Does Adversity Predict Empathic Emotion Regulation through Empathic Self-Efficacy?

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A thesis submitted to the faculty of Radford University in partial fulfillment of the requirements for the degree of Master of Arts in the Department of Psychology

March 2025

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Abstract

Recent research has linked prior trauma and adversity with virtuous social outcomes, including higher prosocial behavior and empathy (e.g., Lim & DeSteno, 2023). Empathy is considered cognitively effortful, and people generally avoid it when less cognitively taxing alternatives are available (Cameron et al., 2019). The current study used a moderation-of-process design to examine whether more severe life adversity predicts selection into empathic situations. Based on initial research on adversity and compassion (e.g., Lim & DeSteno, 2020), it was expected that empathic self-efficacy would mediate the proposed relationship between severity of adversity and empathy choice. Participants received false feedback regarding their performance on the "Feel" and "Describe" decks of the Empathy Selection Task (EST; Cameron et al., 2019)—a task that allows participants free choice to empathize with or describe demographic characteristics of emotional photographs of people. Participants also completed critical trials of the EST without feedback, a measure of cognitive load, and a questionnaire that asks about the frequency, recency, and severity of their experiences with adversity. Results did not support a significant relationship between adversity severity and empathy choice nor was this relationship mediated by empathic self-efficacy. Instead, higher empathic self-efficacy predicted increased empathy choice and lower task aversion. In addition to adding to the nascent literature linking adversity, empathic self-efficacy, and prosocial outcomes, this study provides valuable knowledge regarding factors that influence empathic emotion regulation.

Keywords: empathy, adversity, emotion regulation, situation selection, empathic self-efficacy

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Table of Contents

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Most people experience at least one traumatic or adverse event in their lifetime (Bonanno, 2004; Kleber, 2019), and these experiences are commonly linked to negative outcomes, such as mental or physical illness (Troy & Mauss, 2011). For example, natural disasters are adverse events that happen somewhere worldwide almost every day, and these events, such as earthquakes or floods, have been repeatedly linked with concerning mental health outcomes, such as posttraumatic stress disorder, depression, and anxiety (Warsini et al., 2014). Researchers note, however, that personal growth can occur after traumatic experiences, referred to as posttraumatic growth (Bonanno & Diminich, 2013; Tedeschi & Calhoun, 2004). For instance, Kaniasty and Norris (1986) demonstrated that communities often band together in the face of natural disasters, promoting cooperation and connection. Zaki (2020) shared that widespread disaster and struggle often prompt compassion and empathy for others, encouraging helping behavior. Researchers have demonstrated similar relationships between an array of adverse experiences, including specific domains of trauma (e.g., bereavement, abuse), with empathy, compassion, and helping behavior (Lim & DeSteno, 2016; Vollhardt & Staub, 2011). Lim and DeSteno (2020) proposed that this relationship is observed as individuals who experience adversity develop a sense of self-efficacy regarding enduring trauma and helping others endure similar situations. In a series of quasi-experiments, in which compassion was the focus, Lim and DeSteno (2020) found initial support for this hypothesis.

This study was designed to replicate and extend Lim and DeSteno's (2020) research which found that self-efficacy mediates the relationship between adversity and compassion. Specifically, the current study examined whether self-efficacy mediates the relationship between adversity and empathic emotion regulation using the Empathy Selection Task (Cameron et al.,

2019), a procedure designed to give participants free choice to empathize with (or avoid empathizing with) emotional stimuli. Before describing this experiment, the theoretical and conceptual background of empathy and emotion regulation is explained. Following this, self-efficacy and its relationship with empathy is discussed. Then, adversity and potential positive consequences of adversity are described. Finally, the theoretical and empirical rationale for studying self-efficacy as a mediating variable in the relationship between adversity and empathy is outlined.

Empathy and Emotion Regulation

Empathy refers to the ability to understand and share the emotions and feelings of others (Zaki, 2014). Although definitions of empathy generally vary in scientific literature, most scientists and scholars agree that empathy is composed of affective and cognitive dimensions (Zaki, 2017). Affective empathy, or *experience sharing*, refers to the ability to adopt the emotions and sensorimotor states of others, while cognitive empathy, also called *mentalizing* or perspective taking, refers to the ability to understand and infer the emotions of others (Thompson et al., 2021; Zaki, 2014). Regardless of the dimension, empathy is influential in social functioning and social competence, allowing for the development of close friendships and fulfilling relationships (Cameron et al., 2019; Di Giunta et al., 2010). Further, empathy can feel pleasant and encourage helpful behavior (Ferguson et al., 2021). Thus, the rewards of empathy are widely acknowledged in scientific literature; however, the underlying processes that encourage and the processes by which individuals engage in empathy have been recently debated.

Research in various disciplines highlights the automatic nature of empathy, such that one sees a person suffering and immediately, without conscious thought, empathizes with the

afflicted (Zaki, 2014). However, recent research illustrates that empathy is a motivated phenomenon, such that empathy is approached or avoided based on motives and goals (Batson, 2022; Zaki, 2014). Individuals may be motivated to engage in empathy for the social/emotional benefits (e.g., social desirability, positive affect) or avoid empathy for its related costs (e.g., painful, social, monetary). In other words, empathy is intentional, or a choice, and empathy choices change with opportunity costs and shifting features of the social context (Cameron et al., 2022). For example, Zaki (2014) shares that individuals often feel less empathy for outgroup members than ingroup members. The most commonly studied motivational form of empathy is empathic concern, or *compassion*, which entails feeling concern for another person's welfare and a motivation to alleviate their suffering (Batson, 2009; Goetz, 2010). Further, individuals may decrease (or downregulate) empathy to avoid distress or effort, and people may also increase (or upregulate) empathy to inspire cooperation or positivity (Cameron et al., 2022). For instance, Sloman et al. (2005) found that nurses often underestimate the amount of pain their patients are feeling, which Zaki (2014) suggested is evidence that some medical professionals may intentionally downregulate the amount of empathy they feel to avoid exhaustion.

In line with the theory that empathy is a choice, Zaki (2014) and Cameron et al. (2022) proposed that engaging in empathy can be managed via emotion regulation. Emotion regulation can be considered the process whereby individuals manage the impact of emotional experiences, which can include altering the emotions felt, how the emotions are expressed, and when the emotions are felt/expressed (Gross, 2002). Emotion regulation involves the management of both positive and negative emotions and is neither intrinsically good nor bad (Gross, 2002). As regulation can occur at any point during an emotional experience (e.g., before or during), examples of emotion regulation include alterations in the duration, magnitude, or latency of the

emotional experience, resulting in the increase, decrease, or maintenance of an emotional experience (Gross & Thompson, 2007). The regulation of emotion can be either automatic and unconscious or controlled and conscious (Gross, 1998). For example, individuals may deliberately (i.e., consciously) scroll past a video about an abandoned dog, or one may unconsciously hide disappointment at receiving an unwanted gift in front of others (Gross, 2002). Emotion regulation can be motivated by highly specific or broad goals (Gross, 1998); for example, inhibiting an inappropriate emotional response may be motivated by a desire for social acceptance.

Three emotion regulation strategies have been directly applied to motivated empathy: attention modulation, appraisal, and situation selection. Attention modulation, or attentional deployment, refers to shifting one's attention toward or away from aspects of a situation to manage one's emotional experience (Gross & Thompson, 2007). For example, depending on one's current goals, individuals may increase or decrease their attention toward other's emotions, allowing for a decrease or increase in empathy (Zaki, 2014). Individuals can increase their attention toward other's emotional cues by focusing their attention on the person, or one can turn their attention away from other's emotional cues in an overt, physical manner (e.g., turning away) or a covert, internal manner (e.g., thinking of something/someone else; Gross & Thompson, 2007). A second emotion regulation strategy applied to motivated empathy is cognitive change, or appraisal, which involves altering one's assessment of a situation to change its emotional meaning (Gross, 2015). Individuals could modify their appraisal of others' emotions by altering their beliefs about the intensity or the affective meaning of other's emotions (Zaki, 2014). To change the affective meaning of other's emotions, individuals may debate whether a person is responsible for or deserves the emotional experience. For instance, a person

motivated to avoid empathy may decide that a person in poverty deserves to feel hopeless because the person is responsible for their circumstances (Zaki, 2014).

The third emotion regulation strategy that has been applied to empathy is the focus of this paper: *situation selection*. Situation selection is a strategy in which individuals choose to engage in (or avoid) situations based on the emotions the situation is likely to generate or require (Gross, 2002). Because this choice occurs before the full emotional experience or response, this strategy is considered antecedent-focused (Gross & Thompson, 2007). To make a decision about a situation in order to regulate emotions, one must have a general understanding of that abstract situation and the emotions that typically accompany it. In an empathy context, Zaki (2014) provides the following example: Imagine an individual encounters a wheelchair-bound homeless person several feet away while walking on a street. Knowing that a conversation with this person may inspire empathetic feelings of sadness or guilt that may motivate costly helping behavior, such as donating money or offering food, the individual may choose to cross the street to avoid these emotions and behaviors, or the individual may choose to have a conversation with this homeless person and approach these emotions and behaviors. Possible motivations to knowingly approach situations that require empathy include improving a relationship with a partner or encouraging cooperation (Cameron et al., 2022).

Zaki (2014) noted that very few experimental studies had investigated what motivates empathic emotion regulation via situation selection. Recently, a task has been developed by Cameron et al. (2019) to study situation selection as a form of empathic emotion regulation. The authors proposed that empathy is avoided due to its cognitive costs, such that empathy is cognitively taxing or difficult. Empathy may be considered cognitively costly, in part, because it inspires feelings of uncertainty or requires mental effort. To examine whether individuals avoid

empathy due to its cognitive costs, Cameron et al. (2019) designed the Empathy Selection Task (EST), which assesses situation selection into empathy. In this context, the decision to engage in empathy is referred to as "empathy choice." In this task, participants are given free choice to empathize with or avoid empathizing with photographic depictions of faces (usually expressing emotion). When completing this task, participants are presented with two decks of cards in an electronic format, one labeled "Feel" and one labeled "Describe." If participants choose "Feel," they are asked to share the emotions and feelings of the person pictured; if participants choose "Describe," they are asked to notice objective details (e.g., age, gender) of the person pictured. After completing several trials, participants are asked to rate the cognitive load of the decks. In this case, cognitive load is assessed with self-report questions related to effort, frustration/aversion, and success/efficacy associated with completing both task decks. Across eleven studies, Cameron et al. (2019) found that participants more frequently avoided empathy via choosing "Describe" and rated the "Feel" deck as more cognitively taxing and aversive than the "Describe" deck. Based on these results, Cameron et al. (2019) noted that cognitive costs underlying empathy avoidance were heavily informed by a sense of inefficacy in empathizing. Individuals may feel concerns about the accuracy to which they share and perceive others' emotions and about inadequately sharing the emotions of others. Studies in other domains have illustrated that increasing one's sense of self-efficacy in that domain increases the likelihood of engaging in domain-specific behaviors (e.g., Bandura, 1988), and it follows that increasing one's empathic self-efficacy should increase empathy choice.

Self-Efficacy

Self-efficacy can be defined as an individual's subjective belief in his ability to perform behaviors and achieve certain goals (Bandura, 1977). One's sense of self-efficacy in a domain

can guide one's behavior and encourage behavior change in that domain (Schwarzer & Luszczynska, 2023). Bandura (1988) argued that an individual is more likely to engage in behaviors that he feels confident he can successfully accomplish, such that those with a high level of self-efficacy in a domain are more likely to engage in behaviors in that domain. For instance, one can have high self-efficacy for passing an exam and may be more likely to approach this situation confidently, but this same person can have low self-efficacy for public speaking and avoid these situations (Heslin & Klehe, 2006; Schwarzer & Luszczynska, 2023). Thus, one's sense of self-efficacy in a particular domain can influence the amount of effort exerted or the likelihood of success in performing tasks or achieving goals related to that domain.

Research in which self-efficacy beliefs are experimentally manipulated supports a causal link between perceived self-efficacy and behaviors in a variety of domains. For instance, Weinberg et al. (1979) found that those randomly assigned to a high self-efficacy condition extended their legs significantly longer than those assigned to a lower self-efficacy condition in a muscular strength competition, while Sharma and Morwitz (2016) found that participants randomly assigned to a high general self-efficacy condition felt more generosity and were more willing to donate to multiple beneficiaries than those in a lower self-efficacy condition. Moreover, positive health behavior change, such as smoking cessation, has been positively associated with efficacious beliefs (Strecher et al., 1986).

According to Bandura (1997), domain-specific self-efficacy can develop in four ways. Efficacy beliefs can be developed via mastery, such that abundant successful experiences in an area are associated with a heightened sense of self-efficacy. This is considered the strongest influence on the development of self-efficacy as successful experiences necessitate skill and ability (Pfitzner-Eden, 2016). Another source of self-efficacy is vicarious experience; observing

others achieve success in an area can lead to one's own development of efficacious beliefs (Bandura, 1997). Third, a heightened sense of self-efficacy in a particular domain can develop if someone expresses confidence or shares praise in another's abilities in that domain, termed verbal persuasion. Finally, physiological and affective states can inform self-efficacy. For instance, if one is experiencing somatic signs of high or aversive arousal, she is most likely less confident in her abilities than if she were not experiencing such signs (Bandura, 1997).

