Suffering and Compassion: The Links Among Adverse Life Experiences, Empathy, Compassion, and Prosocial Behavior

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Abstract

Experiencing past adversity traditionally has been linked to negative life outcomes. However, emerging evidence suggests that heterogeneity exists with respect to links between adversity and resilience, with adversity often enhancing cooperation in the face of joint suffering. Here, we present two studies designed to examine if the severity of past adversity is associated with an enduring propensity for empathy-mediated compassion, and, if so, whether the resulting compassion directly is, in turn, linked to behavior meant to relieve the suffering of others. Using both MTurk and laboratory-based paradigms, we find that increasing severity of past adversity predicts increased empathy, which in turn, is linked to a stable tendency to feel compassion for others in need. In addition, we demonstrate that the resulting individual differences in compassion appear to engender behavioral responses meant to assist others (i.e., charitable giving, helping a stranger).

Keywords: compassion, empathy, prosocial behavior, suffering, life adversity

Is past suffering associated with hardened hearts or warmed ones? Answering this question is of central import for two reasons. The first is that adversity and suffering are unfortunate yet unavoidable parts of the human condition. Although the types and frequencies of adversity that individuals confront may vary across gender, ethnicity, and social-economic status, no one is assured of escaping the travails of loss, illness, or violence during his or her lifetime (Bonanno, 2004; Norris, 1992). The second is that a capacity for compassion and empathy stands as a central motivator for many prosocial behaviors that underlie the social exchange and support necessary for building social capital (Crocker & Canevello, 2008; DeSteno, 2015; Goetz, Keltner, & Simon-Thomas, 2010; Kahana, Harel & Kahana, 1988; Kishon-Barash, Midlarsky & Johnson, 1999). As a result, any influence of adversity on a tendency to be compassionate might not only impact individuals' well-being during the time of initial distress, but also impact decisions related to adaptive social functioning for years to come.

Given the negative effects adversity has on many physical and psychological phenomena, one might wonder if the pain and hardship associated with adversity inhibit behaviors meant to alleviate distress in others. Indeed, a review of past research examining adversity's lasting effects links it to maladies recognized to inhibit adaptive social functioning, including major depression, posttraumatic stress, and related affective disorders (Fullerton, Ursano & Wang, 2004; Kelleher et al., 2008; McCloskey & Walker, 2000; Monroe & Harkness, 2005; Seery, Holman & Silver, 2010). In addition, those exposed to adverse life events often evidence a diminished belief in a benevolent or meaningful world characterized by acts of virtue (Franklin, Janoff-Bulman & Roberts, 1990; Janoff-Bulman, 1992; Poulin, 2006).

Yet for all suffering's recognized deleterious effects on the mind and body, there are good reasons to believe that one aspect of adaptive social functioning – compassion – actually

might be enhanced by adversity. As Staub and Vollhardt (2008) have argued, adversity, through a process of posttraumatic growth wherein individuals may increase tendencies both to adopt the perspectives of others and to feel a sense of responsibility for their welfare, may stand as a fundamental contributor to the development of altruistic tendencies. In support of this view, Vollhardt and Staub (2011) have provided evidence that past adversity is associated with prosocial attitudes toward victims of natural disasters and increased intent to volunteer for charitable organizations. In a similar vein, Stellar and colleagues have shown that individuals of lower socioeconomic status, who by definition often face greater difficulties in meeting the daily challenges of life, evidence higher levels of dispositional compassion (Stellar, Manzo, Kraus, & Keltner, 2011). Direct behavioral evidence linking adversity to prosocial behavior can also be seen in the organic formation of "altruistic" groups within societies coping with the aftermath of disasters. These groups, characterized by acts of kindness, generosity, and cooperation, emerge rapidly and serve a vital function in fostering both individual and community resilience (Kaniasty, 2012).

The dual association of adversity with injurious (e.g., stress) and noble (e.g., compassion) affective responses may at first seem counterintuitive. Yet, if one conceives of compassion as a forward-looking coping response, the situation becomes less perplexing. As work by Bonanno and colleagues has revealed, the downstream effects of adversity are surprisingly heterogeneous, with many people successfully moving beyond the initial difficulties posed by their dilemmas (Bonanno, 2004; Bonanno & Diminich, 2013). Given that one central ingredient to resilience is the building and reinforcing of social support (Bonanno, Galea, Bucciarelli, & Vlahov, 2007), compassion, due to its ability to foster prosocial behavior (Condon & DeSteno, 2011; Valdesolo

& DeSteno, 2011), may stand as an adaptive mechanism by which social capital can be enhanced (cf. DeSteno 2015; DeSteno, Condon, & Dickens, in press).

