UNIVERSITY OF CALIFORNIA
RIVERSIDE

Experience of Adversity and Engagement in Prosocial Behavior

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Psychology

by

Jasenka Lilium

August 2016

Dissertation Committee:
Dr. Howard Friedman, Co-Chairperson
Dr. Roxane Cohen Silver, Co-Chairperson
Dr. Kate Sweeny

The Dissertation of Jasenka Lilium is approved:

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Committee Co-Chairperson

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Committee Co-Chairperson

University of California, Riverside

ACKNOWLEDGEMENTS

A thank you cannot capture the amount of gratitude I have for the friends and mentors who brought me here. Though I am unable to mention them all by name in these pages, I hope I have succeeded in showing my gratitude in other ways. I could write books about the depths of kindness I've been shown, so I hope this bit of inadequacy that follows can reveal at least the tip of the iceberg.

Ana and Tiffany, you kept me whole, sometimes individually, sometimes with your formidable powers combined. Tiffany, thank you for your eye opening wisdom. Ana, thank you for your contagious perseverance and constant support. Nick and Christina, some people might say our incessant advice seeking and sharing is a crutch, but to those people I say... actually, I'm not sure... what do you guys think I should say to them? Christina thank you for giving me insight. Nick, thank you for giving me pie.

Igore, thank you for being such a loving brother and for inspiring my research by your example. Elliott, as my thank you for all of the support and advice you've given me across the years, I'll never tell anyone you set all those orphanage fires. Z, thank you for every beer infused stats lesson and every scream infused grading session. Jarvis, thank you for being my sanctuary. No, you shut up.

Faye, after the first time, I was never there for candy. Bruna, your care packages and Skype sessions kept my joy alive. David, you inspired and supported and escalated overshares. Andy and Rebecca, you set my true North(west). Mama i Tata, hvala vam na podržavanju, a i na suzdržavanju. Thank you all for what you have given me.

Thank you also to my lab-mates, past and present, at UCI and UCR, as well as to my cohort and the incredible community of students that pushed forward together with never-ending support and assistance. In particular to Leslie, for reaching out and being an incredible role-model, and Diet for sharing in the highs and lows. I am also grateful to the grad-success team for supporting this project and the crazy hours it required, and to the UCR Dissertation Research Grant for the financial support they provided.

Finally, I am happy to wholeheartedly acknowledge my co-advisors and dissertation co-chairs Dr. Howard Friedman and Dr. Roxane Cohen Silver, as well as my constant committee member Dr. Kate Sweeny. Kate, thank you for being with me through every grad school milestone as a supportive and caring surrogate advisor. Howard and Roxy, though I'll never manage to figure out where your confidence in me came from, I will always be grateful it never waned. You so generously and freely gave of your time to help me succeed. Howard, from the day we met, you went out of your way to make sure I stayed the path whenever obstacles threatened to throw me from it. Roxy, the way you lead by example, embodying research dedication and integrity, has been a constant inspiration to keep me moving forward. Thank you both for your persistent support and understanding.

Thank you all for sharing in my successes and for being there to help me whenever I stumbled. Thank you all for making me a better person, a better scholar, and a better friend. I am grateful for every moment of precious time that you gave me. I hope I made it worthwhile.

DEDICATION

When I was 16 years old and wondering what I should study in college, my high-school mentor (and later my friend), Jennifer Haran Wilbur told me with confidence: Psychology. This dissertation is dedicated to her, and because of her to all of my friends and mentors.

Jen, I wish you could see this.

ABSTRACT OF THE DISSERTATION

Experience of Adversity and Engagement in Prosocial Behavior

by

Jasenka Lilium

Doctor of Philosophy, Graduate Program in Psychology
University of California, Riverside, August 2016
Dr. Howard Friedman, Co-Chairperson
Dr. Roxane Cohen Silver, Co-Chairperson

Though adverse life events are most often studied in their relation to negative outcomes, experiencing adversity has also been related to a number of positive outcomes such as post traumatic growth, resilience, and altruistic and prosocial behavior. The current study examined the relationship between prior adverse life experience and engagement in several types of prosocial behavior, and explored the related concepts of empathy, trust, reasons for emergency helping, and steps to emergency helping. The primary goal of the study was to investigate the previously unexplored relationship between prior experience of adverse life events and subsequent engagement in emergency helping (bystander intervention). The study used a mixed quasi-experimental and survey design with a diverse sample of undergraduate students ($N = 161$). Using a modified "lady in distress" paradigm for emergency helping, the findings demonstrated that recent experience of adversity is positively related to subsequent engagement in emergency helping behavior.

Prior findings from a nationally representative sample of the positive relationship between experiencing adversity and engaging in prosocial behavior were confirmed with regard to organizational but not interpersonal helping in the current sample. Empathy was found to be negatively related to emergency helping, and positively related to organizational helping, while trust was found to be positively related to interpersonal helping only. In examining the relationship between the emotional impact of adverse experience and engagement in helping behavior, the findings demonstrated that emotional impact was related to organizational helping only and that this relationship was positive. There were differences in relevant outcomes related to types of adversity experienced as well as primary reasons selected for engaging in emergency helping. Additional findings showed there is complexity in personal perceptions of steps to helping. These findings confirm and expand on the relationship between adversity and prosocial behavior, and suggest there are multiple and varied pathways from adversity to prosocial engagement.

Keywords: adversity, trauma, helping, prosocial behavior, emergency, bystander.

Table of Contents

List of Tables

List of Figures

List of Appendices

Chapter 1

Experience of Adversity and Engagement in Prosocial Behavior

On June 8th, 1972 Nick Ut, a photographer for the Associated Press, took a Pulitzer prize winning photograph called “The Terror of War”. The photograph shows children running in horror down a road, most notable among them a young naked girl, screaming in pain, her clothes burned off of her body by Napalm. It is impossible to know the full impact this photograph has had on the world as it incited conversations about the unintended victims of war violence. We do know how this encounter affected Kim Phuc, the girl in the photo; the photographer saved Kim’s life. Seeing her pain, Nick Ut put down his camera, took her and the other children to the hospital in his car, and threatened with his press pass until the doctors began to treat her (Harris, 2015). Only then did he leave to print the photos whose impact would ripple across the world.

Kim grew up to start The Kim Foundation International, an organization dedicated to helping child victims of war. She took the most horrific, traumatic experience of her life and used it to help others. Nick Ut had done the same. His beloved brother, an AP war photographer, was killed by a Viet Cong bullet when Nick was only 14 years old. At 15 years old, Nick had secured a job as a war photographer with the AP himself (Harris, 2015). That is how he would help others.

Stories of individuals who experienced adverse life events and then dedicated themselves to helping others abound. Elie Wiesel survived the Holocaust and became a lifelong voice for victims of oppression. Malala Yousafzai survived a bullet to the head

and became a human rights and women's education advocate. Unlike these notable exemplars, most acts of help, advocacy, and kindness that occur on a daily bases do not earn a Nobel Peace Prize. The personal histories of anonymous everyday helpers are rarely brought to the forefront. Yet, the relationship between adversity and prosocial engagement suggested by these examples may occur in everyday prosocial interactions between individuals. Those who have experienced potentially traumatic life events may be more motivated to engage in various helping and prosocial behaviors in their daily lives. Understanding such a relationship could be an important step to understanding how we can best help people who have experienced adversity engage in behaviors that may be most beneficial for their recovery and their community.

Adverse Life Experiences

Adverse life experiences are very common. Depending in part on definitional guidelines for events that are considered traumatic, estimates for an adult experiencing at least one profoundly sad, stressful, or traumatic event in his or her lifetime vary in American samples from 50% (Ozer, Best, Lipsey, & Weiss, 2003) to 92% (Seery, Holman, & Silver, 2010). Some adverse events are more common than others, with bereavement caused by the death of a close friend or relative being the most likely event an adult will experience in his or her lifetime (40% according to Seery et al., 2010). The impact of such events differs across individuals based on their personal characteristics and prior life experiences. A car accident can leave one individual unperturbed, not considering the event as traumatic or emotionally impactful, while another individual in

the same situation could experience terror, nightmares, and disruption to daily tasks.

Researchers who study the impact of adverse and traumatic events use a variety of terms to refer to such events. Rather than defining trauma using any of the Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnoses (which focus on clinical implications for psychopathology and change as the DSM evolves), or differentiating between traumatic and adverse events, I will use the terms "adverse life events/ experiences" and "potentially traumatic life events/experiences" to represent events that have the potential to cause traumatic emotional impact.

Individuals who experience distressing and potentially traumatizing events in their lives may experience a range of consequences, which may depend in part on circumstances surrounding the event. While the death of loved one is likely to cause a negative emotional reaction, witnessing a death after a prolonged illness may evoke grief in combination with relief, while an unexpected death due to random gunfire could evoke grief, shock, and disbelief and be severely traumatizing. Due to the complexity inherent in subjective life experiences, it is no surprise that the outcomes of adverse life experiences are multiple and varied. As perceptions of life events can lead to multiple interpretations of the event and its impact, they can also lead to different actions and behaviors in response to each event.

Negative outcomes of trauma and adversity. The majority of research on the experience of adverse life events has been focused on negative outcomes. On the individual level these include consequences such as depression, anxiety, posttraumatic

stress or substance abuse (Edwards, Holden, Felitti, & Anda, 2003; Golding, 1999; Turner & Lloyd, 1995). These consequences can transfer into interpersonal relationships, causing family conflict or withdrawal from the community. Additional consequences on the societal level, such as aggression, violence and delinquency (Dodge, Bates, & Petit, 1990; Widom, 1989), can also occur. However, important research on adversity has focused on positive pathways as well. Bonanno (2004) challenged the belief that negative outcomes of trauma are inevitable, suggesting there are "multiple and sometimes unexpected pathways to resilience" (p. 25). In fact, research shows that a majority of individuals exposed to trauma do not develop pathological symptoms. In a meta-analytic study of the predictors of post traumatic stress disorder (PTSD), researchers noted that only 5% to 10% of the US population develops PTSD, though roughly 50% to 60% are exposed to Criterion A[1] events as defined by the DSM-IV (Ozer et al., 2003).