Self-Efficacy and Empathy

Emotional self-efficacy is an individual's belief in their skill to interpret and apply emotional information (Eklund et al., 2011). According to Bandura et al. (2003), a vast array of social interactions in which individuals have positive and negative experiences can encourage the development of emotional self-efficacy. Those with higher emotional self-efficacy may be more in tune with their feelings and emotions than others and may be more successful in social interactions (Eklund et al., 2011). Further, emotional self-efficacy is imperative in maintaining close relationships and facilitating beneficial adaptation and well-being (Di Giunta et al., 2010). The term empathic self-efficacy has been coined to refer to other-oriented emotional self-efficacy, which, in this case, refers to feeling the emotions of others (Di Giunta et al., 2010). Supporting a link between empathic self-efficacy and empathic experiences, Di Giunta et al. (2010) found that participants' responses on the Perceived Empathic Self-Efficacy Scale were positively associated with self-reported empathy experiences, self-esteem, psychological well-being, and adaptive coping.

In line with these prior findings, Cameron et al. (2019) found that participants who rated themselves as more efficacious when completing the "Feel" deck, which requires empathy, of the Empathy Selection Task were more likely to choose empathy than those who rated the deck

as less efficacious, suggesting that efficacy to empathize predicts higher empathy choice. This idea was further supported in an experimental study. Cameron et al. (2019) gave participants false feedback that they performed exceptionally well on one deck but poor on the other deck. To induce high empathic self-efficacy, participants were told they were performing better than 95% of others on the "Feel" deck that requires empathy, better than 50% of others on the objective "Describe" deck, correct on all empathy trials, and correct on half of the objective trials. In the low empathic self-efficacy condition, participants were told they were performing better than 95% of others on the "Describe" deck, better than 50% of others on the "Feel" deck, correct on all objective trials, and correct on half of the empathy trials. Cameron et al. (2019) found that participants assigned to the high empathic efficacy condition chose empathy significantly more often than participants in the low empathic efficacy condition. Furthermore, participants avoided empathy in the low-efficacy conditions but not in the high-efficacy conditions, further supporting a link between empathic efficacy and empathy choice. Moreover, these results provide additional support that cognitive costs are involved in empathy avoidance. As seen in other domains, providing positive feedback that improves one's efficacy in a particular domain is often associated with lower cognitive load (Redifer et al., 2021).

Adversity and Posttraumatic Growth

Adversity can be defined as stressful or traumatic circumstances with the potential to cause psychological or physical distress (Cox, 2013). Common examples of adverse experiences include serious illness, death of a loved one, combat experience, or natural disasters (Blum et al., 2014), and most people experience at least one adverse event in their lifetime (Bonanno, 2004; Kleber, 2019). Experiencing adversity is commonly linked with an increased risk for mental illnesses, such as post-traumatic stress disorder and major depressive disorder, and decreased

physical well-being (Troy & Mauss, 2011). Furthermore, research suggests that the impact of adversity can be widespread, resulting in emotional, cognitive, social, and behavioral changes (SAMSHA, 2014). One reason for these changes is that adverse experiences can cause a sense of helplessness and often alter one's beliefs about himself and his surroundings, such that the world is no longer a kind and just place (Kleber, 2019).

However, research on resilience following adversity suggests that adverse events should be called "potentially traumatic events" (PTEs) as most who experience trauma and adversity do not develop long-lasting mental health concerns (Bonanno & Diminich, 2013). In recent decades, researchers interested in this area have examined potential positive consequences of adverse circumstances, such as post-traumatic growth. Post-traumatic growth occurs when a person undergoes a "qualitative" "transformation," achieving personal growth above and beyond growth achieved prior to experiencing the traumatic event(s) (Tedeschi & Calhoun, 2004, p. 4). Evidence supports that growth can occur after many different types of adversity (e.g., health issues, victimization, bereavement), with growth influenced more by the subjective experience of the events than the events themselves (Linley & Joseph, 2004; McMillen, 1999). Post-traumatic growth is hypothesized to occur in response to adverse events challenging and changing one's worldview (Tedeschi & Calhoun, 2004); as a result, growth can take many forms in many different domains of life. While as many as 70% of trauma survivors report beneficial improvements in at least one area of life (Linley & Joseph, 2004), a recent meta-analysis examining growth after major positive, negative, and ambiguous life events found that research primarily supports improvements in social relationships (i.e., deeper relationships), environmental mastery (i.e., sense of control over one's environment; Joseph et al., 2012), and self-esteem (Mangelsdorf et al., 2019). While few studies included in this analysis investigated

changes in personal strength (defined as increased resilience, self-reliance, confidence, etc.; Tedeschi & Calhoun, 1996), Mangelsdorf et al. (2019) suggested that major life events may inspire lasting improvements in perceptions of personal strength. A study by Russo-Netzer (2018) supported this notion. In this interview study, qualitative analyses revealed that "a strengthened sense of self," "a deepened relational approach," and a "commitment to generativity and contribution" were three common themes of change following adversity (p. 62). These changes were associated with self-acceptance and increased ability to endure future adversity, enhanced compassion and emotional connection, and heightened desires to act in ways that benefit others. Taken together, these studies support a potential link between concepts similar to general self-efficacy and positive socially oriented behavior change following adversity, suggesting that a relationship between self-efficacy and empathy following adversity is probable.

Several studies have supported the relationship between experiencing adversity and change toward more prosocial behaviors, or behaviors intended to benefit others (Eisenberg et al., 2006). For instance, in one study, 96.6% of participants reported a change in behavior following an adverse event; the most common changes observed concerned social relationships and appreciation of life, such as an increased willingness and desire to spend time with family, express words of affirmation, and help others (Shakespeare-Finch & Barrington, 2012). Kaniasty and Norris (1995) shared evidence that communities often band together after natural disasters to cooperate with and provide for each other, while El-Gabalawy et al. (2021) reported that undergraduates' post-traumatic growth was correlated with prosocial behaviors (e.g., volunteering) hypothesized to be motivated by increased empathy.

While empathy is considered the ability to understand and share the emotions of others (Zaki, 2014), compassion can be considered the process of empathizing with a person and being

motivated to act in helpful ways (Lim & DeSteno, 2016; Strauss et al., 2016). A scant amount of previous research examines empathy or compassion as potential positive outcomes of experiencing adversity. For instance, Vollhardt and Staub (2011) found that participants who had experienced adversity were more likely to volunteer, donate to tsunami relief, and express empathy toward victims following a natural disaster. Lim and DeSteno (2016) found that higher severity of past adversity predicted enhanced empathy resulting in enhanced compassion, which was then associated with higher donations of one's MTurk earnings or helping an ill person complete a task.

Adversity, Empathy/Compassion, and Self-Efficacy

One hypothesis for these observed associations between adversity and enhanced compassion and empathy is the development of self-efficacy in helping others (Lim & DeSteno, 2020). Lim and DeSteno (2020) suggested that experiencing, and subsequently developing adaptive mechanisms to cope with (Seery et al., 2010), adversity may help individuals develop a sense of efficacy regarding enduring adverse situations and helping others cope with similar circumstances. To test this hypothesis, participants with low or high levels of adversity viewed images of either a single afflicted child or multiple afflicted children. Participants' compassion for the child(ren) pictured and perceived self-efficacy in helping the child(ren) was measured. Results demonstrated that the severity of past adversity predicted the amount of compassion felt, such that individuals with more severe adversity felt more compassion for multiple children than for a single child. Furthermore, severity of past adversity predicted self-efficacy in helping, and, in turn, this self-efficacy predicted higher compassion (Lim & DeSteno, 2020). Moreover, efficacy beliefs mediated the link between severity of past adversity and the upregulation of compassion toward numerous individuals in need. In a follow-up study designed to establish

causality, participants were either given no feedback or false feedback that they performed in the 95th percentile regarding empathy-related skills to establish a high sense of empathic self-efficacy. Participants then completed the compassion task and self-efficacy questions described previously. Lim and DeSteno (2020) found that the empathic-self efficacy manipulation had no effect on self-efficacy beliefs for those with high adversity but significantly increased self-efficacy for those with low adversity, suggesting that those with high adversity may have higher self-efficacy for helping others. In the no feedback control condition, participants with high adversity (and higher self-efficacy) felt more compassion for afflicted targets than those with less adversity (and lower self-efficacy). However, this gap disappeared in the experimental group, such that participants with low adversity and a heightened sense of self-efficacy reported a similar level of compassion to those with high adversity. Furthermore, those with low adversity and a heightened sense of self-efficacy demonstrated significantly higher levels of compassion toward multiple targets than those with low adversity without a heightened sense of self-efficacy. Taken together, Lim and DeSteno (2020) suggest that these studies illustrate a causal link between the severity of past adversity and enhanced compassion mediated by self-efficacy for helping others.

Present Study

While previous research has established a positive correlation between prosocial outcomes (e.g., empathy, compassion, and prosocial behavior) and prior experience with adversity (e.g., Lim & DeSteno, 2016; Lim & DeSteno, 2020; Lim & DeSteno, 2020; Vollhardt & Staub, 2011), no previous research has examined a possible link between adversity and empathic emotion regulation via situation selection. Additionally, few studies have examined individual difference factors, such as adversity, that could predict empathy choice.

Thus, there are multiple purposes to this study. First, this study is the first to test whether adversity is associated with empathic situation selection as an emotion regulation strategy, adding to the limited literature investigating the relationship between adversity and motivated empathy. Second, this study is among the first to examine empathic self-efficacy as a mediating mechanism in the relationship between adversity and prosocial outcomes, using a moderation-of-process design with an experimental manipulation of empathic self-efficacy.

A moderation of process design assumes that the mediator is a "mechanism" or "process" through which the independent variable affects the dependent variable (Vancouver & Carlson, 2015, p. 74). Thus, the moderation of process approach refers to a design in which the mediator, treated as a mechanism, is experimentally manipulated, leading to changes in the effect of the mediator (Spencer et al., 2005). If the relationship between the independent and dependent variable changes at different levels of the experimentally manipulated mediator, the causal effect of the mediator as a mechanism is demonstrated (Vancouver & Carlson, 2015). One specific type of moderation-of-process design includes the use of a "blockage" manipulation in which the manipulation of the mediator functions to block the mechanism through which the independent variable affects the dependent variable, leading to a reduced effect of (or reduced association between) the independent variable on the dependent variable (Pirlott & MacKinnon, 2016); this approach was employed in the current study. The use of a moderation-of-process design can provide strong support for a causal link between the independent variable and the dependent variable through the mediator within a single study, and the use of an experimental manipulation of the proposed mediator further supports a causal claim (Pirlott & MacKinnon, 2016; Spencer et al., 2005).

The following hypotheses were proposed:

First, people will avoid empathy when given the choice.

Second, severity of adversity will be positively associated with empathy choice, such that individuals with high severity of adversity will choose to engage in empathy more. People in the high empathic self-efficacy condition will choose empathy more frequently. Most importantly, an interaction between empathic self-efficacy and severity of adversity will occur. Specifically, among those in the low empathic self-efficacy condition, higher severity adversity will be strongly positively related to empathy choice, and this adversity – empathy choice relation will be weaker among participants in the high empathic self-efficacy condition.

Third, severity of adversity will be negatively associated with cognitive load, defined as self-reported effort and aversion toward the "Describe" and "Feel" decks of the Empathy Selection Task. People in the high empathic self-efficacy condition will rate the task as lower cognitive load. Finally, an interaction between empathic self-efficacy and severity of adversity will occur. Among those in the low empathic self-efficacy condition, higher severity adversity will be strongly negatively associated with cognitive load, and this adversity – cognitive load relation will be weaker among participants in the high empathic self-efficacy condition. As no previous research links adversity with cognitive load, this third hypothesis is considered exploratory.

Chapter 2: Method

Participants

Based on prior work with the Empathy Selection Task (Cameron et al., 2019), a sample size of 193 is required to detect modest bivariate correlations (r = .20) with 80% power in a two-tailed test. Participants from both a Southeastern United States university (n = 247) and Prolific (n = 46) completed this survey. Prolific (www.prolific.com) is a crowdsourcing website that

allows for rapid data collection, and Prolific workers from the United States were recruited to participate in exchange for an hourly rate of $12.00 USD. Fifty-six participants did not complete the survey, and 38 participants did not give permission for their responses to be analyzed (*n* = 21) or left the permission field blank (*n* = 17) after disclosure of deception procedures. Further, six participants were excluded from analysis for answering a non-response attention check question, which can increase power and efficacy at detecting careless or inattentive responding (Maniaci & Rogge, 2014). If participants answered "yes" to questions about being suspicious of the study in the debriefing and correctly identified the study purpose or manipulation in an open-ended follow-up question, their responses (*n* = 12) were excluded from analysis. The final sample size consisted of 181 participants (*n* = 154 from university, *n* = 27 from Prolific). Participants required approximately 45 minutes to complete the survey.