The Present Research

The present studies were designed to determine if past adversity was associated with heightened compassion, as well as what role, if any, empathy would play in generating compassion. Although empathy has often been loosely defined in the literature, here we adopt the perspective that empathy involves cognitive factors related to the ability to adopt the perspective of others and to value their welfare (DeSteno, 2015; Goetz et al, 2010). The term compassion is reserved for a discrete emotional response focused on alleviating the suffering of others (Condon & Barrett, 2013). In short, empathy can lead to compassion, but it is compassion that drives prosocial action (DeSteno, 2015; Goetz et al, 2010) – a pattern of relations that will be empirically examined in the studies that follow. Consequently, in addition to measures of adversity and compassion, both studies assessed differences in two specific facets of empathy: perspective-taking and empathic concern. Additionally, both studies also offered an opportunity to engage in prosocial acts toward others in need. We included this behavioral measures in order to assess the predictive validity of self-reported compassion. Given that the function of compassion is to motivate attempts to alleviate the suffering of others, heightened compassion should be associated with greater prosocial action.

Like empathy, past adversity can be measured in several different ways. For example, the severity, recency, and frequency of adverse experiences can each be assessed. In the current experiments, we chose to focus on severity for both theoretical and empirical reasons. At a theoretical level, severity appears to best capture the quality of consequential suffering. For instance, the impact of facing several minor adversities might pale in comparison to facing a

single severe one. Similarly, recency, while perhaps providing information regarding current levels of distress, offers little information regarding the degree of suffering. Indeed, recency of adversity would be least likely to predict prosocial outcomes as distressed individuals are less likely to have the resources to attend to the distress of others and are more likely to be preoccupied with their own distress (Hoffman, 1978). At an empirical level, the view that the severity of past adversity is more associated with empathy and prosocial responding as compared to frequency or recency has received support within the context of responses following sexual assault and natural disasters (Barnett, Tetreault, & Masbad, 1987; Kaniasty, 2012; Vollhardt & Staub, 2011). As a result, the following analyses will focus on severity, but we nonetheless assessed both frequency and recency information as part of our measure of adversity in order to examine any possible effects that might emerge.

Finally, it is important to note that although the two studies to be presented are similar in structure, they intentionally differ in terms of populations from which the samples were drawn and the level of experimental control afforded by each design. In an effort to sample levels of adversity more widely than what might typically be available from an undergraduate population, Study 1 utilized a sample from Amazon's Mechanical Turk (MTurk). Study 2, meant to examine the replicability of any initial findings under conditions of heightened experimental control, used a laboratory sample of college students.

STUDY 1

This study utilized MTurk to assess differences in life adversity, empathy, and dispositional compassion. We expected that increased severity of adversity would enhance both a tendency for perspective taking and valuation of the distress of others – two fundamental components of empathy – that, in turn, would predict a tendency to experience more frequent

and intense levels of compassion in life. To validate the self-report measure of compassion, we also included a behavioral measure of prosociality in which individuals could donate a portion of their MTurk payment to a charitable organization focused on helping those in need.

Methods

Participants

We recruited 248 individuals via MTurk (Gender: 61.2% Female, 37.9% Male, 0.9% did not disclose; Age: $M = 41.23$, $SD = 13.53$, Range = 22 – 74 years of age; Ethnicity: 82.6% European American, 9.0%, African-American, 4.0% Asian-American, 1.8% Native American, 2.2% other or mixed ethnicity, 0.4% did not disclose).[1] Data from twenty-four participants (9.68% of total sample) were excluded due to the failure of these participants to complete all measures, leading to a final sample of 224. All participants were required to be from the United States and to have an MTurk approval rating of 98% or higher. This approval rating indexes the history of satisfactory job completion on MTurk as a percentage of completed jobs that were deemed acceptable by the job poster. Participants were compensated with $1.50 for completing the survey.