Positive outcomes of trauma and adversity. Evidence suggests that positive outcomes such as posttraumatic growth and resilience can indeed stem from negative experience. *Posttraumatic growth* is the experience of positive psychological change occurring after, and in response to, a challenging negative life event. It manifests in a variety of ways, generally pertaining to the individual's perception of how meaningful his or her life and relationships are, leading to an increased appreciation of life's offerings (Tedeschi & Calhoun, 2004). For example, cancer survivors report an improved ability to

[1] Criterion A events are defined in the DSM-IV (4th ed.; American Psychiatric Association, 1994) as traumatic events during which a person must have "experienced, witnessed, or been confronted with an event that involves actual or threatened death or injury, or a threat to the physical integrity of self or others" (p. 467, Criterion A1), to which the person must have an emotional response involving "intense fear, helplessness, or horror" (p. 467, Criterion A2).

relate to others, a stronger focus on that which is important and meaningful, and a deeper gratitude for their lives (Cordova, Cunningham, Carlson & Andrykowski, 2001). *Resilience* is defined as successful adaptation following exposure to stressful or potentially traumatizing events, and it involves both the ability to maintain psychological health and the ability to rebound after exposure to trauma (Silver, 2009). Seery et al. (2010) found that individuals who had a history of moderate lifetime adversity reported better mental health and wellbeing outcomes than did individuals with an extensive history of lifetime adversity, or individuals with no history of lifetime adversity. Individuals with moderate prior lifetime adversity were also the least affected by recent adverse events. These results suggest that resilience can indeed stem from prior exposure to adverse events and can consequently serve as a buffer against negative outcomes in case of future adversity.

Both of these examples demonstrate personal benefits arising from negative life events, but community benefits can arise in a similar way. Following research on post traumatic growth and resilience, Staub (2003) proposed the concept of "altruism born of suffering" to describe the findings demonstrating how individuals who have suffered due to adversity, may be particularly motivated to act in a prosocial way. Prosocial behavior as an outcome of adversity could be beneficial to the community as well as to the individual. However, before addressing research on the connection between prosocial behavior and adversity, it is important to establish what is considered prosocial behavior.

Defining Prosocial Behavior and Helping

"Prosocial behavior" is a broad term with the potential to encompass a virtually unlimited number of actions an individual may enact in order to benefit another. Piliavin, Dovidio, Gaertner and Clark (1981) state these are actions that are "defined by society as generally beneficial to other people and the ongoing social system" (p. 4), suggesting that a behavior is not inherently prosocial or antisocial, but defined by the context in which it occurs ("defined by society"). As the defining characteristic of prosocial behavior cannot be the act itself, the outcome of the action also seems a poor choice for defining a behavior. Thus, I believe the intent of the actor may be the most appropriate way to conceptualize prosocial behavior. By this definition, prosocial behavior is any act committed with the specific intent of helping an individual or a group.

There are numerous possible subdivisions of prosocial behavior. Dovidio, Piliavin Schroeder and Penner (2006) subdivide prosocial behavior into helping, altruism, and cooperation. They define helping as an action that provides benefit for another, while stating altruism involves additional consideration of inner motivations of the actor (whether the action is selflessly or selfishly motivated), and cooperation involves interaction between actors toward a common goal. The focus of this dissertation is closest in scope to *helping,* as defined by Dovidio et al. (2006), with one notable difference: I consider helping a prosocial behavior regardless of whether the action taken to help was successful. Therefore, for the purposes of this thesis, "prosocial behavior" will remain a broad all-encompassing term as it was used by Pilliavin et al. (1981), while "helping"

will be defined as any action done with the intent of benefiting another person or group, regardless of outcome, and regardless of whether the action was selfishly or selflessly motivated.

Subcategories of helping. Within the broad definition of helping, this research will examine three subcategories of helping: Interpersonal helping, Organizational helping, and Emergency helping (bystander intervention).

Interpersonal helping occurs between individuals, where a helper addresses a need on a one-on-one basis. Examples of interpersonal helping include helping a friend move, helping a classmate complete an assignment, or getting groceries for a sick neighbor. Most often interpersonal helping is unplanned, is done individually, and can occur between strangers, friends, and family.

In organizational helping, a helper addresses an individual or group need within a structured, organized context. Examples of organizational helping include volunteering in soup kitchens, organizing to clean up a park, or volunteering with non profit organizations. Organizational helping is most often planned, done in groups, and the help is aimed at strangers.

Some types of helping have unique qualities that make them difficult to group within the above categories. For example, though most often done individually, donations tend to go through organizations and range from goods and money to blood and organs. As such, they may be considered a separate category of prosocial behavior. Another type of helping that is quite unique in practice is emergency helping, or bystander intervention.

Though this type of helping could arguably fit under the broad category of interpersonal helping, in emergency helping, a helper addresses an urgent need as soon as that need arises. The most famous examples of emergency helping deal with bystander intervention, and come from a series of experiments by Latané and Darley (1976). Examples include witnessing and reacting to an urgent incident such as hearing a person injure herself through a fall, hearing someone have a seizure, or seeing an individual get electrocuted. This type of helping is always unplanned, can be done individually or with others, and can occur between strangers, friends, and family.

Prior Research on Adversity and Prosocial Behavior

Though research focused on prosocial engagement stemming from traumatic experience is currently in the nascent stage, there have been a number of important examples of this relationship, most notably in literature on the survivors of war and genocide. In a study of Holocaust survivors, researchers found that 82% of their sample reported engaging in prosocial behavior, such as sharing limited food supplies with another victim (Kahana, Kahana, Harel, & Segal, 1986). A study with child survivors of the war in Croatia found that children exposed to war-related violence scored higher on observational measures of prosocial behavior when compared to a control group (Raboteg-Saric, Zuzul, & Kesteres, 1994). In another study, children directly exposed to war-related violence in Lebanon scored higher on a measure of prosocial behavior than children who had not been directly exposed to the violence (Macksoud & Aber, 1996).

In the U.S., researchers conducted a nationwide study examining the effect on volunteering of the 9/11 attacks (Penner, Brannick, Webb, & Connel, 2005). Prior to this study, researchers using nationally representative data demonstrated that the traumatic impact of the 9/11 attacks extended across the United States and was not limited to directly exposed communities (Schuster et al., 2001; Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002; Silver et al., 2004). Penner et al. (2005) used data from a national, web based, volunteering organization to examine the patterns of volunteering prior to and after the September 11th attacks on the U.S. The results showed a significant increase in the number of people across the United States offering to volunteer after the 9/11 attacks. The increase was significant for various types of organizations and not exclusive to crisis-related organizations.

In a follow-up on the concept of adversity born of suffering, Vollhardt and Staub (2011) demonstrated that individuals who had experienced adverse life events were more likely to volunteer, and for more organizations, than individuals who had not experienced adversity. In an unpublished study looking at a nationally representative sample of the American population, prior experience of adversity was predictive of engagement in interpersonal and organizational helping (Turkusic, Poulin, Friedman, & Silver, 2012). In particular, individuals who had experienced recent adversity engaged in more prosocial behavior than those who had not experienced recent adversity. These relationships proved to be linear and influenced by the timing of adverse experience, such that lifetime and recent adversity predicted interpersonal helping, while only recent adversity predicted

organizational helping. Similar findings were reported by other researchers working with a sample of undergraduate students (Frazier et al., 2013). Those students who had experienced more lifetime traumas engaged in more prosocial behavior, and those who had experienced a recent trauma reported engaging in more daily helping behavior than a matched no-trauma comparison group. Additionally, the researchers found that among recent trauma survivors, engaging in prosocial behavior was associated with greater well-being.

Though many of the studies cited above address interpersonal and organizational helping by individuals who have experienced adversity, there has been no study to date directly addressing emergency helping. There are, however, studies in the literature on emergency helping that report finding a history of adversity in the helpers during data analysis. For example, in a study of bystander intervention in naturally occurring episodes of crime, researchers found that the interveners in crime have more often been victims of crime than a matched comparison group (Huston, Ruggiero, Conner, & Geis, 1981). In a study of bystander responses to public episodes of child abuse, researchers found that direct interveners were more often themselves abused as children (Christy & Voigt, 1994). The current study includes a key focus on emergency helping.

Theories of helping in the aftermath of adversity. Why might people who have experienced adversity engage in prosocial behavior? When it comes to emergency helping, it may be that personal experience leads to faster recognition of need. This may be why researchers find more emergency-related experience in helpers as demonstrated in

the Huston et al. (1981) and Christy and Voigt (1994) studies. In general, theories explaining motivation for prosocial behavior, such as indirect reciprocity (Berkowitz & Daniels, 1964), negative state relief (Cialdini & Kenrick, 1976), empathic altruism (Batson, Duncan, Ackerman, & Birch, 1981), or similarity and group identity (Levine, Prosser, Evans, & Reicher, 2005) may be particularly applicable in the case of adversity-motivated prosocial behavior. Individuals who have previously experienced adversity may be more susceptible to the pull of indirect reciprocity, either to "pay forward" the help they received, or to ensure they receive help when they need it again in the future. The negative state caused by witnessing a person in need may be intensified for those individuals who themselves experienced an adverse life event, and were in need of help. Posttraumatic growth may be another path to increased empathy and perspective-taking. Tedeschi (1999) suggested that survivors of traumatic experience might, in recognizing their own vulnerability, expand their empathy, thus providing them with a motive to help others in need. Individuals who have experienced adversity may find more similarity or group identity with others who are experiencing adversity, leading to more helping behavior.

Aside from general theories of helping, there may be reasons for helping that are specifically caused by the experience of adversity. For example, Janoff-Bulman (1992) proposed that individuals hold fundamental assumptions about the world: a) that the world is benevolent, b) that the world is meaningful, and c) that the self is worthy. She further proposed that extremely adverse, traumatic life events challenge an individual's

fundamental assumptions. In order to return to a state of equilibrium, the individual must change his or her worldview or reinterpret the adverse event. In some cases, Janoff-Bulman states, individuals transform the victimization into benefits for self and others. Thus it is possible that individuals who have suffered become additionally motivated to restore their cognitive equilibrium by ensuring positive events through prosocial behavior. Another finding in the Macksoud and Aber (1996) study of Lebanese's children may serve as an example of this process: those children who suffered the most also condemned injustice and committed to helping others in need.

Vollhardt (2009) presented a comprehensive motivational process model integrating many of the previously mentioned theories. She proposed that different types of adverse events may motivate different forms of prosocial outcomes depending both on the types of motivational processes engaged in arousing prosocial action and how those processes are affected by various volitional factors. Thus, different types of adverse experiences may lead -- through different motivational pathways -- to different types of helping, leading to great complexity. Due to this complexity, it is important to address potential correlates of helping in the aftermath of adversity. Based on prior research the dispositional traits of empathy and trust may be particularly relevant in this relationship.

Empathy has been studied in relation to helping for decades and has been shown to be related to a variety of helping behaviors including donations, interpersonal, and organizational helping (for a detailed meta analysis, see Eisenberg & Miller, 1987). Researchers have also studied empathy in the relationship between adversity and helping

(Lim & DeSteno, 2015) and found that high severity of past adversity positively predicts empathy and is related to compassion for others in need. Though no research to date has addressed trust in the relationship between adversity and helping, trust is considered one of the strongest positive predictors of prosocial behavior in the literature on social dilemmas and cooperation (Irwin, 2009), as well as being negatively related to the experience of many types of adversity (Ratcliffe, Ruddell, & Smith, 2014). Thus general trust may be an important trait to study in the relationship between adversity and helping.