Procedure

Introductory Psychology students were informed via in-class and email announcements about the studies available to obtain course credit on SONA. All survey materials were administered via Qualtrics, an online data collection software. Participants read a description of the study procedures; this description informed participants that they would complete a questionnaire regarding demographic information, a decision-making task involving "describing" a person's demographic features or "feeling" a person's emotions, and a questionnaire regarding experiences with adverse events. After emphasizing that participation was voluntary and participants were free to refuse to answer any questions, participants provided informed consent (see Appendix A, Appendix B).

Participants completed the study in the following order: demographic questionnaire, Empathy Selection Task (Cameron et al., 2019), post-EST questionnaire, National Aeronautics

and Space Administration (NASA) Task Load Index (Hart & Staveland, 1988), and Adverse Life Events Scale (Blum et al., 2014). An empathic self-efficacy manipulation was embedded at the beginning of the Empathy Selection Task.

Empathy Selection Task (EST)

Participants completed 20 trials of the Empathy Selection Task (Cameron et al., 2019), after eight practice trials in which the efficacy manipulation was embedded, for a total of 28 trials. With the exception of the first eight practice trials, the order of trials was randomized without replacement. This task was designed as a free choice procedure to measure selection of empathy over alternative options. In this iteration of the task, participants had the choice to feel empathy for or describe objective features of (i.e., avoid empathy) faces from the Chicago Face Database (Ma et al., 2015), which includes Black and White male and female actors with angry or fearful faces (see Figure 1; all research design figures are reported in Appendix C). Instructions for the task detailed that participants would be presented with two decks of cards, one labeled “Describe” and one labeled “Feel.” Participants were informed that if they chose “Describe,” they would be asked to “be as objective as possible” in describing the age and gender of the person pictured, and if they chose “Feel,” they would be asked to “feel as much empathy as possible” for the person pictured and note “the feelings and experiences of the person.” Participants were encouraged to choose either deck as often as desired. See Appendix D for additional details.

If participants chose the “Describe” deck in a trial (coded as 0), participants were asked the following: “Look at the person in the picture and try to notice details about this person. Objectively focus on the external features and appearance of this person. Please provide 3 keywords describing the objective physical features of this person.” If participants chose the

"Feel" deck in a trial (coded as 1), participants were asked the following: "Look at the person in the picture and try to feel what this person is feeling. Empathically focus on the internal experiences and feelings of this person. Please write 3 keywords describing the experiences and feelings of this person." Participants' choices were summed for the outcome variable of empathy choice. After each trial, regardless of deck choice, participants were asked to respond to the following statement on a 7-point scale (from 1 – "*Not at all*" to 7 – "*Extremely*"): "I shared the person's emotions when observing the photograph."

Reliability and Validity of EST

In Ferguson and Inzlicht (2022), two samples of participants completed the Empathy Selection Task at two time points, two weeks apart. Good/substantial test-retest reliability (sample 1: *ICC* = .67, *r* = 0.67; sample 2: *ICC* = .65, *r* = 0.68) was demonstrated. Split-half reliability, assessed with the correlation between empathy choice on odd and even trials of the task, has also been relatively stable in various applications of the Empathy Selection Task, ranging from 0.56 – 0.80 across studies and experiments (e.g., Cameron & Inzlicht, 2020; Ferguson et al., 2020).

In Cameron et al. (2019), participants were told that they performed exceptionally well on one deck but poorly on the other deck, depending upon the condition to which they were assigned. Results show that giving false feedback that participants performed exceptionally well on the empathy decks increased empathy choice (and reduced empathy avoidance), which the authors argue supports construct validity of the measure. By demonstrating that those who believe they are more efficacious at empathizing chose empathy more, evidence is provided that the task requires effort. Moreover, in another variation of the EST, participants chose to empathize for three or ten seconds and wrote three keywords about the child refugee pictured.

After completing the task, participants were asked how much they would be willing to donate to an organization helping child refugees. Participants who chose the ten second empathy deck more often were willing to donate significantly more money, demonstrating predictive validity of the task in relation to prosocial behavior (Cameron et al., 2019).

Empathic Self-Efficacy Manipulation

Following Cameron et al. (2019), participants completed two manipulation check questions before and after completing the eight practice trials of the Empathy Selection Task: "I usually feel like I am very aware of and good at understanding exactly what I'm feeling" (emotion self-awareness) and "I usually feel like I am very aware of and good at understanding exactly what other people are feeling" (empathic self-efficacy). These statements were answered on a sliding scale from 0 "*Not good at all*" to 100 "*Incredibly good*." See Appendix E.

Participants completed four practice trials for the "Feel" deck and four practice trials for the "Describe" deck. Instructions for the "Feel" deck were as follows: "Look at the person in the picture and try to feel what this person is feeling. Empathically focus on the internal experiences and feelings of this person. Please write 3 keywords describing the experiences and feelings of this person." Instructions for the "Describe" deck were as follows: "Look at the person in the picture and try to notice details about this person. Objectively focus on the external features and appearance of this person. Please provide 3 keywords describing the objective physical features of this person." See Appendix F and Appendix G. The "Describe" and "Feel" decks were counterbalanced, while the order of the trials within each deck were manually randomized.

Altered from Cameron et al. (2019), participants only saw summary feedback after completing the four trials for each deck to improve believability of the empathic self-efficacy manipulation. For those randomly assigned to the low empathic self-efficacy condition,

participants were told that they performed better than 50% of others on the "Feel" trials and better than 50% of others on the "Describe" trials. For those randomly assigned to the high empathic self-efficacy condition, participants were told that they performed better than 95% of others on the "Feel" trials and better than 50% of others on the "Describe" trials (see Figure 2). This feedback was modified from Cameron et al. (2019) to ensure that empathic efficacy is manipulated, not efficacy related to performance on the "Describe" deck. Specifically, prior false feedback manipulations have told participants that they are better than 95% of others in the "Describe" trials, which could increase self-efficacy for avoiding empathy.

Measures

Demographics

Demographic data from participants was collected. Participants responded to open-ended questions concerning age, gender, and race. Income was assessed on a 6-point scale ranging from "Less than $25,000" to "More than $200,000." Education was assessed on a 7-point scale including responses ranging from "Some high school" to "Ph.D. or Doctoral degree." Social class was assessed on a 10-point scale ranging from 1 as the lowest standing in society and 10 as the highest standing in society. See Appendix H for additional details.

Post-Empathy Selection Task Questionnaire

After completion of the trials, participants completed an open-ended post-task questionnaire containing the following questions: "What was it like performing the task?" "How did you choose between decks?" "Did you develop a preference for one of the decks?" "Was there any difference between the decks?" While not analyzed in this paper, these questions can allow researchers to determine whether participants use a strategy to choose between decks or

develop a conscious preference for one deck over the other. See Appendix I for additional information.

NASA Task Load Index

Participants also completed an adapted version of the NASA Task Load Index (Hart & Staveland, 1988) to assess cognitive load after completion of the 20 test trials. Participants answered the following questions: "How mentally demanding was this deck?" "How hard did you have to work to accomplish your level of performance with this deck?" "How insecure, discouraged, irritated, stressed, and annoyed were you by this deck?" "How successful were you in accomplishing what you were asked to do in this deck?" The first two questions were considered a measure of "effort," the third question was considered a measure of "aversion," and the fourth question was considered a measure of "efficacy" (Cameron et al., 2019). These questions were answered on a 21-point sliding scale, with lower scores representing lower mental demand, work, and feelings of irritation or success (see Appendix J). Participants answered these questions about both the "Describe" and the "Feel" deck. Difference scores were calculated to obtain one score for aversion and one score for effort. Difference scores were calculated as "Feel" minus "Describe," such that higher scores mean that participants rated the "Feel" deck as more aversive or effortful than the "Describe" deck.

Adverse Life Events Scale

Participants completed the Adverse Life Events Scale (Blum et al., 2014) to assess lifetime adversity. Adversity recency, severity, and frequency were measured. This measure asks participants about their experiences with 37 adverse events. These life events can be divided into six categories: illness/injury (e.g., suffered a serious accident or injury, suffered a serious illness), violence (e.g., been physically attacked or assaulted; had sexual relations under force of

threat), bereavement (e.g., death of a relative, death of a friend), social-environmental stress (e.g., lived in dangerous housing, experienced serious financial difficulties), relationship stress (e.g., experienced parents' divorce, had unwanted pregnancy), and natural disaster (e.g., experienced a natural disaster). See Appendix K for all questions included in this measure.

When completing this survey, participants were first asked to respond "yes" or "no" to having experienced a particular adverse event. If the respondent answered "yes," they were further asked about the recency and severity of the event. Adversity recency was averaged on a 6-point scale by asking participants when each event occurred (5 = *within the last three months*, 4 = *within the last year,* 3 = *one to five years,* 2 = *six to ten years,* 1 = *more than ten years, 0 = no experience with event*). Additionally, two questions related to the emotional severity of each event were asked: 1) *How much did this event affect you emotionally at that specific time* (referred to hereafter as "adversity severity (event)") and 2) *How much does this event affect you emotionally now* (referred to hereafter as "adversity severity (now)"). A 6-point scale (0 = *no experience with event,* 1 = *not at all,* 2 = *mildly*, 3 = *moderately*, 4 = *significantly*, 5 = *severely*) was used to indicate the extent to which each adverse life experience emotionally impacted the participant. For each participant, the severity and recency of adversity were averaged across all 37 events. Frequency of life adversity was calculated by summing the number of items to which the respondent replied "yes" to having experienced an adverse event.

Debriefing

Participants completed a funneled debriefing after completing the survey (Cameron et al., 2019). The debriefing consisted of the following questions: "What did you think of this study?" "What did you think the purpose of the study was?" "Were you suspicious about anything?" "Did you think we were trying to deceive you?" "During the practice trials, you were provided

with feedback about your performance on the DESCRIBE deck (the red one). What did you think about that feedback?" "During the practice trials, you were provided with feedback about your performance on the FEEL deck (the blue one). What did you think about that feedback?" The final question "Did you think the feedback we gave you was accurate?" had the following answer choices: "*Yes, I did*, "*No, I didn't*," "*I didn't think about it much*," and "*I wasn't sure, but I was skeptical*." See Appendix L for funneled debriefing; see Appendix M and Appendix N for the deception release forms included in this study.

Chapter 3: Results

Descriptive Statistics and Preliminary Analyses

Participants' ages ranged from 18 to 66, with the average age being 21.31 years (*SD* = 8.14) and 55.2% of the sample aged 18. Participants' responses to the open-ended demographic questions of gender and race were recoded into categories as described below. Most participants identified as women (57.5%), 35.9% identified as men, and 6.6% identified as gender-nonbinary/-nonconforming. Most participants identified as White or European American (60.2%), 23.8% identified as Black or African American, 7.2% identified as Hispanic or Latino, 1.7% identified as Asian, and 7.2% identified as multi-racial. The average social class was 5.34 (*SD* = 1.77).

Twenty-five percent of participants made "Less than $25,000" per year; 13.3% made between "$25,000 - $49,999" per year; 21.0% of participants made between "$50,000 - $74,999" per year; 14.4% made between "$75,000 - $99,999" per year; 17.7% of participants made between "$100,000 - $199,999"; and 8.3% of participants made "More than $200,000" in a year. Zero participants reported "Some high school," 38.7% reported "High school," 42.0% reported "Some college," 6.1% reported "Associate's degree," 8.3% of participants reported "Bachelor's

degree," 5.0% reported "Master's degree," and no participants reported "Ph.D. or Doctoral degree" or "Trade school."

Independent samples t-tests and chi-square tests of independence were conducted to examine whether demographics characteristics covaried with the experimental manipulation of empathic self-efficacy. No test was significant, indicating that the randomization of participants to low (n = 89) and high empathic self-efficacy (n = 92) conditions was effective. Test statistics and effect sizes are reported in Table 1 for continuous variables age and social class and Table 2 for categorical variables gender, race, education, and income. All tables are located in Appendix O.

Empathic Self-Efficacy Manipulation Check

To examine the influence of the empathic self-efficacy manipulation to instantiate state empathic self-efficacy, a 2 (within subjects: emotion self-awareness self-efficacy v. empathic self-efficacy) x 2 (within subjects: pre-manipulation v. post-manipulation) x 2 (between subjects: high empathic self-efficacy v. low empathic self-efficacy) mixed model factorial ANOVA was computed. The expectation was for a three-way interaction in which empathic self-efficacy increased most strongly from pre- to post-manipulation in the high empathic self-efficacy condition. A significant main effect of time (pre-manipulation v. post-manipulation) was found, $F(1, 178) = 9.32$, $p = .003$, $\eta^2_{partial} = .05$. Participants reported significantly higher efficacy scores post-manipulation ($M = 68.53$, $SE = 1.29$) than pre-manipulation ($M = 66.53$, $SE = 1.31$). The main effect for efficacy type was not significant, $F(1, 178) = 1.24$, $p = .267$, $\eta^2_{partial} = .01$, nor was there a main effect of empathic self-efficacy condition, $F(1, 178) = 0.09$, $p = .770$, $\eta^2_{partial} = .00$. There was a significant interaction between time and empathic self-efficacy condition, $F(1, 178) = 8.95$, $p = .003$, $\eta^2_{partial} = .05$. Scores on efficacy measures did not change from pre- to

post-manipulation in the low empathic self-efficacy condition (b = 0.04, $SE(b)$ = .94, t(178) = 0.04, p = .966), but, in the high empathic self-efficacy condition, efficacy scores significantly increased from pre- to post-manipulation (b = 3.98, $SE(b)$ = .92, t(178) = 4.32, p < .001) (see Table 3 for means and standard errors). Neither the interaction between time and efficacy type (F(1, 178) = 0.38, p = .541, $\eta^2_{partial}$ = .00) nor the interaction between efficacy type and empathic self-efficacy condition (F(1, 178) = 0.26, p = .610, $\eta^2_{partial}$ = .00) was significant. The interaction between time, efficacy type, and empathic self-efficacy condition (F(1, 178) = 2.86, p = .093, $\eta^2_{partial}$ = .02) was also not significant.