Measures and Procedure

MTurk data collection proceeded in three phases. The first assessed participants' levels of empathy and dispositional compassion. The second assessed the nature and severity of adversity participants had experienced in life. The third provided an opportunity to engage in prosocial behavior meant to aid others in need.[2]

Empathy. Individual differences in empathy were measured using the Perspective-Taking (PT) and Empathic Concern (EC) subscales of the Interpersonal Reactivity Index (Davis, 1980). Each subscale contains 7 items that utilize a 5-point response format. The PT subscale is

designed to assess tendencies to adopt another's perspective or point of view. Key items of the PT scale included items such as "I believe that there are two sides to every question and try to look at them both" and "When I'm upset at someone, I usually try to 'put myself in his/her shoes' for a while." The EC subscale is designed to assess tendencies to be concerned about the welfare of others in distress. Key items of the EC scale included items such as "Other people's misfortunes do not usually disturb me a great deal [reverse scored]" and "Sometimes I don't feel very sorry for other people when they're having problems [reverse scored]." The online supplementary materials contain a complete description of both subscales. Internal consistencies for both subscales were quite acceptable in this sample (α's = .87 and .88, respectively).

Dispositional Compassion. Dispositional tendencies for compassion were assessed using the Compassion Subscale of the Dispositional Positive Emotion Scale (DPES; Shiota, Keltner, & John, 2006). It is a 5-item scale, with each item using a 7-point response format, which measures tendencies to experience compassion in daily life. Key items of this measure included items like "It's important to take care of people who are vulnerable." and "When I see someone hurt or in need, I feel a powerful urge to take care of them." The online supplementary materials contain a complete description of this measure. Here again, internal consistency was good (α = .90)

Adverse Life Experiences. To assess adversity, we utilized a 28-item measure that assesses individuals' past history of adversity with respect to six different domains identified by the Diagnostic Interview Schedule section on trauma: (1) injury/illness, (2) violence, (3) bereavement, (4) relationship events, (5) social-environmental stress, and (6) disasters (cf. Blum, Silver, & Poulin, 2014; Seery et al., 2010; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). Within each domain, participants received a score ranging from 0 to 4 points for the severity, frequency, and recency with which different types of adversity were experienced (see

supplementary materials for complete description of questions and descriptive statistics regarding mean adversity levels). Total adversity scores for severity, frequency and recency were calculated by averaging the respective scores across adversity types (Blum, Silver, & Poulin, 2014; Seery et al., 2010; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002). The online supplementary materials contain a complete description of this measure.

Prosocial Behavior. To validate the predictive validity of the dispositional compassion measure, we utilized a behavioral measure of prosociality toward others in need. At the end of the MTurk session, participants were given the opportunity to donate a portion of their MTurk earnings to the American Red Cross. Specifically, after reading a short description of the Red Cross, participants were asked how much, if any, of their earnings up to $1 they would like to donate (in increments of $0.25). Responses were coded on a 5-point scale ranging from 0 ($0.00 donated) to 4 ($1.00 donated).

Results

Although our primary interest centered on the role played by the severity of past adversity in fostering compassion, we first examined the links between dispositional compassion and all three aspects of lifetime adversity (i.e., severity, frequency, and recency). As expected, only severity of adversity emerged as a viable predictor using bivariate regressions, $\beta = .36$, $t(222) = 5.661$, $p < .001$, 95% CI .23 – .48.[3] Consequently, all future analyses focus, as intended, solely on this aspect of adversity.[4]

To examine the proposed links between adversity, empathy, and compassion, we subjected the data to the structural equation model specified in Figure 1, which provided an excellent fit, $\chi^2(3, N = 224) = 4.17$, $p = .383$, RMSEA = .014. As can be seen, increasing severity of adversity was significantly associated with heightened perspective-taking and

empathic concern. However, only empathic concern reliably predicted enhanced dispositional compassion. Note that severity of adversity did not itself directly influence dispositional compassion once controlling for empathy, hence the absence of that path from the model. Similarly, empathic concern did not influence donation behavior outside of its association with compassion, thereby identifying the emotional state of compassion as the primary driver of prosocial behavior.[5]

To provide greater confidence in the predictive validity of the self-report measure of dispositional compassion, we also included the behavioral measure of charitable donation. Here, as expected, increased tendencies to experience compassion were associated with larger donations to the Red Cross. On average, participants one standard deviation above the mean on dispositional compassion donated 25% more of the maximum allowed (i.e., 25¢ of $1 maximum) than did those one standard deviation below it.