The Current Study

The first goal of this study is to investigate the relationship between prior experience of adverse life events and subsequent engagement in helping behavior in an apparent emergency. In order to explore some of the complexities inherent in research on subjective life experiences, the emotional impact of adversity at the time it occurred and its current emotional impact will also be tested as predictors of prosocial behavior.

The second goal of this study is to test whether prior findings about the relationship between the experience of adversity and engagement in interpersonal and organizational prosocial behavior (Turkusic et al., 2012) can be replicated in a sample of undergraduate students. As young adults who are finding their identity, and whose adversity is by virtue of age fairly recent, undergraduate students may provide unique information about the relationships of interest. The emotional impact of adversity will additionally be assessed in this population.

The third goal of the study is to address the potential impact of empathy and trust in the relationship between adversity and prosocial behavior. For this reason empathy and trust will be included in all analyses assessing the relationship between adversity and helping. Race and sex of the participant will be used as control variables. Though prior research has demonstrated race and sex differences in helping behavior, each can be thought of as a "carrier variable" (Dovidio et al. 2006, p. 215), reflecting differences subsumed within, rather than caused by the variable. Though men and women may differ in how and when they help (men have been more likely to engage in emergency helping, while women have been more likely to engage in organizational or interpersonal helping), these differences are due to sex related concepts such as size, experience, gender roles and related variables (see Becker & Eagly, 2004, for a detailed overview).

The fourth and final goal of this research is to address several exploratory questions about categories of adverse events, motivational reasons for helping, and steps to helping. The first exploratory question will address potential differences between 6 categories of adverse events: injury or illness, violence, bereavement, social environmental stress, relationship events, and community disasters (Blum, Silver, & Poulin, 2014). These categories have been differentially predictive of relevant constructs in prior research. For example, Blum et al. (2014) found that experiencing different types of events was differentially predictive of subsequent risk perception; in particular, experiencing violent events was was related to the greatest amount of risk perceived. Turkusic et al. (2012) found that lifetime experience of community disaster was most

associated with interpersonal helping, while recent experience of bereavement or violence were most predictive of organizational helping.

As categories of adversity will be explored in relation to the event selected as the most traumatic event experienced by the participant, additional concepts related to worst event experienced will also be addressed. “Centrality of Event”, a measure of how integrated the event is to the individuals life story (Berntsen & Rubin, 2006), as well the extent to which participants felt helped and supported by their community during the event, will be explored. These exploratory analyses with the categories of adversity may serve to inform future research on how different types of trauma may differentially predict various outcomes.

The second exploratory question will address the reasons why individuals engage in emergency helping. Based on relevant theory, 5 options were selected as most likely to be influential in the case of helping in the aftermath of adversity: indirect reciprocity, negative state relief, empathy, similarity/group identity, and world views/restoring equilibrium. These exploratory analyses may serve to inform future research on different pathways to helping.

The third exploratory question will address how individuals perceive their steps to emergency helping. Latané and Darley (1970) extensively researched what aids and impedes emergency helping, leading them to propose 5 steps that an individual must go through in order to engage in a helping action. In order to help, an individual must 1) notice the event 2) interpret it as requiring action, 3) take responsibility for acting, 4)

decide how to act, and 5) implement the action. At any of the steps the path to helping can be interrupted, and the analyses will explore when this interruption most commonly occurs. Though the steps to helping are not necessarily related to experience of adversity, this is an exploratory question that can be examined in the larger context of the study, and may be informative for future study design.

The fourth and final exploratory question will address potential differences in event-related commentary based on levels of emergency helping.

Hypotheses. With the first three goals in mind, I have formulated the following 9 hypotheses around the three primary dependent variables of Emergency Helping (H1:H3), Interpersonal Helping (H4:H6), and Organizational Helping (H7:H9). Three hypotheses deal with the effect of Recent (within the last year) and Lifetime Adversity Experienced (H1, H3, and H7) on each of the primary dependent variables. Three hypotheses deal with the effect of the Emotional Impact at the Time of Adversity on the each of the primary dependent variables (H2, H4, and H8). Three hypotheses deal with the effect of Current Emotional Impact of Adversity on each of the primary dependent variables (H3, H5, and H9). Additionally, demographics will be controlled for, and empathy and trust will be evaluated in each of the nine hypotheses.

H1. Experiencing adversity, both across one's lifetime and recently, will be predictive of emergency helping (bystander intervention), while accounting for demographics, empathy, and trust, such that more adversity will lead to more helping.

H2. The emotional impact of adversity at the time of the event (how emotionally impactful the event was when it occurred) will be predictive of emergency helping (bystander intervention), while accounting for demographics, empathy, and trust, such that higher emotional impact will lead to more helping.

H3. The current emotional impact of adversity (how emotionally impactful the event is at this time) will be predictive of emergency helping (bystander intervention), while accounting for demographics, empathy, and trust, such that higher emotional impact will lead to more helping.

H4. Experiencing adversity, both across one's lifetime and recently, will be predictive of interpersonal helping, while accounting for demographics, empathy, and trust, such that more adversity will lead to more helping.

H5. The emotional impact of adversity at the time of the event will be predictive of interpersonal helping, while accounting for demographics, empathy, and trust, such that higher emotional impact will lead to more helping.

H6. The current emotional impact of adversity will be predictive of interpersonal helping, while accounting for demographics, empathy, and trust, such that higher emotional impact will lead to more helping.

H7. Recent adversity will be predictive of organizational helping, while accounting for demographics, empathy, trust, and lifetime adversity, such that more recent adversity will lead to more helping.

H8. The emotional impact of adversity at the time of the event will be predictive of organizational helping, while accounting for demographics, empathy, and trust, such that higher emotional impact will lead to more helping.

H9. The current emotional impact of adversity will be predictive of organizational helping, while accounting for demographics, empathy, and trust, such that higher emotional impact will lead to more helping.

Additional research questions. With the fourth goal in mind, I have formulated 4 additional research questions (ARQ's) addressing descriptive and exploratory analyses:

ARQ1. How will the 6 categories of adversity relate to variables of interest ?

ARQ2. What are the trends related to self selected reasons for emergency helping?

ARQ3. What are the trends related to steps to helping?

ARQ4. What are the differences, if any, in participant open response comments about the emergency situation?

Design overview. With a diverse sample of undergraduate students, the current study used a staged accident in a mixed quasi-experimental and survey design, in order to explore the role of adverse experience, empathy, and trust, on helping in an emergency situation. Additionally the study explored the role of adverse experience, empathy, and trust, on self reported interpersonal, and organizational helping. Finally the study addressed several research questions related to experience of adversity, motivation for helping, and steps to helping.

Chapter 2

Methods

The participants in this study believed they were taking a survey about the impact of life experiences and personal views on color perception. As the participants were sitting at a computer and completing the color perception task, an apparent emergency occurred, and participant response was observed and coded in real time using a hidden live streaming camera (an inconspicuous baby monitor). The "emergency" was a modified version of the Latané and Rodin (1969) "lady in distress" paradigm, and it consisted of the apparent fall and injury of the female experimenter, heard but unseen in a neighboring room. After the apparent emergency, regardless of participant response, the participants were reassured that the experimenter was unharmed, instructed to finish the color perception task, and fill out the remaining surveys.

The questionnaire surveys consisted of the adverse events checklist and a number of questionnaires addressing empathy, trust, and prosocial engagement, as well as additional questionnaires used to support the cover story (color questionnaires and questions assessing positive events and personal views) . Once the participants finished filling out the surveys, they were partially debriefed about the apparent emergency. Following the partial debriefing, participants were asked to fill out a final set of questionnaires addressing their reasoning for engaging or not engaging in helping behavior during the apparent emergency. The participants were then fully debriefed.

Participants

A total of 168 undergraduate students from the University of California, Riverside, provided data for the study. Due to reasons that are discussed in detail in the results section, 7 participants were ultimately dropped from the study, resulting in a final sample of 161 participants. The students were recruited for research through the Psychology Department's subject pool and compensated for their participation by receiving a portion of required course credit for their introductory Psychology courses.

Procedure

The participant waited in the hallway in front of the study rooms until the experimenter opened the door and invited the participant to enter. The experimenter led the participant into a hallway that led into three separate rooms (room A to the immediate left, room B further down the hall to the left, and room C straight ahead). The experimenter walked the participant to room B, which was filled with boxes (see Appendix A for the participant's view of room B), and grabbed her folder and keys from this room while letting the participant know he or she would be in room C.

When they entered room C, the experimenter requested that the participant ensure his or her phone was on silent, and then placed all of the participant's personal belongings and phone into a locked cabinet in the room. The participant was then instructed to sit at a personal desk with a Chromebook laptop computer set up to show the online study start page. The experimenter read aloud the informed consent with a cover story about color perception research in order to ensure participants understood why this study was to be

completed in lab (*"Because colors appear different on different computer screens, we have to run this study in lab, only using computers with the assigned screen settings. It is very important to leave the settings as they are."*). The experimenter informed the participant she would be next door doing some work, but that she would return to check in on the participant in a little while, and instructed the participant to begin the color task.

The color task required the participant to look at a color for 10 seconds. After 10 seconds a button would appear allowing participants to advance to the response options. After the participants made their response selection, they would click to advance to the next color. This process repeated 20 times. For an example of the color task, see Appendix B.

Once the participant started the color task, the experimenter left room C and entered room B, closed the door behind her and started a 1 minute timer. During that minute the experimenter created moving noises by moving boxes and books in the room, and setting up the accident. The accident set up involved positioning two boxes filled with print journals on top of an open door to a metal closet. At 1 minute after entering the room, the experimenter tipped a metal chair into the closet causing the books to fall, and screamed once at the same time. The accident was followed by complete silence. During the accident, the experimenter observed participant behavior in real time on a 4 inch screen of a concealed baby monitor video receiver, and timed helping behaviors using a stopwatch.

If the participant came to the door and called out, knocked, or tried the doorknob, the experimenter responded, came out of the room and reassured the participant immediately by stating "*I'm ok, I just had some boxes fall, and startle me."* If the participant called out once from the room, the experimenter waited to see whether other action would be taken for at least 30 seconds and up to 1 minute from the start of the accident, before heading out and reassuring the participant. If the participant called out twice, the experimenter responded and came out of the room to reassure the participant. If the participant did nothing, the experimenter waited 1 minute before heading out and reassuring the participant.

After exiting the room in case of no response, the experimenter would say "*I'm sorry about that*, *I just had some boxes fall*," pause for response, then follow up with "*I'm going to stop doing that and just leave the door open. When the survey says to call for me you can just call out and I'll come in.*" If the participant made any comments, they were noted. The experimenter would then enter room B, clean up the boxes and sit at her computer to enter all behavioral coding and timing information into the participant log. During this time the participant would finish the color task, and continue on to take a variety of surveys including demographics, prosocial behavior, adverse life events, empathy, and trust, as well as questionnaires included to support the cover story (color questionnaires) and to relieve any emotional burden potentially caused by questions about adversity (positive life events questions, happiness scale). The experimenter would

stay in room B until the participant completed this set of surveys and called the experimenter back into room C.