Assumptions of the General Linear Model

Prior to constructing hierarchical ordinary least squares regression models to test primary hypotheses, distributions of continuous dependent and independent variables were examined for violations of assumptions of univariate normality via skewness and kurtosis values. Kurtosis values exceeded |2.0| for adversity severity (event) and adversity severity (now). To address these violations, a constant of 1 was added to both adversity severity variables before the variables were square root transformed (adversity severity (event)) and natural log transformed (adversity severity (now)). Following transformations, all four operationalizations of adversity (frequency, recency, severity (event), severity (now)) were standardized. Summary statistics for original and transformed independent variables are reported in Table 4. Data were also examined for linearity and homoscedasticity of residuals visually via a scatterplot, and multicollinearity was examined via collinearity statistics. No violations were observed. Cognitive load dependent variables, effort and aversion, were standardized. Summary statistics for dependent variables are reported in Table 5.

Hypothesis 1: Will People Avoid Empathy?

Informed by prior research with the Empathy Selection Task (e.g., Cameron et al., 2019), it was hypothesized that participants would avoid empathy by more frequently choosing to describe the objective features of photographic images depicting people. A one-sample *t*-test revealed, however, that participants did not avoid empathy ($M = 0.49$, $SD = 0.20$) relative to chance ($\mu = .50$), $t(180) = -0.93$, $p = .352$, $d = -0.07$. This finding could be due to the high empathic self-efficacy manipulation condition increasing empathy choice. Indeed, one-sample *t*-tests conducted for each empathic self-efficacy condition separately revealed that participants in the low empathic self-efficacy condition significantly avoided empathy ($M = 0.44$, $SD = 0.19$; $t(88) = -2.82$, $p = .006$, $d = -0.30$). On the other hand, participants in the high empathic self-efficacy condition did not choose empathy at a different rate than chance ($M = 0.53$, $SD = 0.20$; $t(91) = 1.33$, $p = .188$, $d = 0.14$).

Hypothesis 2: Does Empathic Self-Efficacy Mediate the Relationship between Adversity and Empathy Choice?

To examine whether empathic self-efficacy is a mediating variable in the relationship between life adversity and empathy choice, a three-block multiple regression analysis using statistical moderation was computed (i.e., Baron & Kenny, 1986). The standardized square root-transformed adversity severity (event) variable was loaded into block one; standardization of this variable allows the interpretation of the results such that a one-standard deviation change in adversity severity (event) corresponds to a change in the total number of empathy choices. The mean-centered empathic self-efficacy manipulation (-0.5083 = low efficacy, 0.4917 = high efficacy) was loaded into block two. Effect codes were centered to correct for unequal sample sizes between conditions, and mean-centering allows the effect of the self-efficacy manipulation

to be interpreted as a mean difference in empathy choices between low and high empathic self-efficacy. The square root-transformed adversity severity (event) x empathic self-efficacy manipulation interaction effect was loaded into the third block. Empathic self-efficacy condition was significantly positively related to empathy choice, $b = 1.72$, $SE(b) = 0.60$, $t(177) = 2.88$, $p = .004$, 95% CI(b) [0.54, 2.89], s$r^2 = 0.04$. This means that participants in the high empathic self-efficacy condition chose empathy 1.72 times more than participants in the low empathic self-efficacy condition. Neither the main effect of square root-transformed adversity severity (event) ($b = -0.19$, $SE(b) = 0.30$, $t(177) = -0.64$, $p = .526$, 95% CI(b) [−0.78, 0.40], s$r^2 = 0.00$) nor the interaction effect ($b = 0.33$, $SE(b) = 0.60$, $t(177) = 0.56$, $p = .576$, 95% CI(b) [−0.84, 1.51], s$r^2 = 0.00$) was significant (see Figure 3; all results figures are reported in Appendix P).

The same model as above was constructed with log-transformed adversity severity (now) loaded in block one, the empathic self-efficacy manipulation loaded into block two, and the log-transformed adversity severity (now) x self-efficacy manipulation loaded into block three. As with the prior model, empathic self-efficacy condition was significantly positively related to empathy choice, $b = 1.72$, $SE(b) = 0.60$, $t(177) = 2.90$, $p = .004$, 95% CI(b) [0.55, 2.90], s$r^2 = 0.05$. Neither the main effect of adversity severity (now) ($b = -0.09$, $SE = 0.30$, $t(177) = -0.31$, $p = .761$, 95% CI [−0.68, 0.50], s$r^2 = 0.00$) nor the interaction effect ($b = 0.18$, $SE = 0.60$, $t(177) = 0.30$, $p = .766$, 95% CI [−1.00, 1.36], s$r^2 = 0.00$) was significant (see Figure 4).

Similar models were constructed with adversity frequency and recency as independent variables. Similar results, wherein only the main effect of empathic self-efficacy condition was significant, were found. In none of these models was any scoring of adversity related to empathy choice as a main effect or an interaction effect with empathic self-efficacy condition. Table 6 reports parameter estimates, test statistics, and effect sizes of these models.

Hypothesis 3: Does Empathic Self-Efficacy Mediate the Relationship between Adversity and Cognitive Load?

To examine if empathic self-efficacy mediates the relation between life adversity and cognitive load, three-block multiple regression analyses using statistical moderation were conducted. Cognitive load was defined as difference scores on measures of effort and aversion assessed with the NASA Task Load Index (Hart & Staveland, 1988); difference scores were calculated by subtracting "Describe" aversion and effort scores from "Feel" aversion and effort scores, respectively. Eight separate models were constructed for effort and aversion, and scores on the dependent variables were standardized as the scaling of these measures was not psychologically meaningful. The adversity operationalizations were standardized, as well, to allow for interpretation of the results to be a one-standard deviation change in adversity corresponds to a certain standard deviation change in the dependent variable—that is, the unstandardized regression weights can be interpreted as β. The empathic self-efficacy manipulation was mean-centered to allow for interpretation of the dependent variable to be a standardized mean difference between low and high empathic self-efficacy conditions.

For all eight analyses reported below, standardized adversity operationalizations were entered into block one as the independent variable, the mean-centered empathic self-efficacy manipulation was entered in block two as the moderator, and the interaction between the standardized adversity operationalization and the empathic self-efficacy manipulation was entered in block three. As cases with missing data in the dependent variables were excluded, sample sizes were different for each dependent variable (n = 170 and n = 179 for aversion and effort, respectively), and the empathic self-efficacy manipulation was mean-centered separately for each set of analyses as a result.

Aversion

In models with aversion as the dependent variable, the mean-centered empathic self-efficacy manipulation was coded as follows: -0.4941 for low efficacy and 0.5059 for high efficacy. The square root-transformed adversity severity (event) was the independent variable in the first model. Empathic self-efficacy condition was significantly negatively related to aversion, $b = -0.39$, $SE(b) = 0.15$, $t(166) = -2.59$, $p = .011$, 95% CI(b) [−0.69, −0.09], s$r^2 = 0.04$. This means that participants in the low empathic self-efficacy condition rated the "Feel" task as 0.39 standard deviations more aversive than the "Describe" task. Neither the main effect of square root-transformed adversity severity (event) ($b = -0.02$, $SE(b) = 0.08$, $t(166) = -0.32$, $p = .752$, 95% CI(b) [−0.17, 0.13], s$r^2 = 0.00$) nor the interaction effect ($b = -0.08$, $SE(b) = 0.15$, $t(166) = -0.54$, $p = .591$, 95% CI(b) [-0.38, 0.22], s$r^2 = 0.00$) was significant (see Figure 5).

Log-transformed adversity severity (now) was the independent variable in the second model. Empathic self-efficacy condition was significantly negatively related to aversion, $b = -0.39$, $SE(b) = 0.15$, $t(166) = -2.59$, $p = .010$, 95% CI(b) [−0.69, −0.09], s$r^2 = 0.04$. Neither the main effect of log-transformed adversity severity (now) ($b = -0.05$, $SE(b) = 0.08$, $t(166) = -0.68$, $p = .497$, 95% CI(b) [−0.20, 0.10], s$r^2 = 0.00$) nor the interaction effect ($b = -0.06$, $SE(b) = 0.15$, $t(166) = -0.41$, $p = .685$, 95% CI(b) [−0.36, 0.24], s$r^2 = 0.00$) was significant (see Figure 6).

Similar models were constructed with adversity frequency and recency as independent variables. Similar results, wherein only the main effect of empathic self-efficacy condition was significant, were found. In none of these models was any scoring of adversity related to aversion as a main effect or an interaction effect with empathic self-efficacy condition. Table 6 reports parameter estimates, test statistics, and effect sizes of these models.

Effort

In models with effort as the dependent variable, the mean-centered empathic self-efficacy manipulation was coded as follows: -0.5084 for low efficacy and 0.4916 for high efficacy. Square root-transformed adversity severity (event) was the independent variable in the first model. Neither the main effect of square root-transformed adversity severity (event) (b = 0.03, $SE(b)$ = 0.08, $t(175)$ = 0.34, p = .736, 95% CI(b) [−0.12, 0.17], sr^2 = 0.00), the main effect of the empathic self-efficacy manipulation (b = −0.10, $SE(b)$ = 0.15, $t(175)$ = −0.69, p = .491, 95% CI(b) [−0.40, 0.19], sr^2 = 0.00), nor the interaction between square root-transformed adversity severity (event) and the empathic self-efficacy manipulation (b = −0.12, $SE(b)$ = 0.15, $t(175)$ = −0.78, p = .438, 95% CI(b) [−0.42, 0.18], sr^2 = 0.00) was significant (see Figure 7).

Log-transformed adversity severity (now) was the independent variable in the second model. Neither the main effect of log-transformed adversity severity (now) (b = 0.01, $SE(b)$ = 0.08, $t(175)$ = 0.18, p = .861, 95% CI(b) [−0.14, 0.16], sr^2 = 0.00), the main effect of the empathic self-efficacy manipulation (b = −0.11, $SE(b)$ = 0.15, $t(175)$ = −0.70, p = .486, 95% CI(b) [-0.40, 0.19], sr^2 = 0.00), nor the interaction between log-transformed adversity severity (now) and the empathic self-efficacy manipulation (b = −0.11, $SE(b)$ = 0.15, $t(175)$ = −0.73, p = .468, 95% CI(b) [−0.41, 0.19], sr^2 = 0.00) was significant (see Figure 8).

No blocks were significant for models with adversity frequency or recency entered as independent variables. Neither the empathic self-efficacy condition nor any standardized operationalizations of adversity were related to effort as a main effect; interactions between standardized operationalizations of adversity and empathic self-efficacy condition were not significant. Parameter estimates, test statistics, and effect sizes of these models are reported in Table 6.

Chapter 4: Discussion

Previous research has found that more severe life adversity is positively associated with compassion (Lim & DeSteno, 2016; Lim & DeSteno, 2023) and helping behavior (Lim & DeSteno, 2020; Lim et al., 2024; Vollhardt & Staub, 2011). Given the unexpected nature of this finding—that is, its inconsistency with research associating adversity, trauma, and mental health concerns (e.g., Cerqueira & Almeida, 2023; Mueser et al., 2002; Turner et al., 2020)—more recent work has sought to uncover why adversity is positively related to prosocial outcomes. Lim and DeSteno (2020) found that those who have experienced more severe life adversity were more helpful because they had higher self-efficacy in navigating situations that require helping others. In other words, having "been there" oneself predicted higher self-efficacy in the domain of compassion emotion regulation and, in turn, these people were more likely to help when the opportunity arose. This thesis was designed to replicate these findings that empathic self-efficacy mediates the relationship between adversity and prosocial outcomes (Lim & DeSteno, 2020). The purpose of this study was to extend current research to illustrate that a relationship exists between adversity and empathic emotion regulation via empathy situation selection and that this relationship is mediated by empathic self-efficacy. In addition, the present study was designed to add to the limited research investigating individual differences that could affect selection into empathy, using the Empathy Selection Task (Cameron et al., 2019). To test these aims, a moderation-of-process design was used in which empathic self-efficacy was experimentally manipulated as the mediator in the adversity severity – empathy choice relation.