Discussion

The findings of Study 1 offer initial support for the view that increasing severity of past adversity leads individuals to become more compassionate. Although increased adversity was also associated with both heightened perspective-taking and empathic concern, only empathic concern reliably predicted dispositional compassion. That is, while it appears that greater adversity increased the probability that individuals would attempt to mentally put themselves in another's shoes, this tendency did not appear to underlie more frequent experiences of compassion. Rather, it seems that only an increased motivation to care about the welfare of others predicted the regular emergence of compassion. However, given past work linking perspective-taking to compassion and prosociality (Maner et al., 2002; Zaki & Ochsner, 2012), additional examination of this link is warranted before any strong claim should be made.

STUDY 2

The goal of the second study was to examine the robustness of the initial findings through conducting a conceptual replication with enhanced internal validity. Toward that end, we adapted the methods used in Study 1 to a laboratory context that would not only offer enhanced precision but also utilize a more effortful measure of prosocial behavior. The resulting protocol was characterized by three primary differences from that used above.

First, we adapted a laboratory-based measure we had used in the past to assess compassion-induced prosocial behavior (Valdesolo & DeSteno, 2011). In the current version, participants were exposed to an individual who was assigned to complete onerous tasks while obviously feeling ill. Prosocial behavior, in this case, was operationalized as participants' efforts, if any, to assist the ill individual by taking on work to relieve his burden.

Second, we included a measure of state compassion in the protocol. Unlike Study 1, participants were exposed to an actual individual in need, and thus afforded an opportunity to feel compassion in the moment. Accordingly, we expected that their level of dispositional compassion would predict their momentary experience of compassion in the relevant situation.

Third, we temporally separated completion of the life adversity, empathy, and dispositional compassion measures from the state compassion and prosocial behavior measures by having participants complete the former as an online survey on the day following their laboratory session. The benefits of this strategy were two-fold. It not only ensured that any affective states evoked by the lab protocol would not influence responses on the adversity, empathy, and dispositional compassion measures, but also, unlike Study 1, ensured that participants were not primed to think about adversity or compassion prior to encountering the individual in need.

Methods

Participants

We recruited 62 participants from the undergraduate population at Northeastern University under the guise of completing a study involving emotion perception.[6] Data from 7 participants were removed due to a failure to complete the web-based component of the procedure (described below), and data from 4 more were removed due to concerns regarding suspicion of the cover story noted during debriefing. The final sample thus consisted of 51 participants (Gender: 66.7% female, 33.3% male; Age: $M = 18.92$, $SD = 1.02$, range = 18 – 22; Ethnicity: 76.5% European-Americans, 3.9% African-American, 15.7% Asian/Asian-American, 3.9% other or mixed ethnicity). Individuals participated in partial fulfillment of course requirements.

Procedure

As noted, this study consisted of two phases: a laboratory session and an online survey. All participants were run individually. The laboratory session, which occurred first, was comprised of three sections. In the first, participants completed a computer-based task related to emotion recognition (Emotion Recognition Index; Scherer & Scherer, 2011). This task served as a distractor task to uphold the cover story and to allow us to collect pilot data relevant for a different project. Findings for all measures relevant for the target research at hand are reported below.[7]

In the second section, participants were asked if they would be willing to observe and provide feedback on the fairness of a new procedure being developed to assign participants to experimental tasks. In actuality, this request was a ruse that would enable participants to witness a staged interaction with a confederate who would serve as a target for compassion and prosocial

behavior (cf. Valdesolo & DeSteno, 2011). More specifically, participants witnessed a male confederate, whom they believed to be another participant in the experiment, complete a series of tedious tasks. However, during the course of this observation, the confederate revealed to the experimenter that he was feeling unwell and asked to be excused – a request that, as will be described below, was ultimately retracted.

In the third section of the laboratory phase, the true participant was given the option to help the ill-feeling participant, who was completing tasks in a separate room, or to leave the scene via a non-public exit. If a participant chose to help, she or he was informed that any work completed would reduce the workload of the other individual. Time spent working on such tasks served as the measure of prosocial behavior.

Finally, participants completed the online survey phase of the study on the day following their participation in the laboratory session.