At this point the participant was partially debriefed and informed that the accident was staged. After the debriefing, the participant was instructed to complete a second set of surveys addressing steps to helping, and the participant's reflection on his or her helping behavior. Only those participants who helped answered questions related to theoretical reasons for helping. Finally, each participant was fully debriefed, and final informed consent was gathered.

Measures

Emergency helping. All response behaviors to the apparent emergency were noted, ranging from minimal response (ignoring the sound, looking up, looking around) to helping behavior (calling out, leaving the room, knocking on the door). This information was used to create the main dependent variable. Emergency helping was used in analyses as a continuous variable and coded: no help offered (1), called out once (2), did more than call out once (3). Noted behaviors were also used in data cleaning as comparisons with participant self-report (e.g., whether the participant clearly noticed the accident, the extent of the participant's physical reaction to the accident, whether the participant offered help).

Demographic information. The participants reported their gender, age, and ethno-racial identity.

Interpersonal and Organizational helping. Prior prosocial behavior was measured with two questions based on prior research. The first question assessed **interpersonal prosocial behavior** (*"In the past 12 months, about how much time per month, if any, have you spent helping friends, neighbors, or relatives (other than children) who did not pay you for the help?"*). The second question addressed **organizational prosocial behavior** (*"In the past 12 months, about how much time per month, if any, have you spent doing volunteer work for religious, educational, health-related or other charitable organizations?"*). The questions used the following scale: "*None*" (1) , "*1-8 hours per month (in other words: up to 2 hours a week)*" (2), "*8-16 hours per month (in other words: over 2 and/or up to 4 hours a week)*" (3), "*16-24 hours per month (in other words: over 4 and/or up to 6 hours a week)*" (4), "*More than 24 hours per month (in other words: over 6 hours a week)*" (5). Raw scores for each question were used in analyses.

Adverse life events questionnaire. This was a modified version of the scale used by Blum et al. (2014). The participants were asked to "*Please select each event that has happened to you during your lifetime*." and presented with a list of 37 events (e.g., "*Suffered a serious illness*", "*Death of your friend*", "*Had a miscarriage", "Experienced a tragedy or disaster in your community caused by people (a shooting, bombing, etc.").* The list included 2 options allowing for other events to be specified for a total of 39 possible events. For a complete list of events, see Appendix C. For each selected event,

participants answered additional questions used to create all of the adversity-related variables for analyses.

For information about event recency, participants were asked "*When did this event occur?(If the event occurred more than once, refer to the worst instance of the event.)*" and instructed to answer using a 5 point scale "*Within the last year*" (1), "*More than 1 but less than 3 years*" (2), "*More than 3 but less than 6 years*" (3), "*More than 6 but less than 10 years*" (4), "*More than 10 years*" (5).

In order to address the subjective nature of personal experiences, participants were also asked to report the emotional impact of the events. For information about emotional impact, participants were asked two questions: *"How much did this event affect you emotionally at that time?"* and *"How much does this event affect you emotionally now?"* They answered using a 5 point scale from "*Not at all*" (1) to "*Severely"* (5). Participants were additionally asked to "*Out of all the events you marked as having happened to you, please select the event you feel was the most stressful or traumatic event in your life.*".

The information provided was used to create 5 variables for analyses: recent adversity, lifetime adversity, emotional impact of adversity at the time of the event, current emotional impact of adversity, and worst event categories. For the creation of these variables, all events which received a score of 1 on both of the emotional impact questions were excluded from analyses under the assumption that an event that caused no emotional impact at the time of its occurrence, and which causes no emotional impact

currently, should not be considered an adverse life event. Only one participant reported that all of the events they experienced (2 events) were not impactful, while other participants reported both impactful and un-impactful events.

Recent adversity. The recent adversity variable was created as the sum of all emotionally impactful events that occurred within the last year.

Lifetime adversity. The lifetime adversity variable was created as the sum of all emotionally impactful events that had occurred more than one year ago.

Emotional impact at the time of the event. The emotional impact at the time of the event variable was created as the mean of all "emotional impact at the time of the event" scores.

Current emotional impact. The current emotional impact variable was created as the mean of all current emotional impact scores.

Self-selected most stressful or traumatic event categories. Based on the event participants selected as their most traumatic, they were assigned into one of 6 categories of adverse events appearing on the questionnaire (Blum et al., 2014): injury or illness, violence, bereavement, social environmental stress, relationship events, community disasters. For a detailed listing of events comprising these categories see Appendix D.

Helped and supported. Participants were asked "*During the event you selected as the most stressful or traumatic event in your life, to what extent did you feel helped and supported by your community?*" using a 5 point scale from "*Not at all*" (1) to "*Extremely"* (5). The raw score for the question was used in analyses.

Centrality of event. Participants completed a scale measuring how central their self-selected most stressful or traumatic event is to their identity and life story (Berntsen & Rubin, 2006). Individuals with high scores believe the event defines them as an individual and impacts their perception of self as well as their interpretation of their past and future life events. The brief version of the scale was used consisting of 7 items (e.g. "*I feel like this event has become part of my identity*", "*This event was a turning point in my life*"; Chronbach's α = .87) and scored using a scale from "*Strongly disagree*"(1) through "*Equally agree and disagree*" (3) to "*Strongly agree*" (5). The centrality of event variable was created as the mean of all responses.

Empathy. Participants completed a suffering sub-scale of the Caruso and Mayer (1998) "Measure of Emotional Empathy for Adolescents and Adults" consisting of 8 items ("*The suffering of others deeply disturbs me*", "*I feel good when I help someone out or do something nice for someone*"; Chronbach's α = .78). The scale was scored from "*Strongly disagree*"(1) through "*Equally agree and disagree*" (3) to "*Strongly agree*" (5). Once relevant questions were recoded, the empathic suffering variable was created as the mean of all responses, with higher scores reflecting higher empathy.

Trust. Participants were asked their level of agreement to 6 questions dealing with general trust (Siegrist, Gutscher, & Earle, 2005) such as "*Most people are too busy looking out for themselves to be helpful*" and "*Most people are basically honest*" (Chronbach's α = .73) using a scale from "*Strongly disagree*"(1) through "*Equally agree and disagree*" (3) to "*Strongly agree*" (5). Once relevant questions were

recoded, the general trust variable was created as the mean of all responses with higher scores reflecting higher trust.

Steps to helping. This questionnaire was created using Latané and Darley's (1970) 5 steps to helping. The questions referred to 1) noticing the event, 2) interpreting the event as requiring helping action, 3) assuming personal responsibility to provide help, 4) choosing a way to help, and 5) implementing the decision. Response options were "*Yes*" and "*No*" with specific clarifying elaborations as relevant to each question. For the complete questionnaire, see Appendix E. Starting with question 1, the participant was advanced to the next question only if they answered "Yes". If a participant answered "No" to any question, they were skipped forward to question 5. After answering question 5, all participants were invited to provide additional open-ended comments about the event with the prompt "*If you have any additional comments about the apparent accident, please provide them here*". Participants raw responses to this prompt were analyzed with word analysis software (Pennebaker, Booth, Boyd, & Francis, 2015).

Reasons for helping. Only those participants who responded "Yes" to question 5 of the "Steps to Helping" questionnaire ("*Did you offer or provide any assistance?*") were presented with this final questionnaire. Participants were first asked to describe their reasons for helping via open response. Next participants were presented with a series of statements each representing one of five potential reasons for helping: reciprocity (specifically indirect reciprocity), negative state relief, empathy/sympathy, similarity/ group identity, and world views (specifically restoring equilibrium). For all of the

statements, see Appendix F. The participants were first asked to "*Please select any of the following statements that you feel influenced your choice to offer assistance in this situation*" resulting in 5 dichotomous variables.

Next, the participants were asked to "*Please order the following statements from most influential to least influential in your decision to offer assistance (1 being most influential and 5 being least influential)*". During data analysis it became apparent that some participants reversed the ranking order of their items as they would rank as highly influential for the second question items they had not selected as influential at all for the first question. In an attempt to use the data to the greatest extent possible, a forced primary reason for helping variable was created by excluding any reason that was not selected in question 1, and selecting the remaining reason with the lowest number ranking (highest influence ranking).

Analytic strategy

Analysis software. Analyses were conducted using STATA 14 (Stata Corp, 2015), Hayes' (2013) SPSS PROCESS routine (release 2.16.1) in SPSS 24 (IBM, 2016), and LIWC2015 Linguistic Inquiry and Word Count software (Pennebaker, Booth et al., 2015).

Data cleaning. A total of 7 participants were dropped from the sample due to the following reasons: an inadequate mastery of the English language as noted by the experimenter and confirmed by writing prompt responses (3 participants), knowledge that the accident was staged as stated during the debriefing and noted in the deception prompt (3 participants), display of extremely non normative behavior (e.g. uncontrolled

vocalizing, fidgeting, whistling) as noted by the experimenter (1 participant). All remaining participants were retained in the sample (N = 161). Study variables did not substantially depart from normality (West, Finch, & Curran, 1995) and thus no transformations were conducted.

Analysis steps. For the 9 hypotheses, three regression models were tested for each of the three prosocial behavior outcome variables, resulting in nine total regressions. The regression analyses were conducted in STATA 14 using a hierarchical variable entry strategy. The first block of each regressions analysis consisted of the demographic control variables (gender and ethno-racial categories with "female" and "white" as the reference categories). The second block for each regression analysis consisted of the individual difference variables of interest (empathy and trust).

For Model 1, adverse life experience variables were added, with lifetime adversity on block 3, and recent adversity on block 4. However, the emotional impact at the time of adversity and current emotional impact of adversity variables could not be separated into lifetime and recent emotional impact due to sample size. As such, in Model 2 total emotional impact at the time of adversity was added on block 3, while in Model 3 total current emotional impact of adversity was added on block 3. Due to the absence of emotional impact data for 3 individuals who experienced no adversity N = 161 for model 1, while N = 158 for models 2 and 3. Post-hoc tests of moderation and mediation were conducted where relevant using PROCESS in SPSS24.

For ARQ1, one way ANOVAs were conducted to test mean differences in all variables of interest (emergency helping, interpersonal helping, organizational helping, empathy, trust, feeling helped supported during the worst event and centrality of the worst event) based on experiencing different categories of adversity as the self-selected worst event.

For ARQ2, Cochran's Q was conducted testing for differences in endorsement of reasons for helping. Additionally, using the forced primary reason for helping as a grouping variable, one way ANOVAs were conducted with all variables of interest (adversity, emotional impact, emergency helping, interpersonal helping, organizational helping, empathy, trust, feeling helped supported during the worst event and centrality of the worst event).

For ARQ3, steps to helping were reported in cross-tabs with emergency helping while ARQ4 used LIWC2015 to analyze open response comments about the accident. Participant scores from LIWC2015 were compared using one way ANOVAs with emergency helping as the grouping variable.