First, it was expected that all participants, regardless of adversity and empathic self-efficacy condition, would prefer to avoid empathy as seen in past research (e.g., Cameron et al., 2019). However, participants did not significantly prefer to describe objective features over

feeling the emotions of photographic depictions of individuals. When this result was more closely examined, participants in the high empathic self-efficacy condition did not avoid empathy, and participants in the low empathic self-efficacy condition avoided empathy by choosing to describe objective features more often, though this effect was small.

Second, it was hypothesized that participants with higher severity of adversity would choose empathy more often than those with lower adversity severity and that participants in the high empathic self-efficacy condition would choose empathy more often than those in the low empathic self-efficacy condition. Most importantly, it was predicted that an interaction between adversity severity and empathic self-efficacy would occur, such that the positive association between severity of adversity and empathy choice would be stronger in the low empathic self-efficacy condition than in the high empathic self-efficacy condition. Only one of these hypotheses was supported. It was found that participants in the high empathic self-efficacy condition chose to engage in empathy more frequently than those in the low empathic self-efficacy condition. Severity of adversity did not predict increased empathy choices, and an interaction effect was not observed. As such, the results do not support the hypothesis that empathic self-efficacy mediates a relation between adversity severity and empathy choice.

Third, as an exploratory hypothesis, it was predicted that participants with higher adversity severity would rate the Empathy Selection Task (Cameron et al., 2019) as less cognitively effortful and aversive than those with lower adversity severity. It was also expected that participants in the high empathic self-efficacy condition would rate the EST as less cognitively effortful and aversive than those in the low empathic self-efficacy condition. Notably, it was again expected that an interaction would occur between adversity severity and empathic self-efficacy, such that the negative association between severity of adversity and

cognitive load variables would be stronger in the low empathic self-efficacy condition than in the high empathic self-efficacy condition. Participants in the high empathic self-efficacy condition rated the "Describe" deck as more aversive than the "Feel" deck, while participants in the low empathic self-efficacy condition rated the "Feel" deck as more aversive than the "Describe" deck; this pattern was not observed for effort, partially supporting the proposed hypotheses. No other hypotheses were supported; adversity severity did not significantly predict lower cognitive load scores, and interactions between adversity severity and empathic self-efficacy were not observed. As such, the results do not support that empathic self-efficacy mediates a relation between adversity severity and cognitive load.

Implications for Theory, Research, and Practice

Implications of findings related to the empathic self-efficacy manipulation and the Empathy Selection Task (Cameron et al., 2019) are described. Theoretical implications of results associated with the proposed adversity severity, empathic self-efficacy, and empathy choice relation are discussed. Finally, implications of the findings pertaining to the proposed relationship between adversity severity, empathic self-efficacy, and cognitive load are reviewed.

Empathy Selection Task and the Empathic Self-Efficacy Manipulation

Prior research with the Empathy Selection Task across a variety of different contexts has found that participants prefer to avoid empathy if given an alternative option (e.g., Cameron & Inzlicht, 2019; Ge et al., 2023; Swim et al., 2023; Vanbeneden et al., 2024). The lack of empathy avoidance found in this study is most likely due to the inclusion of the empathic self-efficacy manipulation prior to completing the Empathy Selection Task, as the high empathic self-efficacy condition may have increased mean empathy choice across the entire sample. Cameron et al. (2019) found that participants in the high empathic self-efficacy condition did not significantly

avoid empathy and selected into empathy more often than those in the low empathic self-efficacy condition, and the current study also found this pattern of results. Thus, feelings of inefficacy in empathizing may explain why some individuals choose to avoid empathy, and that this hindrance to empathizing can be altered by an increasing individual's self-efficacy to empathize (Cameron et al., 2019). Future research should work to demonstrate this finding across a variety of samples and contexts.

While the above results are consistent with Cameron et al. (2019), it was not found in this study that empathic self-efficacy alone was altered by the empathic self-efficacy manipulation. Instead, participants in the high empathic self-efficacy condition reported higher scores for both efficacy at understanding other's feelings (empathic self-efficacy) and understanding their own personal feelings (emotion self-awareness). By demonstrating that increasing empathic self-efficacy increases empathy choice, initial evidence is provided for construct/convergent validity of the empathic self-efficacy manipulation. However, the empathic self-efficacy manipulation's effects extended beyond empathic self-efficacy to include emotion self-awareness, showing poor discriminant validity. Emotion self-awareness and empathic self-efficacy fall within the same nomological network as they are similar constructs related to emotion awareness and regulation. To truly demonstrate construct validity of the empathic self-efficacy manipulation according to Chester and Lasko (2020), a nomological shockwave should have been observed, such that the effect of the manipulation should have been stronger for empathic self-efficacy than for emotion self-awareness. Future studies using this empathic self-efficacy manipulation should work to restrict its effects to empathic self-efficacy.

Several changes were made to the empathic self-efficacy manipulation designed by Cameron et al. (2019) to improve believability of the manipulation and further isolate its ability

to promote only empathic self-efficacy. In Cameron et al. (2019), participants' responses were reported back to them immediately along with feedback stating that their responses were correct or incorrect. This component of the manipulation was removed from this study as it was thought that participants would too easily guess that the feedback was contrived. Feedback was instead only given to participants in summary format after they completed the practice trials for the "Describe" and "Feel" decks. This feedback was slightly altered, as well. All participants in the current study, regardless of high or low empathic self-efficacy condition, received the same feedback that they performed better than 50% of others on the "Describe" trials; thus, the only difference between high and low empathic self-efficacy conditions was receiving feedback that participants performed better than 95% of others (high) or 50% of others (low) on the "Feel" deck. This change to the manipulation's feedback ensures that empathic self-efficacy alone is manipulated, not efficacy for describing objective features of faces.

Adversity Severity, Self-Efficacy, and Empathic Emotion Regulation

Lim and DeSteno (2020) found that both measured and experimentally manipulated self-efficacy for helping and empathizing with others mediates the relationship between adversity and prosocial outcomes. In the current study, a relationship between adversity and empathic emotion regulation via situation selection was not found nor was this relationship affected by empathic self-efficacy in any way. There are multiple possible explanations for these conflicting findings.

First, in studies (e.g., Lim & DeSteno, 2016; Lim & DeSteno, 2020; Lim & DeSteno, 2023) examining an association between adverse experiences and prosocial outcomes, the prosocial outcomes are most often either some form of compassion or self-reported prosocial actions (e.g., El-Gabalawy et al., 2021; Lim et al., 2024), though Lim and DeSteno (2016) found a positive relationship between severity of adversity and scores on empathy self-report measures.

The current study was the first to examine whether this relationship persists in a different domain: empathic emotion regulation via situation selection. Research suggesting that compassion and empathy are distinct emotions (e.g., Goetz et al., 2010; Zaki, 2014) supports the notion that different cognitive/emotional process may be involved in engaging in compassion compared to empathic emotion regulation, and perhaps adverse experiences do not impact empathy as robustly as with compassion. Further, factors that motivate and otherwise affect selection into empathy are still not entirely understood (Cameron et al., 2022), though research suggests that empathizing is most likely when benefits to the person outweigh the costs of empathizing. For instance, Ferguson et al. (2020) found that offering monetary incentives for empathizing increased selection into empathy compared to alternative options. External social context and empathic self-efficacy may play more of a role in empathic emotion regulation than other individual difference factors, such as adversity or occupation. For example, findings that no differences emerged in the tendency to avoid empathy between physicians and demographically matched controls offer support for this idea (Cameron & Inzlicht, 2019).

Second, Lim and DeSteno (2020) manipulated empathic self-efficacy in a different manner than in the current study. As compassion was the prosocial outcome of interest, an element of the empathic self-efficacy manipulation was to highlight the role that empathy plays in "caring for others" and "alleviating their pain" (p. 1350). It was found that participants high in adversity exhibited no change in self-efficacy in response to the empathic self-efficacy manipulation, arguably due to their adverse experiences allowing them to develop self-efficacy regarding assisting others in times of struggle (Lim & DeSteno, 2020). The manipulation included in the current study specifically targeted self-efficacy concerning awareness and understanding the emotions of others. It is possible that adversity facilitates the development of

self-efficacy pertaining to helping others and compassion without facilitating a similar increase in self-efficacy pertaining to accurately feeling and understanding the emotions of others (i.e., empathy) or a desire to engage in situations that require this skill; this could, in turn, explain why an increase in empathy choice was not observed for those with higher adversity severity.

Third, Lim and DeSteno's (2020) results suggest partial mediation, such that empathic self-efficacy alone is not enough to explain the observed association between adversity and compassion. More recent research by these researchers suggests that individuals who have experienced adversity are prone to guilt regarding not assisting when they encounter a person in need, and this guilt can explain the positive relationship between adversity severity and compassion (Lim & DeSteno, 2023). Further, Lim et al. (2024) found that belief in others as benevolent can moderate the positive relationship between adversity frequency and prosocial outcomes, such as volunteering and self-report measures of empathic concern and altruism. Thus, the mechanism explaining the relationship between adversity and prosocial outcomes is still a relatively unexplored area of research and likely cannot be explained by any one factor, and this relationship may be very different for different types of prosociality. Future research in this domain should identify additional factors affecting the relationship between adversity and prosociality, as well as the specific types of prosociality that are encouraged by experiences with adversity.

Adversity Severity, Self-Efficacy, and Cognitive Load

In past research with the Empathy Selection Task and NASA Task Load Index (Hart & Staveland, 1988), the "Feel" deck was rated as less aversive but required the same amount of effort as the "Describe" deck for those in the high empathic self-efficacy condition; for those in the low empathic self-efficacy condition, the "Feel" deck was rated as more aversive and more

effortful than the “Describe” deck (Cameron et al., 2019). The results of the current study were largely consistent with the above; in the high empathic self-efficacy condition, participants rated the “Feel” deck as less aversive and both decks as approximately equally effortful compared to the low empathic self-efficacy participants. As effort and aversion are grouped together in this context to define cognitive load, the different results for each variable are worth exploring.

The empathic self-efficacy manipulation did not predict perceived effort in completing the “Feel” versus “Describe” tasks. One explanation for this finding could be that participants found the entire study boring or unpleasant. Indeed, some participants stated via written responses to follow-up questions about the study itself, rather than one task over the other, that the study was boring, repetitive, or even “hated.” Effort was defined as mental demand and difficulty completing the task; it is possible that participants reported higher scores on effort by the amount of effort required to continue the task despite the boredom associated with completing 28 trials of the task, and increasing empathic self-efficacy did not increase their enjoyment or reduce their boredom associated with the decks. In contrast, experimentally manipulating empathic self-efficacy predicted task aversion ratings. Participants in the high empathic self-efficacy condition rated the “Describe” deck as more aversive than the “Feel” deck, while the opposite pattern was observed in the low empathic self-efficacy condition. As a high sense of self-efficacy in a domain is associated with approaching that domain (Bandura, 1977), it follows that participants would prefer the deck for which they received positive feedback about their exceptional performance and rate this deck as less discouraging, irritating, annoying, and stressful (as aversion was defined in this study). Future studies investigating a relationship between empathic self-efficacy and cognitive load variables effort and aversion should work to identify possible reasons behind these different findings.

No previous research has associated adversity severity and cognitive load related to the Empathy Selection Task (Cameron et al., 2019); as such, the hypotheses concerning a negative relationship between adversity severity and cognitive load and an interaction effect between adversity severity and empathic self-efficacy on cognitive load were largely exploratory. Further, this relationship between adversity severity and cognitive load variables was hypothesized under the assumption that adversity severity would be associated with increased prosocial outcomes due to increases in empathic self-efficacy. By nature of high adversity severity participants selecting into empathy more, it was expected that the cognitive load of this decision would be less. As no relationship was found between adversity severity and empathy choice, it is to be expected that no relationship would be observed between adversity and cognitive load related specifically to the task. As positive relationships have been found with adversity severity and compassion (e.g., Lim & DeSteno, 2020), future research could examine whether a relationship exists between perceived cognitive load related to tasks requiring compassion and adversity severity.

Limitations and Future Directions

Participants in this study did not complete the study in a controlled laboratory setting; this was an online survey-based study in which participants signed up to complete the study in their own time and environments. Thus, it is highly possible that participants were distracted or otherwise not devoting their full attention to accurately completing this survey, which is a common concern in online studies (e.g., Rodd, 2024). The exclusion of participants who did not complete the survey in its entirety and participants who responded to a non-response attention check question attempted to address this issue. Future research should require participants to complete the Empathy Selection Task in person in a laboratory environment; this could help

reduce potential distractions and other disturbances that could alter responses. In this case, protections against potential observer biases need to be put in place.

Similarly, as responses to the Empathy Selection Task were not qualitatively analyzed in this study, it is possible that participants selected into empathy but did not truly empathize with the photographs (e.g., selected "Feel" but objectively described the face pictured). The inclusion of faces depicting different emotions, such as anger and fear, was designed to prevent participants from responding in predetermined ways. That is, participants would not be able to use the same keywords for every face pictured after selecting into empathy. Still, it is not possible to rule out conclusively that participants were completing the task dishonestly. Future research with the Empathy Selection Task should include qualitative analysis of the responses to the task to more accurately determine effects of different manipulations or individual differences as removal of participants who do not truly empathize with the faces pictured could alter the results found in some way.