Measures

State Compassion and Prosocial Behavior Challenge. As noted, each participant was asked if he or she would assist the experimenters by observing and evaluating a new procedure being tested as a method for assigning participants to experimental tasks (cf. Valdesolo & DeSteno, 2008, 2011). This observation would occur surreptitiously through yoking the true participant's computer to the confederate's. In this way, the true participant would be able to read the instructions provided to the confederate and to observe his behavior. After receiving these instructions, the participant took his or her place in the first of four cubicles in the lab.

At this point, the confederate entered the lab and sat in a cubicle at the opposite end of the lab. The experimenter informed him that he was to follow directions on the computer screen that would provide instructions on how to determine which of two experimental tasks he was to

complete. The confederate then turned to his computer to begin the process, with the participant observing further instructions and decisions via the "yoked" computer.

The confederate first completed a well-being questionnaire, indicating that he was feeling unwell at present by providing low scores on self-report measures of wellness and positive mood (see supplementary materials for details). The purpose of this deception was to set the context for what came next – the confederate having to do onerous work while feeling ill. Following completion of the well-being questionnaire, an instruction screen for the task assignment procedure appeared that informed the confederate that a "randomizer" program would now be used to assign him to work on one of two possible experimental tasks: the "green task" – an enjoyable photo hunt and brief questionnaire that would take 15 minutes to complete – or the "red task" – a tedious series of logic and spatial rotation tasks that would take 45 minutes to complete. Once the confederate read the instructions (with the participant following along on the yoked computer screen), he proceeded to start the randomizer program, which, unbeknownst to the true participant, was programed always to assign the red task. Once the confederate learned his assignment, he let out a soft audible sigh and, as instructed by the next computer screen, summoned the experimenter from an office adjacent to the lab. The confederate then engaged the experimenter in the following conversation just outside the door, with the door left ajar so as to allow the true participant to eavesdrop:

> *Confederate: "I've been assigned to the red condition. Hmmm...*pause* I'm sorry but is it possible for me to reschedule the experiment for tomorrow or some other time? I've not been feeling very well recently and I have a doctor's appointment at student health services in under an hour."*

Experimenter (after some contemplation): "Unfortunately, we have limited research credit for this study. I'm not sure if I will have enough credits to reschedule you for a future session. But we can try to work things out and see if I can reschedule you for a future session. Nonetheless, it's entirely up to you on whether you want to stay or leave."

Confederate: "Hmm.. Alright then I'll stay to complete the experiment"

Experimenter: "Thank you for helping us out! Please take your belongings and follow me to the next room to complete the experiment."

The experimenter then ushered the confederate out of the lab and into a different room to begin the red task. In this way, participants were exposed to an individual who was not feeling well but who nonetheless agreed to complete an onerous task despite the fact that he may miss or be late for his medical appointment.

At this point, the participant's computer asked him or her to provide feedback on the assignment procedure, including an assessment of his or her current feeling state. This assessment consisted of several distractor questions along with questions requiring the participant to indicate how well each of several emotion descriptors described his or her current feelings using 5-point scales (see supplementary materials). State compassion was calculated as the mean of two items: sympathy and compassion ($\alpha = .74$).

Finally, the participant was informed via computer that the study had ended. He or she was also informed that the confederate, who was in the process of completing items comprising the red task in another room, could be assisted. That is, participants, if they so chose, could help complete some of his work, as the experimenters were solely interested in gathering responses to the tasks, not in who actually completed them. It was made clear on the computer screen that whatever part of the red task they completed would be removed from the workload assigned to

the confederate. If a given participant chose not to help, he or she could leave the lab via an easy and nonpublic exit. If the participant decided to help, he or she was directed to inform the experimenter, who in turn would provide a packet containing the relevant tasks and say:

> *You can just do as much as you have time for. Whatever you do not complete will be completed by the other participant after he/she has finished what he/she is currently working on. Once you are done, just leave everything on the desk; the experimenter will pick it up later.*

If the participant decided to assist the confederate, after the participant sat down to begin the task (e.g., a set of quantitative questions taken from the GRE) in an adjacent room, the experimenter started a timer (note that 16 of 35 participants, or 32% decided to help). Hidden video cameras were used to monitor the amount of time the participant spent working on the tasks, with the time period serving as the measure of prosocial behavior.

Adversity, Empathy, and Dispositional Compassion. On the day following their participation in the lab session, participants received an email that triggered them to complete the adversity, empathy, and dispositional compassion measures described in Study 1. These measures were completed via an online survey system. Participants were given a URL to complete these measures, and were told that doing so was part of the study; however, participants received full credit for the session irrespective of whether or not they completed the online measures.

