(29) = 2.65$ ,  $p = .013$ ,  $d = .53$ , 95% CI [.51, 4.0]. In contrast, no significant changes occurred in shame-proneness scores for either the control or expressive writing participants. An ANCOVA, controlling for baseline shame-proneness, self-compassion, self-esteem, and guilt-proneness showed an overall effect of condition on participants' guilt-free shame-proneness,  $F(2, 82) = 3.11$ ,  $p = .05$ ,  $\eta_p^2 = .07$ . Simple contrasts revealed lower shame-proneness residuals in the self-compassion condition relative to the control condition ( $M$  difference = -3.00,  $SE = 1.3$ )  $p = .02$ , 95% CI [-5.58, -.42]. Although the self-compassion condition also exhibited lower shame-proneness than the expressive writing condition, the difference ( $M$  difference = -.44,  $SE = 1.23$ ) was not significant. The effect of the self-compassion condition on changes in shame-proneness did not depend on the baseline level of self-compassion ( $r = .05$ , *ns*). However, this dependence was present in the expressive writing condition ( $r = -.47$ ,  $p = .008$ ). These independent correlations significantly differed at  $p < .01$ .

*Change in Symptoms of Depression*. Self-compassion participants showed a significant decrease in depressive symptoms from baseline to follow-up ( $M$  difference = 2.26,  $SD = 4.78$ )  $t(29) = 2.58$ ,  $p = .015$ ,  $d = .49$  95% CI [.47, 4.04]. For control and expressive writing participants, their respective baseline to follow-up changes were not significant. An ANCOVA showed no effect of condition for level of depression at follow-up when adjusted for baseline depression, self-compassion, and self-esteem,  $F(2, 84) = 0.87$ , *ns*.

*Change in Rumination*. Self-compassion participants showed a trend toward a decrease in rumination from baseline to follow-up ( $M$  difference = 1.31,  $SD = 4.14$ )  $t(29) = 1.73$ ,  $p = .094$ ,  $d = .32$  95% CI [-.24, 2.86]. For control and expressive writing participants, their respective baseline to follow-up changes were not significant. The ANCOVA showed no effect of condition for level of depression at follow-up when adjusted for baseline depression, self-compassion, and self-esteem,  $F(2, 83) = 1.16$ , *ns*.

## DISCUSSION

This study is the first randomized trial, to our knowledge, to examine whether shame-prone individuals can benefit from using self-compassion to process shame-eliciting experiences. The results show that actively practicing self-compassion toward shame-eliciting memories produces beneficial outcomes both immediately and two-weeks later. That self-compassion, relative to expressive writing, immediately results in lower levels of state shame and negative affect suggests that self-compassion allows an otherwise painful process of re-examining shame episodes to be soothing. Moreover, this effect appears to become more powerful with practice, as suggested by the declining pattern of correlations found for shame and distress across trials in the self-compassion condition and the increasing correlations in the other two conditions.

One potentially enduring effect of practicing self-compassion is to increase self-compassionate attitudes. In the present findings, those in the self-compassion condition showed a trend toward increased self-compassionate attitudes relative to their baseline levels, a direction opposite to that of those in the control condition. We speculate that change in self-compassionate attitudes that result from practice is one mechanism by which enduring benefits arise from practice effects. Conceivably this may occur through a mutually supporting dynamic in which practicing self-compassion leads to growth in compassionate attitudes which in turn contributes to more frequently adopting a self-compassionate response to negative events.

The benefits of practicing self-compassion also extend to markers and sequelae of the threat system. Those practicing self-compassion uniquely showed significant decreases from baseline in shame-proneness and depressive symptoms, as well as a trend toward lower levels of rumination. The decrease in shame-proneness was greater than that observed in the control condition. These findings support the therapeutic benefits of self-compassion and indicate that valuable effects can be obtained without a therapist even among shame-prone individuals.

Finally, the present findings display a complex, but revealing, relationship of individual differences in shame-proneness and self-compassion to the effect of condition. Practicing self-compassion, relative to controls, increased self-compassionate attitudes more for more shame-prone persons. Equally, having more self-compassion

sionate attitudes to begin with helped reduce shame-proneness after emotional processing of episodes of shame in the absence of explicit cues to use self-compassion. One implication may be that shame-prone persons who experience shame will ordinarily maintain their level of shame-proneness, but may break this cycle and reduce shame-proneness, through practicing self-compassion or by holding more self-compassionate attitudes. Interestingly, when cued to use self-compassion, shame-proneness decreased regardless of participants' level of trait self-compassion. Altogether, these findings suggest that self-compassion is the active ingredient in reducing shame-proneness, either when directly practiced, or as a background attitude that may be recruited to help soothe feelings of threat evoked when actively processing shame experiences.