Chapter 3

Results

Sample Characteristics

The majority of the students were female (67.70%) and the average age was approximately 19 years old (M = 19.42, SD = 1.63). The sample reflected the ethno-racial composition of the university population which is primarily Hispanic/Latino and Asian ("About UCR: Facts", 2016). The sample was approximately 41% Hispanic/Latino, 32% Asian, 18% multi ethno-racial or other, and 9% White. The majority of the sample (77.64%) did not engage in any helping behavior in response to the apparent emergency. The remaining participants either called out once (8.70%) or took greater action by getting up, knocking on the door, or continuing to call out until they got a response (13.66%). For additional psychometric properties of the major study variables, see Table 1. For intercorrelations among study variables, see Table 2.

Emergency helping (H1, H2, H3)

In Model 1 (H1), recent adversity and empathy were predictive of emergency helping as hypothesized, though the impact of empathy was unexpectedly negative. Lifetime adversity and trust were not predictive of emergency helping. On block 1, gender was predictive of emergency helping with males helping more (β = 0.184, p = 0.019), but this relationship became nonsignificant with the introduction of trust and empathy. On block 2, empathy was negatively predictive of emergency helping

(β = -.181, p = 0.030), and remained significant on blocks 3 (β = -.179, p = 0.031) and 4 (β = -.174, p = 0.033). On block 4, recent adversity was positively predictive of emergency helping (β = .213, p = 0.006). This regression is presented in full in Table 3.

In Model 2 (H2), contrary to hypothesis, trust and emotional impact at the time of the event were not predictive of emergency helping. Only empathy predicted emergency helping in this model and the impact of empathy was negative. On block 1, gender was predictive of emergency helping with males helping more (β = .200, p = 0.012), but became nonsignificant with the introduction of trust and empathy. On block 2 empathy was a marginally significant negative predictor controlling for demographics (β = -.163, p = 0.052), but it became a stronger predictor at block 3 (β = -.177, p = 0.036), with emotional impact at the time of the event in the model. This regression is presented in full in Table 4.

In Model 3 (H3), contrary to hypothesis, trust and current emotional impact of adversity were not predictive of emergency helping. Blocks 1 and 2 were equivalent to Model 2, with empathy once more becoming a stronger negative predictor at block 3 (β = -.173, p = 0.044) with the introduction of current emotional impact of adversity. This regression is presented in full in Table 5.

Emergency helping followup. Due to the negative influence of empathy in Model 1 as well as the apparent strengthening of the influence of empathy with the introduction of the emotional impact variables in Models 2 and 3, additional analyses checking for moderation and mediation for all models were conducted using

Hayes' (2013) PROCESS routine (release 2.16.1) in SPSS 24. PROCESS corrects for non-normality of predictors and provides bootstrapped estimates of mediation. It generates direct and indirect effect estimates with 95% confidence intervals (up to 50,000 resamples), and uses bias-corrected standard errors when calculating p-values. For each moderation, the highest number of bootstraps was used.

In response to Model 1, I tested for moderation between recent adversity and empathy and found the interaction trending (b = -.1221, p = 0.064). As this was an exploratory analysis I looked at simple slopes to find that the trend showed the effect of trauma on helping was strongest at low (1 SD below the mean) and average empathy, while there was no effect of trauma on helping at high (1 SD above the mean) empathy. In other words, the trend shows that when empathy is high, individuals with recent adversity help as much as those without it, but when empathy is average or low, individuals with recent adversity help more than those without it. Though the moderation effect was not significant, the relationship between these variables and emergency helping should be further explored in the future. The mediation test was nonsignificant.

As Model 2 demonstrated an increase in the predictive power of empathy with the addition of emotional impact at the time of the event, I tested for mediation and found that it was trending. Though emotional impact at the time of the event does not directly predict helping, it trends toward predicting empathy (b = .099, p = 0.075), and the indirect effect through empathy was trending (b = -.027, CI [-.088, .0003]). The moderation test was nonsignificant.

As Model 3 also demonstrated an increase in the predictive power of empathy with the addition of current emotional impact, I tested for mediation and found a significant mediated effect. Current emotional impact predicts empathy (b = .127, p = 0.012) and the indirect effect through empathy is significant (b = -.033, CI [-.093, -.0009]). I also tested for moderation and found the effect was significant (b = -.303, p = 0.050). Simple slopes showed that the effect of current emotional impact on helping is trending (p = 0.067) only at low levels of empathy. In other words, when empathy is low, the current emotional impact of adversity trends toward positively predicting emergency helping. The significant mediation and trending moderation may indicate that there is a moderated mediation effect where empathy both acts as a pathway to helping and changes the relationship between current emotional impact and emergency helping. This relationship should be further explored in the future.

Interpersonal Helping (H4, H5, H6)

In Model 1 (H4), contrary to expectation, empathy, lifetime adverse life experience, and recent adverse life experience were not associated with interpersonal helping. Only trust was positively associated with interpersonal prosocial behavior, controlling for demographics (β = .225, p = 0.008), and remained significant on the third (β = .206, p = 0.017) and fourth block (β = .209, p = 0.016). This regression is presented in full in Table 6.

In Model 2 (H5), contrary to expectation, neither empathy nor emotional impact at the time of adversity were predictive of interpersonal prosocial behavior. Trust was positively related to interpersonal prosocial behavior at the second block (β = .226, p = 0.008), and remained significant on the third block (β = .232, p = 0.008). This regression is presented in full in Table 7.

In Model 3 (H6), contrary to expectation, neither empathy nor current emotional impact of adversity were predictive of interpersonal prosocial behavior. Blocks 1 and 2 were equivalent to Model 2, and trust remained a significant positive predictor on the third block (β = .238, p = 0.007). This regression is presented in full in Table 8.

Organizational Helping (H7, H8, H9)

In Model 1, as hypothesized, recent adversity and empathy were predictive of organizational prosocial behavior. However contrary to prediction, trust was not related to organizational prosocial behavior. Empathy was positively associated with interpersonal prosocial behavior controlling for demographics (β = .188, p = 0.025), and remained significant on the third (β = .188, p = 0.026) and fourth (β = .194, p = 0.018) block. Recent adversity was positively predictive of Organizational helping (β = .261, p = 0.001). As expected, lifetime adverse life experience was not predictive of organizational prosocial behavior. This regression is presented in full in Table 9.

In Model 2, as hypothesized, emotional impact at the time of adversity was predictive of organizational prosocial behavior. Gender was predictive on the first block (β = -.162, p = 0.043) with females helping more, but became non-significant with the

introduction of empathy and trust. Empathy (β = .186, p = 0.027) was a significant positive predictor controlling for demographics. Emotional impact at the time of adversity was positively predictive of interpersonal prosocial behavior (β = .186, p = 0.020) on block 3, at which point empathy became non significant, though trending (β = .158, p = 0.060) and trust began to trend in a positive direction as well (β = .141, p = 0.090). This regression is presented in full in Table 10.

In Model 3, as hypothesized, current emotional impact of adversity was predictive of organizational prosocial behavior (β = .251, p = 0.004). Blocks 1 and 2 were equivalent to Model 2. With the addition of current emotional impact, empathy became non significant while trust became significant (β = .173, p = 0.040). This regression is presented in full in Table 11.

Organizational helping followup. Due to the apparent strengthening of the influence of trust, and weakening of the influence of empathy with the introduction of the emotional impact variables in Models 2 and 3, additional analyses checking for moderation and mediation were conducted with PROCESS.

Model 2 demonstrated a decrease in the predictive power of empathy with the addition of emotional impact at the time of the event. I tested for mediation and found that it was significant. Emotional impact at the time of the event trends toward predicting empathy (b = .099, p = 0.075) and the indirect effect of emotional impact on helping through empathy is significant (b =.035, CI [.001, .111]. I tested for moderation and found that it was trending (b = .509, p = 0.084). Simple slopes showed at high and

medium empathy emotional impact at the time of the event predicts organizational helping. This is another instance of a possible moderated mediation, which should be further explored in the future.

Model 2 also showed an increase in the predictive power of trust with the addition of emotional impact at the time of the event. I tested for mediation and found that though emotional impact at the time of the event predicts trust (b = -.164, p = 0.027), the indirect effect was not significant (b = -.039, CI [-.136, .003]), and there was no mediation. The moderation test was nonsignificant.

Model 3 demonstrated a decrease in the predictive power of empathy with the addition of current emotional impact. I tested for mediation and found that it was significant. Current emotional impact predicts empathy (b = .127, p = 0.012) and the indirect effect of emotional impact on helping through empathy is significant (b =.038, CI [.002, .117]). The moderation test was nonsignificant.

Model 3 also showed an increase in the predictive power of trust with the addition of current emotional impact. I tested for mediation and found that current emotional impact predicts trust (b = -.223, p = 0.0007) and the indirect effect was significant (b = -.066, CI [-.183, -.0001]), demonstrating a significant mediation effect. The moderation test was nonsignificant.

Categories of Adversity (ARQ1)

The categories of adversity did not differentially predict the three types of helping nor empathy. The categories did differentially predict feeling helped and supported during

the event $F(5,152) = 12.49$, $p = 0.0001$, as well as centrality of the event $F(5,152) = 4.69$, $p = 0.001$. The categories were trending for prediction of trust $F(5,152) = 2.24$, $p = 0.054$. Tukey post-hoc tests were conducted for each ANOVA with means and standard deviations reported in Table 12, and visualized in Figure 1.

For feeling helped and supported, individuals whose worst selected event was in the bereavement ($M = 3.76$, $SD = 1.02$), injury/illness ($M = 3.49$, $SD = 1.24$), or socio-environmental category ($M = 3.00$, $SD = 1.32$) felt more helped and supported than individuals whose worst selected event was in the relationship category ($M = 2.00$, $SD = 1.07$), and individuals whose worst selected event was in the violence category ($M = 1.89$, $SD = 1.08$).

For centrality of event, individuals whose worst selected event was in the relationship category ($M = 3.93$, $SD = 0.92$) felt the event was more central to their identity than individuals whose worst selected event was in the bereavement category ($M = 3.19$, $SD = 0.94$), individuals whose worst selected event was in the violence category ($M = 3.05$, $SD = 1.01$), and individuals whose worst selected event was in the community disaster category ($M = 2.54$, $SD = 1.10$).

For trust, individuals whose worst selected event was in the community disaster category ($M = 2.73$, $SD = 0.64$) had higher trust than individuals whose worst selected event was in the relationship category ($M = 2.18$, $SD = 0.56$) with the mean difference significant at $p = .043$.

Reasons for Helping (ARQ2)

Only participants who reported helping were asked to provide the answers to the reasons for helping questions. Three participants reported helping, though they did not do so and were excluded from the analysis, while one participant who helped did not report helping and was therefore not prompted to complete these questions, leaving a total N = 35. The plurality of participants (40%) selected only one reason, while very few (5.71%) selected all. Negative state relief and restoring equilibrium were endorsed the most (n = 20 for each) followed by empathy (n = 19), similarity (n = 11) and indirect reciprocity (n = 10). The most nominated primary reason for helping was negative state relief (n = 11), followed by empathy (n = 10) and restoring equilibrium (n = 8), with indirect reciprocity and similarity/group identity in last place (n = 3).