Results and Discussion

As in Study 1, experiencing increased severity of adversity predicted an enhanced disposition to be compassionate, $\beta = .51$, $t\,(49) = 4.09$, $p < .001$, 95% CI .26 – .75. Following replication of this basic, predicted relation, we attempted to confirm the viability of the model

utilized in Study 1, with one minor difference. This difference stemmed from the ability to assess state compassion – the specific level of compassion felt in response to an eliciting event – and to examine the impact of this state on behavior meant to address the event in question. As depicted in Figure 2, we inserted state compassion in the model between dispositional compassion and prosocial behavior, with the logic being that an increased tendency to experience compassion should correspond to elevated specific instances of compassion when facing relevant potential elicitors.

Once again, the proposed model provided a good fit for the data, χ^2 (8, N = 51) = 11.42, p = .179, RMSEA = .092.[8] Increasing adversity was again associated with heightened perspective-taking and empathic concern. However, unlike in Study 1, both perspective taking and empathic concern subsequently led to greater dispositional compassion, which itself, predicted elevated state compassion when confronted with the unwell and overworked confederate. Note that severity of adversity again had no direct impact on dispositional compassion outside of its influence through the two components of empathy. Finally, attesting to the motivational power of compassion, increasing momentary experiences of this state led to greater time spent assisting the confederate.[9] On average, those one standard deviation above the mean on state compassion devoted approximately four more minutes working to help the confederate than did those one standard deviation below the mean. Also of theoretical import, whereas compassion was directly associated with costly helping behavior, empathy once again was not. Neither perspective taking nor empathic concern influenced helping behavior outside of their associations with compassion. This finding again supports the notion that empathy and compassion are two discrete but related constructs. That is, empathy is a necessary but insufficient condition for prosocial outcomes;

compassion needs to result from empathy in order to drive prosocial actions (cf. DeSteno, 2015; Goetz, Keltner, Simon-Thomas, 2010).

With the exception of the path linking perspective-taking to dispositional compassion, the model fit in Study 2 serves as a strong confirmation of that found in Study 1. To clarify the issue of perspective-taking's potential impact on dispositional compassion, we combined the *p*-values from the two studies using Stouffer's meta-analytic procedure. The result revealed that the influence of perspective-taking was reliable, $z = 2.17$, $p = 0.030$, thereby confirming that adversity enhances both aspects of empathy, which in turn underlie a propensity to be compassionate.

GENERAL DISCUSSION

Taken together, these studies yield coherent and consistent results supporting the view that experiencing past adversity is associated with a tendency to experience compassion. In addition, it appears that this increase in compassion stems from adversity's links to heightened empathy. That is, individuals who have experienced adversity attest to increased tendencies both to perspective-take and to place value on the welfare of others in need. Perhaps of greatest import, though, this resulting compassionate disposition directly predicts not only increased experiences of compassion in response to relevant conditions, but also costly behavior directed at alleviating the suffering of others.

It is important to note, however, that although we present evidence for the effects of adversity on compassion in a nomothetic sense, it is likely the case, as is true for resilience following adversity, that significant inter-individual variation exists. Indeed, Bonanno and Diminich (2013) point out that a whereas a majority of individuals demonstrate resilience to

traumatic events, a minority of individuals continue to display chronic dysfunction following trauma. Given this fact, future research on the links between adversity and compassion should investigate both the level of variability among different trajectories for the post-trauma development of compassion and the potential factors that might predict which trajectory a given individual might follow.

This documented heterogeneity in responses to adversity may also partially explain the presence of both positive and negative downstream outcomes. For example, it is possible that the plethora of results linking adversity to negative psychological outcomes may derive from a temporal sampling bias. That is, due to the fact that a sizable portion of studies that examine adversity utilize participants who have experienced hardship within the past 2 years or less preceding data collection (e.g., Currier, Holland, & Neimeyer, 2009; Lilly, Valdez, & Graham-Bermann, 2010), negative influences of adversity on empathy, and thus prosocial responding, may be more dominant. As we and others have found, the recency of adversity is negatively associated with empathy, as individuals are often necessarily preoccupied with their own suffering or have had little time to experience posttraumatic growth (Bonanno & Diminich, 2013).