## SUMMARY AND GENERAL DISCUSSION

Let us now consider the findings with respect to the general model proposed in the introduction, whereby self-compassion prevents or reduces depressive symptoms in response to negative events by soothing or pre-empting the operation of the ego-threat system. First, the present research supported the hypothesized negative associations between depressive symptoms and self-compassionate traits (Study 1) and practice (Study 2). Because the association found in Study 1 is correlational, no causal inference can be drawn. However, the experimental induction in Study 2 showed that using self-compassion to cope with a shameful experience generates less negative affect (relative to expressive writing), and reduces depressive symptoms (measured two weeks later relative to baseline levels). Taken together, these findings support the proposed model and add to the existing body of research indicating that self-compassion is an important contributor to mental health in general (Vettese, Dyer, Li, & Wekerle, 2011) and for preventing or reducing depressive symptoms in particular (Barnard & Curry, 2012; Raes, 2011; Shapira & Mongrain, 2010).

Second, the findings support the contention that the effect of self-compassion on depression is achieved through its regulation of the ego-threat system (Gilbert & Proctor, 2006; Leary, 2012). Although we focused primarily on feelings of shame and shame-proneness as the main markers of activity in the threat system, we also considered rumination, guilt, and low self-esteem as other potential mark-

ers. Regarding shame, Study 1 showed that the feeling of shame was a significant mediator of the association between self-compassion and depressive symptoms, considered either as a single mediator or in a test of multiple mediation alongside rumination, guilt, and self-esteem. Rumination and self-esteem were also significant single and multiple mediators. Guilt, in contrast, was not a significant mediator, which suggests that it should not be considered part of the threat system and that, when properly distinguished from shame, plays little role in depression (Kim et al., 2011; Orth, Berkling, & Burkhardt, 2006).

More direct evidence that self-compassion regulates the threat system comes from Study 2, which revealed that when shame-prone individuals use self-compassion to process shame-inducing episodes, immediate feelings of shame were less intense than in those who used expressive writing and were no stronger than in those who did not process their shame at all. Active self-compassion also produced other enduring effects on the threat system, including reducing shame-proneness (relative to baseline and controls). The effect of self-compassion on rumination, however, was less powerful, with only a trend to lower scores (relative to baseline) identified. Further research is needed to determine whether self-compassion has a causal influence on rumination as has been suggested (Raes, 2010). What is clear, however, is that the first leg of the mediational model, from self-compassion to the threat system as represented by shame, is supported. Unfortunately, owing to its modest sample size, Study 2 had insufficient power to test the indirect effect and thereby evaluate the entire mediational model (Fritz & MacKinnon, 2007). Nonetheless, the present experimental demonstration shows that practicing self-compassion can reduce feelings of shame and shame-proneness among shame-prone persons, thereby extending a previous finding showing that a similar self-soothing intervention can also reduce shame in response to self-criticism (Kelly, Zuroff, & Shapira, 2009).

A number of limitations warrant consideration when evaluating the findings. These include the use of a student sample that included relatively few men. However, because women tend to score higher than men on shame-proneness and lower than men on self-compassion, our largely female sample provided a more difficult test of the model. Although this study relied on a single measure of shame-proneness, some reassurance on this point can be found in research indicating that extant measures of shame, including the

TOSCA, tend to load together on a common shame factor (Wolf, Cohen, Panter, & Insko, 2010). Finally, while the present study's use of a two-week follow-up assessment is an advance on most self-compassion research, a longer follow-up period would help clarify the durability of the observed effects.

## CONCLUSION

The present research supports the contention that self-compassion, through the influence of both enduring attitudes and in vivo practice, helps to strengthen mental health by limiting the tendency of negative events to activate the threat system as instantiated by feelings of shame and negative affect. Moreover, the fact that even shame-prone young adults can use written self-compassion prompts, without therapist support, to process episodes of shame with little distress suggests this may be an appealing self-help treatment method for those who fear thinking or talking about shameful experiences. Assuming further research supports the benefits of self-compassion the future will be brighter for those who suffer from shame and its sequelae.

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