Due to the dichotomous nature of the reasons for helping variables, Cochran's Q non parametric test was conducted in place of a repeated measures ANOVA. The test evaluated differences of endorsement across the five reasons for helping variables and was statistically significant $\chi 2(4) = 12.75$, $p = 0.013$. Exact McNemar's tests showed statistically significant differences such that empathy and restoring equilibrium were selected more than reciprocity (p = .022 and p = .021, respectively), while negative state relief was trending over reciprocity (p = .052). Negative state relief and empathy were selected more than group identity (p = .035 and p = .039, respectively), while restoring equilibrium was trending over group identity (p = .064).

Using the forced primary reason for helping as a grouping variable, I conducted a one way ANOVA with all variables of interest (adversity, emotional impact, helping, empathy, trust, feeling helped supported during the worst event, centrality of the worst event). Due to small sample size, unequal group sizes and variance, the following exploratory results should be interpreted with caution (though robust tests of equality of means and nonparametric test show trends in the same direction as those reported below[2]).

Reasons for helping differed significantly for recent adversity $F(4, 30) = 3.48$, $p = 0.019$, with Tukey HSD showing that people who selected empathy had more recent adverse events ($M = 3.50$, $SD = 2.59$) than people who selected negative state relief ($M = 1$, $SD = 0.89$) or people who selected restoring equilibrium (M = 1, SD = 1.07). Interpersonal helping was trending at $F(4, 30) = 2.54$, $p = 0.060$, with Tukey HSD showing that people who selected empathy engaged in less interpersonal prosocial behavior ($M = 2.30$, $SD = 0.82$) than people who selected restoring equilibrium ($M = 3.38$, $SD = 0.74$). See Table 13 for complete list of means and standard deviations and Figure 2 or a visualization.

Steps to Helping (ARQ3)

Participants were grouped according to the emergency helping variable into non-helpers, those who called out once, and those who took greater action. One participant reported not noticing the accident (question 1), yet offering help (question 5). Due to the

[2] A Kruskal-Wallis H test showed that there was a statistically significant difference in interpersonal helping $\chi2(4) = 9.77$, $p = 0.044$, while recent adversity was trending $\chi2(4) = 9.16$, $p = 0.057$.

observation notes stating this participant clearly noticed the accident, and did not engage in any helping action, the participant was excluded from the following analysis ($N = 160$).

All of the participants reported noticing the occurrence and therefore getting through Step 1. Starting with Step 2, 55.6% of the participants who did not help, and 35.7% of the participants who called out once, report not thinking the occurrence required any action. For Step 3, 31.5% of the participants who did not help and 28.6% of the participants who called out once reported not taking responsibility for checking or offering assistance. At the end of Step 4, only 21.4% of those who called out once report deciding how to offer assistance versus 100% of those who took greater action. Of those who did not offer assistance, 6.5% reported also getting through step 4. Though question 5 was designed to address implementation of helping action (Step 5), it only served to confirm or deny helping action rather than as confirmation of whether the decision participants came to was implemented. Therefore, Step 5 can only be inferred from participant action or inaction. For a detailed list of participant responses see Table 14.

Word analysis (ARQ4)

Participant comments were analyzed using LIWC2015. LIWC provides approximately 90 output variables for each text provided ranging from psychological construct to punctuation categories (for more information see Pennebaker, Boyd, Jordan, & Blackburn, 2015). The following exploratory analyses tested for differences in word count, analytical thinking, clout, authenticity, emotional tone, affective processes (positive emotion, negative emotion [anxiety, anger, sadness]), perceptual processes

(feel), biological processes (body, health) and drives (affiliation, achievement, power, reward, risk). Participant scores were compared using an ANOVA with emergency helping as the grouping variable (non-helpers, those who called out once, those who took greater action). Due to small sample size, unequal group sizes and variance, the following exploratory results should be interpreted with extreme caution and used only to inform future research.

The levels of helping differentially predict word count $F(2,80) = 3.12$, $p = 0.050$, sadness $F(2,80) = 3.14$, $p = 0.049$, drives $F(2,80) = 3.95$, $p = 0.023$, and achievement $F(2,80) = 3.64$, $p = 0.031$. The levels of help were trending in the case of clout $F(2,80) = 2.70$, $p = 0.073$ and body $F(2,80) = 3.07$, $p = 0.052$.

Tukey post-hoc tests were conducted for each ANOVA (see Table 15 for complete list of means and standard deviations). For each of the post-hoc tests, the significant (or trending) difference was between non helpers and those helpers who took greater action. Non helpers ($M = 92.53$, $SD = 87.61$) used more words than greater action helpers ($M = 34.15$, $SD = 20.12$), had less sadness, drive, and achievement ($M = .34$, $SD = .95$; $M = 3.47$, $SD = 3.52$; $M = .41$, $SD = 1.16$, respectively) than greater action helpers ($M = 2.43$, $SD = 6.91$; $M = 7.60$, $SD = 9.04$; $M = 3.36$, $SD = 9.06$, respectively), and were trending lower on clout and body ($M = 17.49$, $SD = 20.73$; $M = .20$, $SD = .71$, respectively) than greater action helpers ($M = 32.67$, $SD = 23.00$; $M = .86$, $SD = 1.52$, respectively).

Chapter 4

Discussion

The current study was designed to investigate the relationship between the experience of adverse life events and engagement in prosocial behavior in a diverse sample of undergraduate students. The first goal was to assess the previously unexplored relationship between prior experience of adversity and subsequent helping in an apparent emergency. The second goal was to replicate prior findings on the relationship between adversity and interpersonal and organizational helping in this sample, as well as to address the emotional impact of adversity on helping. The third goal was to investigate the influence of empathy and trust in the relationship between adversity and helping. The fourth goal of the study was to address several exploratory questions in order to inform future research.

Adverse Life Experiences and Emergency Helping

In addressing the primary goal, this study demonstrated that experiencing adversity is indeed positively related to subsequent engagement in emergency helping. There was a positive linear relationship between recent adversity and emergency helping, such that individuals who experienced more adversity in the last year helped more. This is the first study to demonstrate the positive relationship between prior experience of adversity and subsequent bystander intervention in a controlled lab environment, thus extending findings in prior literature (Christy & Voigt 1994, Huston et al., 1981).

Contrary to expectation, lifetime adversity was not predictive of emergency helping in this sample. Additionally, neither emotional impact at the time of adversity (H2) nor current emotional impact of adversity (H3) were significant predictors of emergency helping. These findings demonstrate that it may be the recent experience of adversity that makes an individual better prepared to help in an emergency, rather than the feelings adverse experiences generate in the individual. In other words, people who have recently experienced more, and possibly more varied, negative life events may be quicker to recognize an event as potentially traumatic and therefore quicker to respond. In the case of emergency helping, it may be that personal experience, rather than emotional impact, makes for a better helper.

Adverse Life Experiences and Interpersonal and Organizational Helping

The second goal of the study was to test whether prior findings about the positive relationship between the experience of adversity and engagement in interpersonal and organizational prosocial behavior (Turkusic et al. 2012) can be replicated in a sample of undergraduate students.

In the case of organizational helping (time spent volunteering for various charitable organizations), the primary hypothesis for replication (H7) was confirmed; recent adversity was a significant predictor of organizational helping in the undergraduate student sample. Additionally, both emotional impact of adversity at the time of adversity (H8), and current emotional impact of adversity (H9), were significant predictors of organizational helping. Thus when it comes to helping by volunteering for various

organizations, it seems that both the experience of adversity, and the feelings caused by such an experience, are positively associated with helping engagement.

In the case of interpersonal helping (time spent helping individuals in one's community), prior findings on the positive relationship between lifetime and recent experience of adversity and interpersonal helping were not confirmed in the current sample. Contrary to expectation, neither lifetime nor recent adversity were significant predictors of helping individuals in one's community. The same was true for emotional impact; neither emotional impact at the time of adversity (H5), nor current emotional impact of adversity (H6), were significant predictors of interpersonal helping.

Why would adversity predict interpersonal helping in a nationally representative sample of American adults but not in a sample of undergraduate students? A study on the changes in prosocial behavior in adolescence and early adulthood (Eisenberg, Cumberland, Guthrie, Murphy, & Shepard, 2005) provides some insight. The researchers found that prosocial behavior follows a cubic trend, with high prosocial behavior reported when participants were around 16 and 17 years old, dropping in their early 20s, and then increasing again around 25 years old. As the students in the current sample were predominantly 19 years old, they may have been experiencing this drop in prosocial behavior.

Emerging adulthood (18-25) is a time of newfound independence and identity exploration (Arnett, 2000) and as such individuals may be spending more time, effort, and energy finding their place in the world. Though Eisenberg et al. (2005) do not

differentiate between different types of helping, interpersonal helping may be particularly susceptible to the age-related drop in prosociality they reported. In contrast to organizational helping which tends to be planned and long-term, interpersonal helping is spontaneous and opportunity based. Young adults finding their way in the world may have less resources to help individuals in their community, even if they are continuing their involvement with charitable organizations. Another explanation for the differences found in the samples may be that adults in middle age are presented with different kinds of opportunities for interpersonal helping, and that these differences in type are differentially impacted by prior experience of adversity.

Trust and Empathy

In addressing the third goal of the study, trust and empathy were found to uniquely predict different types of helping, as well as to sometimes function as mediators or moderators of the relationships between adverse life events and helping, or emotional impact of adversity and helping.

Emergency helping. Empathy negatively predicted emergency helping, though empathy is most often positively related to helping behavior (Eisenberg & Miller, 1987). This may indicate that high empathy impedes helping action in emergency situations specifically, though the mechanism cannot be inferred from the current study. Hoffman (1978) proposed the concept of empathic overarousal as a form of personal distress that may shift a potential helper's focus away from the person in need. However, such arousal would occur as a response to a situation, while the empathy measured in this study was

trait empathy. The design of the current study does not allow for extensive exploration of why trait empathy would be negatively related to emergency helping, but exploratory mediation and moderation analyses show future research would benefit from an additional focus on empathy in the relationship between adversity and helping. Trust did not predict emergency helping.

Interpersonal helping. Trust was a positive predictor of interpersonal helping, which seems to be a logical extension of the established relationship between trust and cooperation. In order to extend a helping hand to the members of one's community, an individual must trust that they are not being taken advantage of. This would not necessarily be a concern in the case of planned organizational helping, where the organizations and the beneficiaries have likely been vetted. Empathy was not predictive of interpersonal helping in this sample, but future studies should assess the relationship in other samples.