While study suspicion questions were included in the debriefing and written responses were closely examined, it is possible that participants did not honestly report their suspicions about the purpose of the study and the manipulation. Future studies involving false feedback could offer a reward for reporting suspicions about the study or correctly identifying the study purpose, which has increased reporting of study suspicions in past research (Blackhart et al., 2011). Demand characteristics are also a potential issue in this study. Participants were asked to report their perceived self-efficacy for emotion self-awareness and empathizing before and after being told that they performed exceptionally well or average on a task related to empathy. Another possible complication with this study is that all participants answered the Adverse Life Events Scale (Blum et al., 2014) in the same study session after completing the Empathy

Selection Task and participating in the empathic self-efficacy manipulation. Counterbalancing of study measures was not used. Future research with adversity and self-efficacy manipulations should randomize the order in which participants experience the self-efficacy manipulation and the measures of adversity.

Most participants in this study were from a convenience sample of introduction to psychology students learning about the concepts assessed in this study. While the inclusion of Prolific workers does increase diversity of the sample, the limitations described above prevent the results from being generalized beyond a laboratory context. Future studies examining consequences of adversity and using the Empathy Selection Task should include more diverse samples to increase generalizability of the results.

Conclusion

In conclusion, evidence was not found for the idea that empathic self-efficacy mediates the relationship between adversity and empathic emotion regulation via situation selection. However, this research does support that empathic self-efficacy can be experimentally manipulated and can result in subsequent increases in willingness to engage in empathy, as measured with the Empathy Selection Task (Cameron et al., 2019).

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Appendix A
Informed Consent – University Sample

Title of Research: Psychological Traits and Decision-Making II

Purpose:
You are being invited to participate in a research study designed to understand how psychological traits affect people's choices to engage with emotional situations. You were selected as a possible participant as a student at Radford University enrolled in a psychology course with a research requirement. Your participation will contribute to a better understanding of the processes under study.

This research is being conducted by Daniel Berry, PhD of the Department of Psychology at Radford University. You are free to contact the investigator at the below email address and phone number to discuss the online survey. I estimate that it will take about 45 minutes of your time to complete this online survey. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Procedures:
If you decide to be in the study, you will be asked to do the following things:

- Complete a decision-making task in which you will select between (1) "describing" a photographic image of a person's face or (2) "feeling" the emotions this person in the photographic image is expressing. You will be asked to complete eight (8) practice trials. Thereafter, you will be asked to view a total of twenty (20) photographic images depicting faces of people, and you will be able to choose between the "describing" and "feeling" task for each image.
- Complete a questionnaire about your experiences with adverse life events.
- Complete a questionnaire about your demographic information.

Approximately two-hundred-ten (210) students from Radford University will be asked to participate in the study. Data is recorded using Qualtrics survey software.

Risks of Discomforts:
I anticipate that your participation in this survey presents no greater risk than everyday use of the internet. Some of the questions I will ask you as part of the study may make you feel uncomfortable. You may refuse to answer any of these questions, take a break, or stop your participation in the study at any time.

If you feel emotional distress from your participation in the study, you may contact Student Counseling Services for free sessions at 540.831.5226, scs@radford.edu, or stop by the office in Davis Hall 008. You may also contact your health provider.

Confidentiality:
The research team will work to protect the confidentiality of the information you provide to the

extent permitted by technology. It is possible, although unlikely, that an unauthorized individual could gain access to your responses similar to your everyday use of the internet. No identifiable information will be collected in this Qualtrics survey and IP addresses will not be recorded. A limited number of research team members will have access to the information you provide. The information you provide will be encrypted and stored electronically on a password-protected computer in a Radford University office under surveillance. Data will also be stored on a Radford University approved OneDrive account. There are no paper-based materials in this study, and there is no information linking you to your responses. The information you provide will also be stored in a public repository called the Open Science Framework. Public repositories are useful for scientists to reproduce statistical analyses reported in scientific publications. The responses you provide in this survey will be stored indefinitely for a minimum of three years. Information we record in this study may be presented in aggregate form at scientific meetings or publications; your name or other personal information will not be revealed.

When and Where to Participate in this Study:

You may participate in this study anywhere, and you can begin the survey by clicking "I agree to participate" at bottom of this page.

Benefits of Participating in the Study:

There are no personal benefits from participation in this study. However, your participation will help scientists to understand how people choose to engage with emotional situations.

Incentive:

You will receive 2 course credits for completing this online survey.

Voluntary Participation:

Your participation in this survey is voluntary. You may decline to answer any question, and you have the right to withdraw from participation at any time without penalty or impact on your course grades or program progression. If you wish to withdraw from the study or have any questions, contact the investigator listed above. To withdraw from the study, you exit your web browser.

Questions about Your Rights as a Participant:

If you have any questions, please call Dr. Daniel Berry at 540.831.5361 or send an email to dberry7@radford.edu. You may also download a PDF of this consent form at this link **Consent Form**

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Jeanne Mekolichick, Institutional

Official and Associate Provost for Research, Faculty Success, and Strategic Initiatives, jmekolic@radford.edu, 540.831.6504.

Statement of Consent:

If you agree to participate, please **check the response "I agree to participate."** Otherwise, please check the response "I do not agree to participate" and exit your web browser.

Appendix B
Informed Consent – Prolific

Title of Research: Psychological Traits and Decision-Making II

Purpose:
You are being invited to participate in a research study designed to understand how psychological traits affect people's choices to engage with emotional situations. You were selected as a possible participant because you are a Prolific user over the age of 18. Your participation will contribute to a better understanding of the processes under study.

This research is being conducted by Daniel Berry, PhD of the Department of Psychology at Radford University. You are free to contact the investigator at the below email address and phone number to discuss the online survey. I estimate that it will take about 45 minutes of your time to complete this online survey. I ask that you read this form and ask any questions you may have before agreeing to be in the study.

Procedures:
If you decide to be in the study, you will be asked to do the following things:

- Complete a decision-making task in which you will select between (1) "describing" a photographic image of a person's face or (2) "feeling" the emotions this person in the photographic image is expressing. You will be asked to complete eight (8) practice trials. Thereafter, you will be asked to view a total of twenty (20) photographic images depicting faces of people, and you will be able to choose between the "describing" and "feeling" task for each image.
- Complete a questionnaire about your experiences with adverse life events.
- Complete a questionnaire about your demographic information.

Forty (40) Prolific participants will be recruited to participate in this study. Data is recorded using Qualtrics survey software.

Risks of Discomforts:
I anticipate that your participation in this survey presents no greater risk than everyday use of the internet. Some of the questions I will ask you as part of the study may make you feel uncomfortable. You may refuse to answer any of these questions, take a break, or stop your participation in the study at any time.

If you feel emotional distress from your participation in the study, you may contact your health provider.

Confidentiality:
The research team will work to protect the confidentiality of the information you provide to the extent permitted by technology. It is possible, although unlikely, that an unauthorized individual could gain access to your responses similar to your everyday use of the internet. No identifiable

information will be collected in this Qualtrics survey and IP addresses will not be recorded. A limited number of research team members will have access to the information you provide. The information you provide will be encrypted and stored electronically on a password-protected computer in a Radford University office under surveillance. Data will also be stored on a Radford University approved OneDrive account. There are no paper-based materials in this study, and there is no information linking you to your responses. The information you provide will also be stored in a public repository called the Open Science Framework. Public repositories are useful for scientists to reproduce statistical analyses reported in scientific publications. The responses you provide in this survey will be stored indefinitely for a minimum of three years. Information we record in this study may be presented in aggregate form at scientific meetings or publications; your name or other personal information will not be revealed.

When and Where to Participate in this Study:
You may participate in this study anywhere you can conveniently log in to the Prolific website, and you can begin the survey by clicking "I agree to participate" at bottom of this page.

Benefits of Participating in the Study:
There are no personal benefits from participation in this study. However, your participation will help scientists to understand how people choose to engage with emotional situations.

Incentive:
You will receive $8.00 USD for completing this online survey. At the end of the survey, you will be given a completion code that you will then type into Prolific to receive your compensation.

Voluntary Participation:
Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from participation at any time without penalty. If you wish to withdraw from the study or have any questions, contact the investigator listed above. To withdraw from the study, you exit your web browser.

Questions about Your Rights as a Participant:
If you have any questions, please call Dr. Daniel Berry at 540.831.5361 or send an email to dberry7@radford.edu. You may also download a PDF of this consent form at this link [Downloadable Consent].

This study was approved by the Radford University Committee for the Review of Human Subjects Research. If you have questions or concerns about your rights as a research subject or have complaints about this study, you should contact Dr. Jeanne Mekolichick, Institutional Official and Associate Provost for Research, Faculty Success, and Strategic Initiatives, jmekolic@radford.edu, 540.831.6504.

Statement of Consent:

If you agree to participate, please **check the response "I agree to participate."** Otherwise, please check the response "I do not agree to participate" and exit your web browser.

Appendix C
Research Design Figures

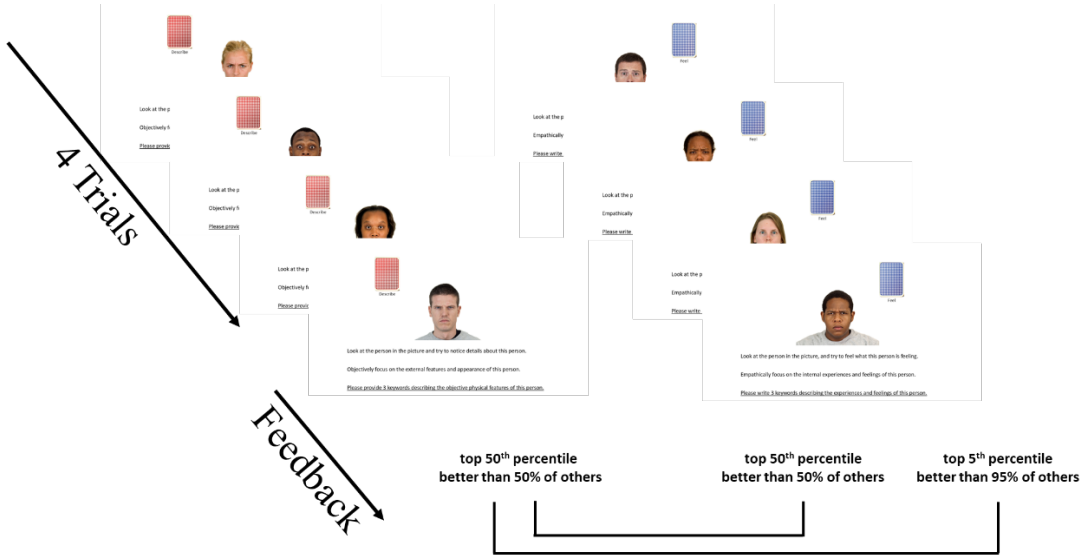
Figure 1

Empathy Selection Task Flow

Note. Figure depicts a modified version of the Empathy Selection Task (Cameron et al., 2019).

Figure 2

Empathic Self-Efficacy Manipulation Flow



Note. Figure depicts modified version of the empathic self-efficacy manipulation described in Cameron et al. (2019).

Appendix D
Empathy Selection Task Instructions and Example

Instructions: In this task, you will complete a series of trials. On each trial, you will see two decks of cards. You should choose between these decks. Once you choose a deck, you will then see an image of a person. These are actors that we've asked to look certain ways and express certain emotions.

On the **DESCRIBE** trials, you will be told to be objective and focus on the external features and appearances of the person in the image. When completing this kind of trial, try to be as objective as possible. To be objective, do not let yourself get caught up in imagining what this person feels. On these trials, please provide three keywords to describe the physical appearance of the person, as if you were describing them to a sketch artist. (Example: "white, woman, long hair" or "young, black, blue eyes"). It is ok to use the same keywords multiple times, just make sure that you are accurately describing the physical appearance of the person in the image (e.g., age, gender, race, etc.).

On the **FEEL** trials, you will be told to have empathy and focus on the internal feelings and experiences of the person in the image. When completing this kind of trial, try to feel as much empathy as possible. To be empathic, let yourself get caught up in imagining what this person feels. On these trials, please provide three keywords to describe the feelings and experiences of the person. (Example: "sad, hurt, confused" or "happy, pleased, interested"). It is ok to use the same keywords multiple times, just make sure that you are a describing the internal feelings and experiences of the person in the image.

Which of the following is an appropriate response for the **DESCRIBE** deck trials?

1. smiling, woman, white
2. *woman, young, blonde*
3. happy, smiling, blonde

Which of the following is an appropriate response for the **FEEL** deck trials?

1. smiling, white, woman
2. woman, happy, blonde
3. *happy, interested, curious*

You will complete a set of practice trials. These trials are meant to give you experience with both the **DESCRIBE** and **FEEL** decks, so you will complete each separately.

Appendix E
Empathic Self-Efficacy Manipulation Check

Instructions: Please answer the following questions on a scale from 0 ("Not good at all") to 100 ("Incredibly good").

Not good at all Incredibly good

Note: Participants will use this slider to rate their efficacy beliefs regarding emotion self-awareness and empathic self-efficacy.