A second reason for the seeming dominance of negative sequelae of adversity may stem from the fact that many relevant studies choose to examine the negative downstream consequences of adversity in a population already characterized by disproportionately high levels of hardship, distress, and psychopathology (e.g., Currier, Holland, & Neimeyer, 2009; Dekel, Solomon, Elklit, & Ginzburg, 2004; Lilly, Valdez, & Graham-Bermann, 2010). Focusing on individuals who have already been identified as suffering from continued stress and psychological disorders may produce a sample that over-represents non-resilient individuals.

That is, such studies may not necessarily demonstrate the normative effects associated with adversity in the general population. As majority of individuals are able to overcome and recover from adversity (Bonanno & Diminich, 2013), our data suggests that growth, in the form of compassion, resulting from adverse experiences may be more normative, but of course, still occur within the context of heterogeneity.

In a similar vein, examination of potential moderators or boundary conditions for the relations among the variables found here is warranted. For example, variability in attachment styles stands as a possible candidate (Bartholomew & Horowitz, 1991; Bowlby, 1973). Individuals possessing avoidant attachment styles might be less likely to help others in the aftermath of a crisis as they generally hold negative views of others, especially within the context of social support (Wayment, 2006). Moreover, due to a desire to limit intimacy in their relationships, avoidant individuals might intentionally reduce the compassion they show others. If true, it might suggest that a highly specific type of adversity – one stemming from negative interpersonal experiences wherein one learns that others cannot be relied upon for support – might stand as a delimitative condition for the general principle argued here .

Issues of possible moderation aside, our findings lend credence to the notion that adversity, on average, likely fosters compassion and subsequent prosociality. As such, they describe potential affective mechanisms by which individuals who have experienced distinct challenges might engage in compassionate behaviors meant to foster the building of social and economic capital through a willingness to extend needed resources to others (cf. DeSteno, 2015; Fudenberg, Rand, & Dreber, 2012; Rand, Kraft-Todd, & Gruber, 2015; Valdesolo & DeSteno, 2011). Nonetheless, it is important to recognize that the design used here is correlational in nature. Whereas the models are consistent with the view that experiencing life adversity

enhances compassion that, in turn, leads to prosocial behavior, true causality cannot, of course, be discerned. Although the directionality of the proposed causal chain is not in question – it would be impossible for compassion to cause past adversity – a lack of random assignment to levels of adversity experienced limits the ability to conclusively rule out potential third-variable problems. Future research, therefore, will be needed to ascertain more clearly the causal relations linking the variables in question. At present, though, these findings, to our knowledge, represent the first evidence confirming a link between past adversity and enduring increases in compassion.

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Notes

[1]As we could not find any prior empirical work linking dispositional compassion to adversity, we decided to maximize our chances of finding a true relation if one existed by using as large a sample as we could recruit based on funds available. Assuming an alpha = .05 and a moderately small effect size (r = .20), a sample of 153 participants would be needed to achieve power = .80. We had funds to exceed this number of participants, and thus recruited what our funds would allow (N = 248).

[2]Note that participants also completed a measure of emotion recognition and other self-report measures not relevant to the question at hand between phases 1 and 2. As these measures were planned for use in a different project and are not relevant to the to the target question, we do not analyze them below.

[3]Although the goal of this paper was to focus on the effects of the severity of adversity in general, we did examine associations of the distinct types of measured adversity (e.g., bereavement, illness) with dispositional compassion. Little heterogeneity existed, with correlations for five of the six adversity types and compassion falling within a narrow range (r = .25 − .28, p*'s* < .01), and that of social-environmental stress trending in the same direction.

[4]Although it did not affect dispositional compassion, and therefore is not directly relevant to the phenomena examined here, it is instructive to note that the recency of adversity did covary negatively with empathic concern (r = -.19, p= 0.005) and perspective-taking (r = -.18, p = 0.006). Given that many individuals show elevated signs of dysfunction during the onset of traumatic events (Bonanno & Diminich, 2013), the inhibitory effect temporal proximity to

such events has on abilities to care about and take the perspective of others makes good sense.

[5] Further attesting to the theorized directional relation between empathy and compassion, altering the model such that compassion causally precedes both facets of empathy as opposed to follows them results in a significantly poorer fit, χ^2 (4, N = 224) = 12.50, p = .014; RMSEA = .098.