Organizational helping. Empathy was positively predictive of organizational helping, while trust was not directly predictive. However, when emotional impact variables were introduced to the regression models, empathy lost significance, and trust began to trend significant as a predictor of organizational helping. Exploratory analyses demonstrated some mediating and moderating effects of empathy and trust with the emotional impact variables, where emotional impact showed negative trends with trust, and positive trends with empathy. These exploratory analyses show future research would

benefit from an additional focus on empathy and trust in the relationship between emotional impact of adversity and organizational helping.

Additional Research Questions

The analyses of the additional research questions demonstrated differences exist between participants based on the type of adversity experienced, the reason for helping selected, and the helping action taken. Though exploratory, such findings help us get incrementally closer to differentiating the pathways that may lead from adversity to various outcomes.

Categories of adversity. Individuals whose worst event was in the Bereavement, Injury/Illness, or Social/Environmental categories, reported feeling significantly more helped and supported than those individuals whose worst events were in the categories of Relationship or Violence. Thus, different types of adversity are related to differences in feeling helped and supported by one's community. There are multiple determinants of negative social reactions to adversity and it may be the case that different types of adversity are perceived as more or less deserving of support (Herbert & Dunkel-Schetter, 1992). In the case of centrality of event, individuals in the Relationship category integrate the event into their life story to a greater extent than individuals in the Bereavement, Violence, and Community Disaster categories. The centrality of event scale measures the extent to which an event is considered a turning point in one's life story, a central component of one's identity, and a reference point for daily inferences (Berntsen & Rubin, 2006). High scores on the scale have been associated with both post-traumatic

distress and post-traumatic growth (Groleau, Calhoun, Cann, & Tedeschi, 2013). As centrality of event is a fairly new variable, further research is needed to discover the pathways by which it may lead to positive or negative outcomes. The current findings suggest that looking at categories of adversity may be helpful to this end.

Reasons for Helping. Negative state relief, restoring equilibrium and empathy were the most nominated and most influential reasons for emergency helping, and there were significant differences in preference of certain reasons for emergency helping over others. Future research could use modeling to test pathways from different types of adversity, through different motivations, to different types of helping. The primary reason for helping analyses lend tentative support to the differences in these pathways, as individuals who selected empathy as their primary helping reason had more recent adverse events than people who selected negative state relief or restoring equilibrium, while people who selected restoring equilibrium as their primary reason engaged in more interpersonal helping than those who selected empathy.

Steps to Helping. In the case of emergency helping, this study demonstrated there is complexity in personal perceptions of steps to helping when the offered help is minimal; some of the participants who offered help by calling out once only did not report going through all of the steps, and their attrition rate mimicked that of non helping participants. All of the participants who failed to help failed to go through one of the steps to helping, while all of the participants who took greater action successfully went through all of the steps to helping. In research on bystander intervention, calling out is

considered a helping behavior as established by Latané and Rodin (1969) and yet, those individuals who called out once clearly perceived their steps to action differently than those individuals who took greater action. When it comes to true emergencies, it may be important to assess whether help would be provided if no response came from the victim. Since calling out once may not be helpful in certain emergencies, these findings may serve to inform study design in the future.

Word Analyses. All of the differences found in these exploratory post hoc tests were between non-helpers and those helpers who took greater action. Non helpers used more words, had fewer words related to sadness, drive, and achievement and were trending with fewer words related to clout and body. It may be the case that non-helpers felt the need to justify their inaction and thus used more words overall, while greater action helpers used fewer words, with greater focus on their successful action and the concerns that lead toward it.

Summary

This study demonstrated that experiencing recent adversity is positively associated with increased helping in an emergency. Additionally the study replicated prior findings about the relationship between adversity and organizational prosocial behavior in a sample of undergraduates, as well as demonstrated the relevance of emotional impact of adversity to organizational helping. By failing to confirm a prior finding on the relationship between adversity and interpersonal prosocial behavior, this study brought forth a question about the possible age related changes in interpersonal behavior that may

be relevant to studies of college students. Empathy and trust were confirmed as important and complex factors that should be considered in the relation between adversity and different kinds of helping. Through exploratory analyses addressing additional research questions with categories of adversity, primary reasons for helping, and steps to helping, the study provides some additional support for theories addressing multiplicity of pathways from adversity, through reasoning, to prosocial behavior.

Limitations and Future Directions

Overall, this study was designed to open new points of discovery by moving beyond some of the limitations found in prior studies of adversity and prosocial behavior by a) using a behavioral measure of prosocial behavior in addition to self-reported measures, b) using a post-adversity measure of prosocial behavior, in addition to measuring behavior that may have co-occurred with adversity, c) adding measures dealing with adverse event importance, intensity and current impact in addition to simple counts of adverse events, and d) gathering data that explores various theory-based reasons for helping. However, there are some additional limitations in this mixed quasi experimental and questionnaire design.

In cases such as this one, where the author of the study also conducted all of the data collection, concerns of experimenter bias should be addressed. In this study, the quasi-experimental nature of the design ensured that the experimenter was blind to what would have been the conditions in a true experiment (levels of adversity), while the questionnaire component hid from the experimenter the relevant individual differences

among the participants. It was therefore not possible for the experimenter to influence outcomes for the relationships of interest.

The staged accident occurred in real time, and possible variations in the sounds heard by the participants should be considered. However, there is no reason to think such variation could have occurred systematically and influenced the relationships of interest. An additional benefit of having a single experimenter collect all of the data is greater consistency in accident set up and script delivery. Though all of the participants heard the same script, it is possible that the experimenters demeanor during script delivery differed based on whether the participants offered help. However, it is unlikely experimenter demeanor in the aftermath of the accident would influence participant recollection and reporting of prior adverse life events.

The number of participants who offered help was much lower in this study than in the original paradigm on which this study was based (Latané & Rodin, 1969). While the original study reported 70% helping, only 22% of the participants in the current study offered help. There are two main differences between the paradigms that may have influenced this difference in helping. First, in the original study, the accident victim continued to make sounds and refer to her injury ("oh, my ankle"), while this study followed the accident sound and scream with complete silence. Thus the need for help was much clearer in the original study. Additionally, in the original study, the participants were waiting for the appearance of the researcher when the accident occurred. In the current study the participants were already working on the task when the researcher had

the accident. In their reflections on the accident, many participants wrote that they wanted to help, and would have done so, but they did not want to "mess up" the color study by interrupting it. In the real world, people often have to interrupt their important tasks when they are faced with emergency situations, so further exploration of the different types of distractor tasks may be useful in future research.

In cases of deception studies, especially ones where the participant may be placed in a state of stress or uncertainty, it is important to address risks and benefits. The potential risks from this study were minimized by using well-established surveys as well as an experimental paradigm for which there are no reported serious or long-term negative effects. Though the unexpected apparent emergency could have caused a stress reaction, the select paradigm in which the apparent emergency is peripherally heard is one of the least potentially stressful paradigms available.

Students may have also felt melancholy or discomfort while reflecting on prior life events or their response to the apparent emergency. However, questions about personal experience were balanced by including positive events, and though some participants reported post debriefing feeling like they should have offered help, they also reported being glad to have participated in the study and feeling like it prepared them to help in future occasions. Many students volunteered the information that this study was their favorite study in which they participated.

The issue of self-selection should additionally be considered when participants get to chose studies to participate in, as is the case in most research with university students.

In this case, students believed they were in a study about how life events and personal views impact color perception. The cover story was strengthened by the addition of color surveys interspersed in the questionnaires, and it held up for the vast majority (all but 3) of the participants. Participants were asked two survey questions probing suspicion into this study before the partial debriefing occurred. After the debriefing they were also directly asked if they were suspicious of the accident. Those participants who reported seeing through the cover story were excluded from the results.

Though the emergency helping variable was a post adversity behavior observed in real time, both the organizational and the interpersonal helping variables were self reported and could have co-occurred with recent adversity. Contemporaneous measurement of adversity and prosocial behavior would show the effect of prior experience of adversity if such an effect is time limited, however, the duration of the relationship between adversity and various helping behaviors would best be studied in a longitudinal design. In self reported measures of prosocial engagement, social desirability is an additional factor to consider. However, there is no reason to think that individuals would differ systematically in the representation of their prosocial behavior in a way that would influence the relationship between variables of interest in this study.

Additionally, it is important to note that participants were retrospectively reporting their emotional impact at the time of the adverse event. As such, the current emotional impact of the event is likely to have influenced their recollection. Though the

information provided is relevant and important to the concepts at hand, the variable should be considered with caution.

Finally, due to the fact this field of study is still new, the analyses conducted on the processes that lead to helping behavior (steps to helping, reasons for helping) were necessarily exploratory in nature. The benefits of such exploratory analyses are that they provide information for future research design and theory. Ideally these relationships should be studied through combined longitudinal and cross sectional design, allowing for modeling of adverse experience, motivational processes, and engagement in various helping behaviors. As longitudinal studies are by virtue of design time consuming, they benefit from studies such as this one, which provide incremental knowledge about relationships between variables of interest, if not a complete picture of the processes by which these relationships form. Additionally it would be quite difficult to collect honest behavioral information on emergency helping from the same participants year after year using deception, while archival research and self report have their own drawbacks.

Future studies should additionally consider the population of interest. The National Center for Education Statistics reports there were approximately 17.3 million undergraduates in 2014 (National Center for Education Statistics, 2016) meaning college students represent only about 5% of the adult population of the US. By virtue of age and experience they are likely to differ from a representative adult population when it comes to types of adversity experienced as well as in their opportunities for helping behavior. Though information provided by studies of undergraduates can serve to inform us about

this specific population, as well as to guide future research in representative populations, it is important to also conduct studies addressing these differences in order to understand how to best target relevant interventions.

There are many important possible future directions that emerge from this line of research. Further studies into bystander helping could test for post adversity helping across different emergency situations, or see if those who have experienced adversity are less susceptible to diffusion of responsibility. In the case of interpersonal helping, it would be useful to gather information from participants in different age groups about the types and amount of interpersonal helping they encounter and engage in. For instance, college students in advanced classes may have more opportunities to tutor friends than they would have at the start of their college careers, while adults may have more opportunities to help ailing friends and family members.

Future studies could also focus on the specific connections between categories of adversity and types of subsequent prosocial behavior. It would be useful to additionally consider frequency of prior exposure to different categories of events and how this frequency influences helping behavior. Studies on perceived social support could test how support affects prosocial behavior post adversity, or which types of adversity are most lacking in social support. Using multilevel modeling, studies could further explore the variables implicated in the multiplicity of pathways, from adversity, through reasoning, to prosocial behavior. The field of prosocial engagement in the aftermath of

adversity is promising and ripe for exploration, with potential to lead to many applied interventions for individuals suffering in the aftermath of adversity.