1. I usually feel like I am very aware of and good at understanding exactly what I'm feeling.
2. I usually feel like I am very aware of and good at understanding exactly what other people are feeling.

Scoring: Average item 1 *emotion self-awareness*. Item 2 is *empathic self-efficacy*.

Appendix F
Empathic Self-Efficacy Manipulation "Describe" Deck Instructions

This is your **DESCRIBE** practice.

Remember: On the **DESCRIBE** trials, you will be told to be objective and **focus on the external features and appearances of the person in the image**. When completing this kind of trial, try to be as objective as possible. To be objective, do not let yourself get caught up in imagining what this person feels. On these trials, please provide three keywords to **describe the physical appearance of the person**, as if you were describing them to a sketch artist. (Example: "white, woman, long hair" or "young, black, blue eyes"). It is ok to use the same keywords multiple times, just make sure that you are accurately describing the physical appearance of the person in the image (e.g., age, gender, race, etc.).

For each image, a panel of judges has identified the most descriptive and helpful keywords for distinguishing the person in a sketch. If at least 2 of your keywords match the judges' keywords, we'll let you know during the practice trials!

Feedback: Of all the people tested so far, you scored in the: top 50th percentile of all Workers for the **DESCRIBE** deck practice trials! This means that you were better at describing the physical appearance of the person in the image than 50 percent of people who have completed the **DESCRIBE** deck practice trials. Congratulations!

Appendix G
Empathic Self-Efficacy Manipulation "Feel" Deck Instructions

This is your **FEEL** practice.

Remember: On the **FEEL** trials, you will be told to **have empathy and focus on the internal feelings and experiences of the person in the image**. When completing this kind of trial, try to feel as much empathy as possible. To be empathic, let yourself get caught up in imagining what this person feels. On these trials, please provide three keywords to **describe the feelings and experiences of the person**. (Example: "sad, hurt, confused" or "happy, pleased, interested"). It is ok to use the same keywords multiple times, just make sure that you are a describing the internal feelings and experiences of the person in the image.

We had the actors write down several keywords describing their own experience. If at least 2 of your keywords match their list of keywords, we'll let you know during the practice trials!

Low Empathic Self-Efficacy Feedback Condition Instructions:

> Of all the people tested so far, you scored in the: top 50th percentile of all Workers for the **FEEL** deck practice trials! This means that you were better at knowing how the actor felt than 50 percent of people who have completed the **FEEL** deck practice trials.

High Empathic Self-Efficacy Feedback Condition Instructions:

> Of all the people tested so far, you scored in the: **top 95th percentile** of all Workers for the **FEEL** deck practice trials! This means that you were better at knowing how the actor felt than 95 percent of people who have completed the **FEEL** deck practice trials.

Appendix H
Demographic Questionnaire

1. What is your age in years? (written response)
2. What is your gender? (written response)
3. What is your race/ethnicity? (written response)
4. What is your approximate household income in $USD per year?
    a. Less than $25,000 USD
    b. $25,000 USD - $49,999 USD
    c. $50,000 - $74,999 USD
    d. $75,000 USD - $99,999 USD
    e. $100,000 - $199,999 USD
    f. More than $200,000 USD
5. What is the highest degree or level of education you have completed?
    a. Some high school
    b. High school
    c. Some college
    d. Associate degree
    e. Bachelor's degree
    f. Master's degree
    g. Ph.D. or Doctoral Degree
    h. Trade school
6. A version of the MacArthur Ladder (Adler, 2000) was included to measure subjective social class.

Think of this ladder as showing where people stand in their communities.

People define community in different ways. Please define it in whatever way is most meaningful to you.

At the top of the ladder are the people who have the highest standing in their community.

At the bottom are the people who have the lowest standing in their community.

Where would you place yourself on this ladder?

Place an **X** on the rung where you think you stand at this time of your life relative to other people in your community.

Appendix I
Post-Empathy Selection Task Questionnaire

Instructions: Below are open-ended questions about your experiences with the card task you just completed. You can write as much as you want; most people write one sentence for each question.

1. What was it like performing the task?
2. How did you choose between the decks?
3. Did you develop a preference for one of the decks? If so, which one did you prefer?
4. Was there any difference between the decks?

Appendix J
National Aeronautics and Space Administration (NASA) Task Load Index

Instructions: For the following questions, please rate the **DESCRIBE** / **FEEL** deck. A score of "0" indicates the least amount of demand/effort/success, and a score of "21" indicates the most amount of demand/effort/success. If you never selected the **DESCRIBE / FEEL** deck, please skip to the next page.

Note: Participants will use this slider to rate cognitive load of the Describe task and then the Feel task on the following items.

1. How mentally demanding was this deck?
2. How hard did you have to work to accomplish your level of performance with this deck?
3. How insecure, discouraged, irritated, stressed, and annoyed were you by this deck?
4. How successful were you in accomplishing what you were asked to do in this deck?

Scoring: Average items 1 and 2 for *cognitive effort*. Item 3 is *aversion*. Item 4 is *efficacy*.

Appendix K
Adverse Life Events Scale

Instructions: In the following questionnaire, you will be asked a series of 37 questions about adverse life experiences. If you answer "yes" to any of the following questions, you will be prompted to answer a few follow-up questions about that event.

1. Suffered a serious accident or injury
2. Been physically attacked or assaulted
3. Serious accident or injury of a loved one
4. Suffered a serious illness
5. Serious illness of a loved one
6. Witnessed family member injured or killed
7. Witnessed someone (other than a family member) being injured or killed
8. Been coerced with threats of harm to yourself or your family
9. Experienced forced separation from family/children
10. Had combat experience
11. Death of your mother
12. Death of your father
13. Death of your brother or sister
14. Death of your grandparent
15. Death of your friend
16. Death of your spouse/partner
17. Death of your child
18. Got divorced yourself
19. Experienced your parents' divorce
20. Experienced serious financial difficulties (i.e., no money for food or shelter)
21. Experienced a major fire, flood, earthquake, or any natural disaster in your community
22. Suffered a loss in a major fire, flood, earthquake, or any natural disaster in your community
23. Experienced a tragedy or disaster in your community caused by people (a shooting, bombing, etc.)
24. Suffered a loss in a tragedy or disaster in your community caused by people (a shooting, bombing, etc.)
25. Lived in dangerous housing or neighborhood
26. Been discriminated against because of your ethnicity, religious background, or sexual orientation
27. Been exposed to dangerous chemicals or biological agents
28. Were neglected (as a child) by your parent(s)
29. Been physically harmed as a child (hit hard enough to leave a bruise or mark, kicked, burned, etc.)
30. Witnessed violence between your parents as a child
31. Been hit or pushed by your partner/spouse
32. Been shamed, embarrassed, or told repeatedly that you are "no good"
33. Had an unwanted pregnancy

34. Had a miscarriage
35. Had an abortion
36. Had someone touch or feel private areas of your body or touched under force of threat or been made to feel another's private areas under force of threat
37. Had sexual relations under force or threat

1. Each item gets a Yes/No checkbox.
2. Each item gets three follow-up questions when participants answer yes.

When did this event occur?

Within the last 3 months	Within the last year	1 – 5 years ago	6 – 10 years ago	10+ years ago

How much did this event affect you emotionally at that time?

Not at all	Mildly	Moderately	Significantly	Severely

How much does this event affect you emotionally now?

Not at all	Mildly	Moderately	Significantly	Severely

Appendix L
Funneled Debriefing

1. What did you think of this study? (free response)
2. What did you think the purpose of this study was? (free response)
3. Were you suspicious about anything?
    a) yes
        i. You answered "yes" to being suspicious about the study. Please elaborate on your suspicions about the study.
    b) no
4. Did you think we were trying to deceive you?
    a) yes
        i. You answered "yes" to being suspicious about the study. Please elaborate on your suspicions about the study.
    b) no
5. During the practice trials, you were provided feedback about your performance on the **DESCRIBE** deck (the red one). What did you think about that feedback? (free response)
6. Did you think the feedback we gave you for the **DESCRIBE** deck (the red one) was accurate?
    a) Yes, I did.
    b) No, I didn't.
    c) I didn't think about it much.
    d) I wasn't sure, but I was skeptical.
7. During the practice trials, you were provided feedback about your performance on the **FEEL** deck (the blue one). What did you think about that feedback? (free response)
8. Did you think the feedback we gave you for the **FEEL** deck (the blue one) was accurate?
    a) Yes, I did.
    b) No, I didn't.
    c) I didn't think about it much.
    d) I wasn't sure, but I was skeptical.

Appendix M
Data Release Form – Radford University

Data Release Form – Deception Studies

Title of Study: Psychological Traits and Decision-Making II

During the experiment, you were told that we were studying the effects of psychological traits on decision-making without your knowledge or permission. The researchers wanted to record your natural choices to feel compassion for (or avoid feeling compassion for) people. Additionally, you were randomly assigned to receive feedback that you performed well (better than 95% of others) or average (better than 50% of others) on the practice Feel trials at the beginning of the study. You also received feedback that you performed at an average level on the Describe trials at the beginning of the study.

Psychological research has found that experimentally increasing emotional self-efficacy, or one's belief in their ability to interpret and apply emotional information, may increase people's willingness to engage in emotional situations. We wanted to see if telling you that you performed well on tasks requiring feeling the emotions of others (i.e., empathy) increased your willingness to select the Feel card deck.

Thus, the true purpose of the study was **to understand how psychological traits related to emotion regulation (i.e., adversity, self-efficacy) would predict your decisions to empathize with people.**

Because you were misled as to the true purpose of the study, you now have the right to refuse to allow your data to be used and to request that they be destroyed immediately. You will still receive the full **2 course credits** for the experiment.

If you agree to include your responses in the experiment, they may be reviewed and analyzed by graduate or undergraduate research assistants.

If you feel emotional distress from your participation in the study, you may contact Student Counseling Services for free sessions. For Radford University students, you may contact Student Counseling Services at 540.831.5226, scs@radford.edu, or stop by the office in Davis Hall 008. You may also contact your health provider.

You can download a copy of this form for your records. Deception Release Form
You can also download a copy of the consent form here. Consent Form

Appendix N
Data Release Form – Prolific

Data Release Form – Deception Studies

Title of Study: Psychological Traits and Decision-Making II

During the experiment, you were told that we were studying the effects of psychological traits on decision-making without your knowledge or permission. The researchers wanted to record your natural choices to feel compassion for (or avoid feeling compassion for) people. Additionally, you were randomly assigned to receive feedback that you performed well (better than 95% of others) or average (better than 50% of others) on the practice Feel trials at the beginning of the study. You also received feedback that you performed at an average level on the Describe trials at the beginning of the study.

Psychological research has found that experimentally increasing emotional self-efficacy, or one's belief in their ability to interpret and apply emotional information, may increase people's willingness to engage in emotional situations. We wanted to see if telling you that you performed well on tasks requiring feeling the emotions of others (i.e., empathy) increased your willingness to select the Feel card deck.

Thus, the true purpose of the study was **to understand how psychological traits related to emotion regulation (i.e., adversity, self-efficacy) would predict your decisions to empathize with people.**

Because you were misled as to the true purpose of the study, you now have the right to refuse to allow your data to be used and to request that they be destroyed immediately. You will still receive the full **$8.00 USD** for the experiment.

If you agree to include your responses in the experiment, they may be reviewed and analyzed by graduate or undergraduate research assistants.

Appendix O
Tables

Table 1

Comparing Age and Social Class Across Empathic Self-Efficacy Conditions

	n	*M* (*SD*)	*t* (*df*)	*p*	*d*
Age			−0.33 (179)	.743	−0.05
Low	89	21.11 (7.99)			
High	92	21.51 (8.33)			
Social Class			0.00 (179)	1.00	0.00
Low	89	5.34 (1.81)			
High	92	5.34 (1.74)			

Note. n = sample size, *M* = mean, *SD* = standard deviation, *df* = degrees of freedom, *d* = Cohen's *d*, low = low empathic self-efficacy condition, high = high empathic self-efficacy condition.

Table 2

Comparing Gender, Race, Education, and Income Across Empathic Self-Efficacy Conditions

	χ^2 (*df*)	*p*	*V*
Gender	1.68 (2)	.431	.10
Race	6.79 (4)	.147	.19
Education	2.37 (4)	.669	.11
Income	1.73 (5)	.884	.10

Note. χ^2 = chi-square statistic, *df* = degrees of freedom, *V* = Cramer's *V*. Sample size for all analyses was 181.

Table 3

Means and Standard Errors for Time by Empathic Self-Efficacy Condition Interaction on Efficacy Scores

		Time 1		Time 2	
	n	*M*	*SE*	*M*	*SE*
Low Empathic Self-Efficacy	88	67.14	1.87	67.18	1.84
High Empathic Self-Efficacy	92	65.91	1.83	69.89	1.78

Note. Time 1 = pre-manipulation of empathic-self efficacy, Time 2 = post-manipulation of empathic self-efficacy, *M* = mean, *SE* = standard error, *n* = sample size. In the high empathic self-efficacy condition, efficacy scores significantly increased from pre- to post-manipulation ($b = 3.98$, $SE(b) = .92$, $t(178) = 4.32$, $p < .001$).