[6]Based on the effect size linking adversity to dispositional compassion found in Study 1, analyses revealed a need for 46 participants to achieve a power = .80. As some participants were likely to be excluded for data quality or suspicion issues, we recruited an additional number.

[7]Although not relevant for the present findings, it is useful to note for interested readers that differences in the severity of past adversity were not associated with differences in emotion-decoding abilities on the ERI.

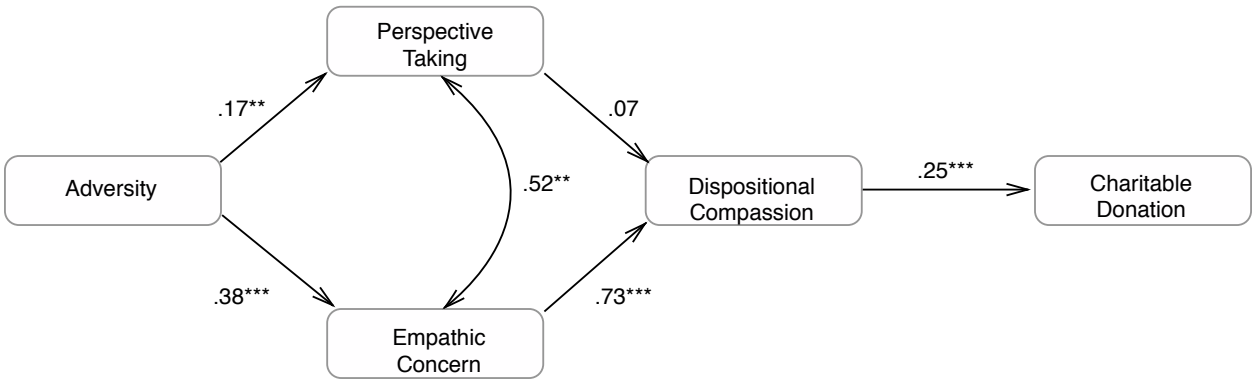
[8]The RMSEA = .092 which passes the test of close fit, p_{close} = .255.

[9] A similar finding emerges using a logistic regression if prosocial behavior is coded dichotomously (i.e., 0 = did not help; 1 = helped), β = 0.308, Wald χ^2 (1) = 3.01, p = .083.

Figure Captions

Figure 1. Path Model Examining Compassion as a Function of the Severity of Past Adversity and Empathy in Study 1. Double-headed arrows indicate correlations. *p<.05, **p<.01, ***p<.001. 95% CI's for model parameters can be found in the supplementary materials.

Figure 2. Path Model Examining Compassion as a Function of the Severity of Past Adversity and Empathy in Study 2. Double-headed arrows indicate correlations. *p<.05, **p<.01, ***p<.001. CI's for model parameters can be found in the supplementary materials.


Perspective Taking
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Adversity
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Dispositional Compassion
.25***
Charitable Donation
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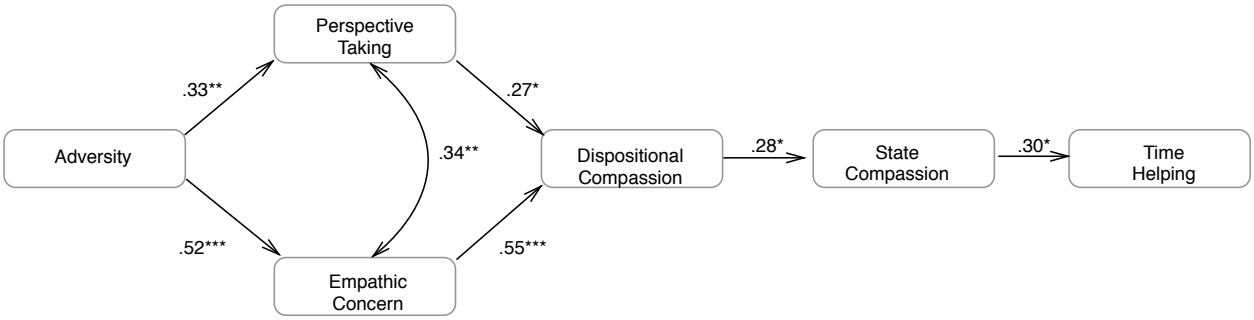
.73***
Empathic Concern


Perspective Taking
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Adversity
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Dispositional Compassion
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State Compassion
.30*
Time Helping
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.55***
Empathic Concern