Table 4

Summary Statistics for Adversity Variables for Total Sample

	Original			Square Root Transformation			Natural Log Transformation		
	M (*SD*)	Skew (*SE*)	Kurt (*SE*)	*M* (*SD*)	Skew (*SE*)	Kurt (*SE*)	*M* (*SD*)	Skew (*SE*)	Kurt (*SE*)
Frequency	5.70 (4.44)	1.26 (0.18)	1.68 (0.36)						
Recency	0.43 (0.33)	1.10 (0.18)	1.02 (0.36)						
Severity (Event)	0.56 (0.46)	1.59 (0.18)	3.18 (0.36)	1.23 (0.17)	1.17 (0.18)	1.49 (0.36)			
Severity (Now)	0.40 (0.37)	1.85 (0.18)	4.45 (0.36)	1.17 (0.15)	1.42 (0.18)	2.42 (0.36)	0.30 (0.23)	1.01 (0.18)	1.05 (0.36)

Note. M = mean, *SD* = standard deviation, Skew = skewness, *SE* = standard error, Kurt = kurtosis.

Table 5

Scores on Outcome Variables

	Total Sample			Low Self-Efficacy			High Self-Efficacy		
	n	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*
Empathy Choice	181	9.72	4.07	89	8.84	3.88	92	10.57	4.09
Aversion	170	1.11	6.80	86	2.42	5.70	84	−0.24	7.57
Effort	179	2.75	5.68	88	3.06	5.29	91	2.46	6.04

Note. *n* = sample size, *M* = mean, *SD* = standard deviation.

Table 6

Frequency and Recency of Adversity Moderation Analyses

	b (*SE*(*b*))	*t* (*df*)	*p*	CI(*b*) LL	CI(*b*) UL	sr^2
Empathy Choice						
Frequency	−0.31 (0.30)	−1.04 (177)	.302	−0.90	0.23	0.01
Self-Efficacy	1.71 (0.59)	2.87 (177)	.005	0.54	2.88	0.04
Interaction	−0.06 (0.60)	−0.10 (177)	.919	−1.24	1.16	0.00
Empathy Choice						
Recency	−0.21 (0.30)	−0.69 (177)	.489	−0.80	0.38	0.00
Self-Efficacy	1.71 (0.60)	2.88 (177)	.005	0.54	2.89	0.04
Interaction	−0.05 (0.60)	−0.09 (177)	.932	−1.23	1.13	0.00
Aversion						
Frequency	0.01 (0.08)	0.15 (166)	.884	−0.14	0.16	0.00
Self-Efficacy	−0.39 (0.15)	−2.57 (166)	.011	−0.69	−0.09	0.04
Interaction	−0.04 (0.15)	−0.28 (166)	.780	−0.34	0.26	0.00
Aversion						
Recency	−0.02 (0.08)	−0.23 (166)	.821	−0.17	0.13	0.00
Self-Efficacy	−0.39 (0.15)	−2.58 (166)	.011	−0.69	−0.09	0.04
Interaction	−0.01 (0.15)	−0.08 (166)	.936	−0.32	0.29	0.00
Effort						
Frequency	0.04 (0.08)	0.51 (175)	.610	−0.11	0.19	0.00
Self-Efficacy	−0.10 (0.15)	−0.69 (175)	.494	−0.40	0.19	0.00
Interaction	−0.05 (0.15)	−0.30 (175)	.766	−0.34	0.25	0.00
Effort						
Recency	−0.00 (0.08)	−0.06 (175)	.954	−0.15	0.15	0.00
Self-Efficacy	−0.11 (0.15)	−0.70 (175)	.486	−0.40	0.19	0.00
Interaction	−0.04 (0.15)	−0.24 (175)	.811	−0.34	0.26	0.00

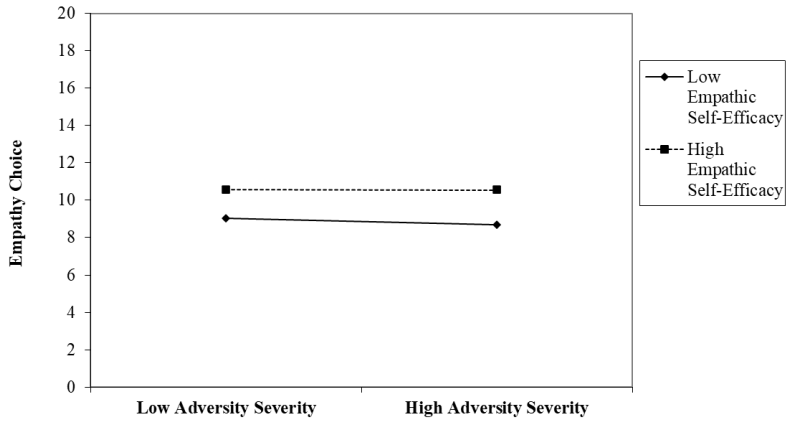
Note. *b* = "unstandardized" regression coefficient; *SE*(*b*) = standard error of the regression coefficient; CI(*b*) = 95% confidence interval of the regression coefficient; LL = lower limit of confidence interval; UL = upper limit of confidence interval; sr^2 = semi partial *r* squared. Each model reported is the final block in a hierarchical multiple regression, and "Interaction" refers to the interaction term computed by multiplying the specific standardized adversity

operationalization in the particular model by the mean-centered empathic self-efficacy manipulation.

Appendix P
Results Figures

Figure 3

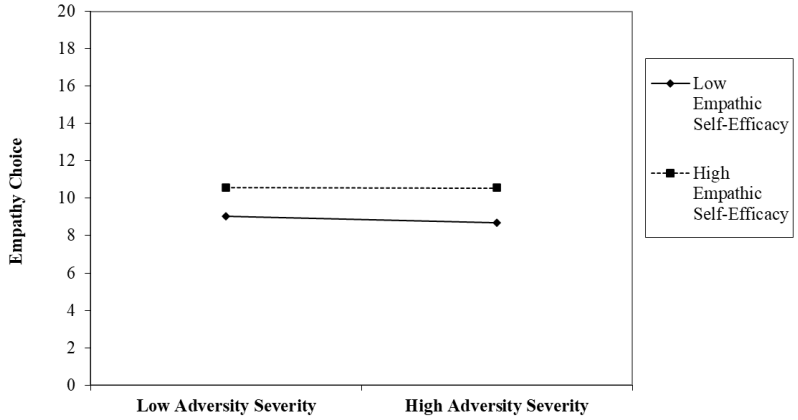
Square Root-Transformed Adversity Severity (Event) by Empathic Self-Efficacy Condition Interaction Effect on Empathy Choice



Note. The interaction effect between square root-transformed adversity severity (event) and empathic self-efficacy condition on empathy choice was not significant, $b = 0.33$, $SE(b) = 0.60$, $t(177) = 0.56$, $p = .576$, 95% CI(b) [−0.84, 1.51], s$r^2 = 0.00$.

Figure 4

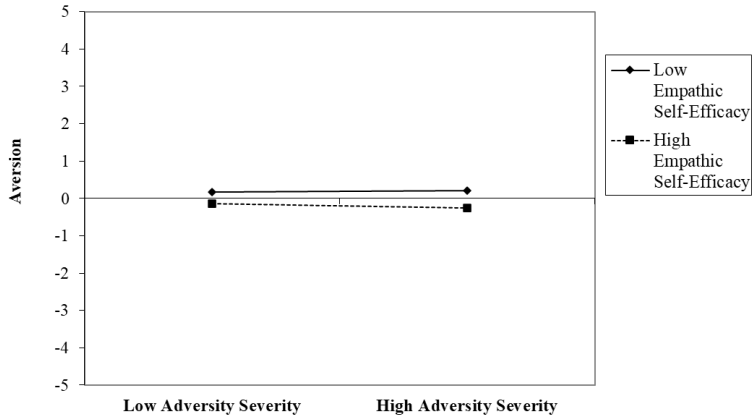
Log-Transformed Adversity Severity (Now) by Empathic Self-Efficacy Condition Interaction Effect on Empathy Choice



Note. The interaction effect between log-transformed adversity severity (now) and empathic self-efficacy condition on empathy choice was not significant $b = 0.18$, $SE = 0.60$. $t(177) = 0.30$, $p = .766$, 95% CI [−1.00, 1.36], $sr^2 = 0.00$.

Figure 5

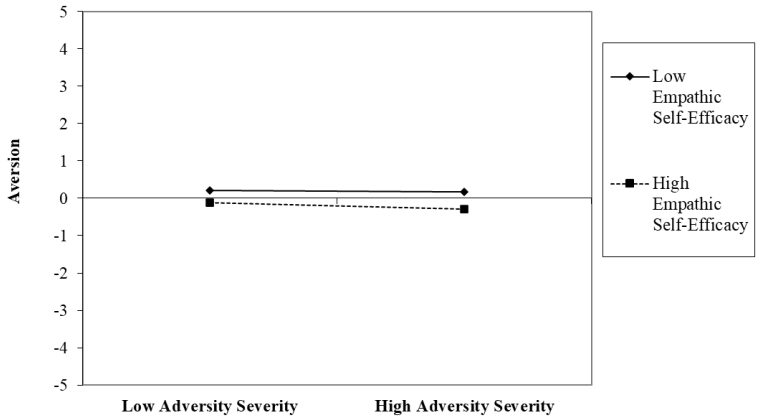
Square Root-Transformed Adversity Severity (Event) by Empathic Self-Efficacy Condition Interaction Effect on Aversion



Note. The interaction effect between square root-transformed adversity severity (event) and empathic self-efficacy condition on aversion was not significant $b = -0.08$, $SE(b) = 0.15$, $t(166) = -0.54$, $p = .591$, 95% CI(b) [-0.38, 0.22], $sr^2 = 0.00$.

Figure 6

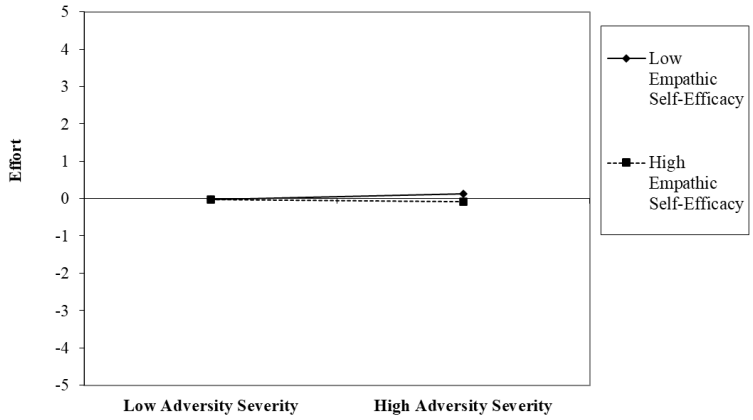
Log-Transformed Adversity Severity (Now) by Empathic Self-Efficacy Condition Interaction Effect on Aversion



Note. The interaction effect between log-transformed adversity severity (now) and empathic self-efficacy condition on aversion was not significant $b = -0.06$, $SE(b) = 0.15$, $t(166) = -0.41$, $p = .685$, 95% CI(b) [−0.36, 0.24], s$r^2 = 0.00$.

Figure 7

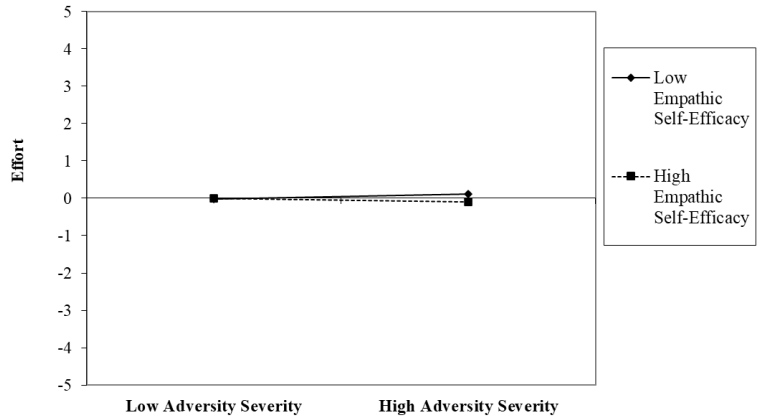
Square Root-Transformed Adversity Severity (Event) by Empathic Self-Efficacy Condition Interaction Effect on Effort



Note. The interaction effect between square root-transformed adversity severity (event) and empathic self-efficacy condition on effort was not significant $b = -0.12$, $SE(b) = 0.15$, $t(175) = -0.78$, $p = .438$, 95% CI(b) [−0.42, 0.18], s$r^2 = 0.00$.

Figure 8

Log-Transformed Adversity Severity (Now) by Empathic Self-Efficacy Condition Interaction Effect on Effort



Note. The interaction effect between log-transformed adversity severity (now) and empathic self-efficacy condition on effort was not significant $b = -0.11$, $SE(b) = 0.15$, $t(175) = -0.73$, $p = .468$, 95% CI(b) [−0.41, 0.19], s$r^2 = 0.00$.