Implications and Conclusions

Studies focusing on positive outcomes of negative life events may serve to encourage and help individuals who are struggling in the aftermath of adversity. As the findings suggest these individuals may be particularly motivated to act in prosocial ways, encouraging prosocial action may lead to additional benefits for those who have experienced adversity. Research shows that those who engage in helping behavior experience increased health and wellbeing (Piliavin & Siegl, 2007), better life satisfaction (Van Willigen, 2000) and even delayed mortality among the elderly (Harris & Thoresen, 2005). Therefore, engagement in prosocial action may be an alternative way to help those individuals who are having trouble coping with their adverse experiences.

Prosocial engagement is beneficial for communities, but highlighting and encouraging prosocial engagement in the aftermath of adversity may be most impactful on the individual level. As an illustrative example, an organization called "The Mission Continues" empowers veterans to adjust to civilian life through leadership and service in their communities (“The Mission Continues: About Us”, 2014). This type of prosocial engagement helps individual veterans, who have certainly experienced adversity, as they help the communities they serve.

The current study showed that individuals who have experienced adversity engage in more helping behavior. This finding implies that there are many individuals like Nick

Ut or Malala Yousafzai in our own communities, and we can be encouraged and guided by their example. Future studies detailing pathways from adverse experience to prosocial engagement may help us find tailored ways to help individuals who are suffering in the aftermath of adverse life experience. Finding ways to guide individuals to use their tendency for helping others to also help themselves heal can ultimately lead to healthier communities and societies.

References

About UCR: Facts. (2016, March 3). Retrieved July 25 2016 from https://www.ucr.edu/about/facts.html

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480.

Batson, C. D., Duncan, B. D., Ackerman, P., Buckley, T., & Birch, K. (1981). Is empathic emotion a source of altruistic motivation? *Journal of Personality and Social Psychology, 40*(2), 290-302.

Becker, S. W., & Eagly, A. H. (2004). The heroism of women and men. *American Psychologist, 59*(3), 163-178.

Berkowitz, L., & Daniels, L. R. (1964). Affecting the salience of the social responsibility norm: Effects of past help on the response to dependency relationships. *The Journal of Abnormal and Social Psychology, 68*(3), 275-281.

Berntsen, D., & Rubin, D. C. (2006). The centrality of event scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy, 44*(2), 219-231.

Blum, S. C., Silver, R. C., & Poulin, M. J. (2014). Perceiving risk in a dangerous world: Associations between life experiences and risk perceptions. *Social Cognition, 32*(3), 297-314.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*(1), 20-28. doi:10.1037/0003-066X.59.1.20

Caruso, D. R., & Mayer, J. D. (1998). A measure of emotional empathy for adolescents and adults. *Unpublished manuscript*.

Christy, C. A., & Voigt, H. (1994). Bystander responses to public episodes of child abuse. *Journal of Applied Social Psychology, 24*(9), 824-847.

Cialdini, R. B., & Kenrick, D. T. (1976). Altruism as hedonism: A social development perspective on the relationship of negative mood state and helping. *Journal of Personality and Social Psychology 34*(5), 907-914. doi:10.1037/0022-3514.34.5.907.

Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski M. A. (2001). Posttraumatic growth following breast cancer: A controlled comparison study. *Health Psychology, 20*(3), 176-185. doi:10.1037//0278-6133.20.3.176

Dodge, K. A., Bates, J. E., & Petit G. S. (1990). Mechanisms in the cycle of violence. *Science, 250*, 1678-1683.

Dovidio, J. F., Piliavin, J. A., Schroeder, D. A., & Penner, L. (2006). *The social psychology of prosocial behavior.* Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Edwards, V. J., Holden, G. W., Felitti, V. J., & Anda, R. F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *The American Journal of Psychiatry, 160,* 1453-1460. doi:10.1176/appi.ajp.160.8.1453

Eisenberg, N., Cumberland, A., Guthrie, I. K., Murphy, B. C., & Shepard, S. A. (2005). Age changes in prosocial responding and moral reasoning in adolescence and early adulthood. *Journal of Research on Adolescence, 15*(3), 235-260.

Eisenberg, N., & Miller, P. A. (1987). The relation of empathy to prosocial and related behaviors. *Psychological Bulletin, 101*(1), 91-119.

Frazier, P., Greer, C., Gabrielsen, S., Tennen, H., Park, C., & Tomich, P. (2013). The relation between trauma exposure and prosocial behavior. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*, 286-294. doi:10.1037/ a0027255

Golding, J. M. (1999). Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence, 14,* 99-132. doi:10.1023/A:1022079418229

Groleau, J. M., Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2013). The role of centrality of events in posttraumatic distress and posttraumatic growth. *Psychological Trauma: Theory, Research, Practice, and Policy, 5*(5), 477-483.

Harris, A. H. & Thoresen, C. E. (2005). Volunteering is associated with delayed mortality in older people: Analysis of the longitudinal study of aging. *Journal of Health Psychology, 10*(6), 739-752. doi:10.1177/1359105305057310

Harris, M. E. (2015, April). Photographer who took iconic Vietnam photo looks back, 40 years after the war ended. *Vanity Fair.* Retrieved from http://www.vanityfair.com/news/2015/04/vietnam-war-napalm-girl-photo-today

Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach.* New York: Guilford Press.

Herbert, T. B., & Dunkel-Schetter, C. (1992). Negative social reactions to victims: An overview of responses and their determinants. In L. Montada, S.-H. Filipp, & M. J. Lerner (Eds.), *Life crises and experiences of loss in adulthood* (pp. 497-518). Hillsdale, NJ: Erlbaum.

Hoffman, M. L. (1987). The contribution of empathy to justice and moral judgment. In N. Eisenberg & J. Strayer (Eds.), *Empathy and its development* (pp. 47–80). New York: Cambridge University Press.

Huston, T. L., Ruggiero, M., Conner, R., & Geis, G. (1981). Bystander intervention into crime: A study based on naturally-occurring episodes. *Social Psychology Quarterly, 44*(1), 14-23.

IBM Corp. 2016. IBM SPSS Statistics for Macintosh, Version 24.0. Armonk, NY: IBM Corp.

Irwin, K. (2009). Prosocial behavior across cultures: The effects of institutional versus generalized trust. *Advances in Group Processes, 26*, 165-198. doi:10.1108/s0882-6145(2009)0000026010

Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma.* New York: Free Press.

Kahana, B., Kahana, E., Harel, Z., & Segal, M. (1986). The victim as helper: Prosocial behavior during the Holocaust. *Humboldt Journal of Social Relations, 13,* 357-373.

Latané, B., & Darley, J. M. (1976). *Help in a crisis: Bystander response to an emergency.* Morristown NJ: General Learning Press.

Latané, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?* New York: Appleton-Century-Crofts.

Latané, B., & Rodin, J. (1969). A lady in distress: Inhibiting effects of friends and strangers on bystander intervention. *Journal of Experimental Social Psychology, 5*(2), 189-202.

Levine, M., Prosser, A., Evans, D., & Reicher, S. (2005). Identity and emergency intervention: How social group membership and inclusiveness of group boundaries shape helping behavior. *Personality and Social Psychology Bulletin, 31*(4), 443-453.

Lim, D., & DeSteno, D. (2016). Suffering and compassion: The links among adverse life experiences, empathy, compassion, and prosocial behavior. *Emotion, 16*(2), 175-182.

Macksoud, M. S., & Aber, J. L. (1996). The war experiences and psychosocial development of children in Lebanon. *Child Development, 67*, 70-88.

National Center for Education Statistics, U.S. Department of Education. (2016) The Condition of Education 2016: Undergraduate Enrollment. Retrieved August 22 2016 from http://nces.ed.gov/programs/coe/indicator_cha.asp

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin, 129*(1), 52-73. doi:10.1037/0033-2909.129.1.52

Pennebaker, J.W., Boyd, R.L., Jordan, K., & Blackburn, K. (2015). *The development and psychometric properties of LIWC2015*. Austin, TX: University of Texas at Austin. doi: 10.15781/T29G6Z

Pennebaker, J.W., Booth, R.J., Boyd, R.L., & Francis, M.E. (2015). Linguistic Inquiry and Word Count: LIWC2015. Austin, TX: Pennebaker Conglomerates (www.LIWC.net).

Penner L. A., Brannick M. T., Webb S., & Connell P. (2005). The effects of the September 11, 2001 attacks on volunteering: An archival analysis. *Journal of Applied Social Psychology, 35*(7), 1333-1360.

Piliavin, J. A., Dovidio, J. F., Gaertner, S. L., & Clark, R. D. Ill (1981). *Emergency intervention.* New York: Academic Press.

Piliavin J. A. & Siegl E. (2007). Health benefits of volunteering in the Wisconsin longitudinal study. *Journal of Health and Social Behavior, 48*, 450-464. doi: 10.1177/002214650704800408

Raboteg-Saric, Z., Zuzul, M., & Kerestes, G. (1994). War and children's aggressive and prosocial behavior. *European Journal of Personality, 8*, 210-212.

Ratcliffe, M., Ruddell, M., & Smith, B. (2014). What is a "sense of foreshortened future?" A phenomenological study of trauma, trust, and time. *Frontiers in psychology, 5*, 1026-1037. doi: 10.3389/fpsyg.2014.01026

Schuster, M. A., Stein, B. D., Jaycox, L. H., Collins, R. L., Marshall, G. N., Elliott, M. N., . . . Berry, S. H. (2001). A national survey of stress reactions after the September 11, 2001 terrorist attacks. *New England Journal of Medicine, 345,* 1507-1512.

Seery, M. D., Holman, E. A., & Silver, R. C. (2010). Whatever does not kill us: Cumulative lifetime adversity, vulnerability, and resilience. *Journal of Personality and Social Psychology, 99*(6), 1025-1041.

Siegrist, M., Gutscher, H., & Earle, T. C. (2005). Perception of risk: The influence of general trust, and general confidence. *Journal of Risk Research, 8*(2), 145-156.

Silver, R. C. (2009). Resilience. In D. Sander & K. Scherer (Eds.), *The Oxford companion to emotion and the affective sciences.* (p. 345) New York, NY: Oxford University Press.

Silver, R. C., Holman, E. A., McIntosh, D. N., Poulin, M., & Gil-Rivas, V. (2002). Nationwide longitudinal study of psychological responses to September 11. *Journal of the American Medical Association, 288,* 1235-1244. doi:10.1001/jama.288.10.1235

Silver, R. C., Poulin, M., Holman, E. A., McIntosh, D. N., Gil-Rivas, V., & Pizarro, J. (2004). Exploring the myths of coping with a national trauma: A longitudinal study of responses to the September 11th terrorist attacks. *Journal of Aggression, Maltreatment & Trauma, 9*(1), 129-141. doi:10.1300/J146v9n01_16

StataCorp. 2015. Stata Statistical Software: Release 14. College Station, TX: StataCorp LP.

Staub, E. (2003). *The psychology of good and evil: Why children adults and groups help and harm others.* New York: Cambridge University Press.

Tedeschi, R.G. (1999). Violence transformed: Posttraumatic growth in survivors and their societies. *Aggression and Violent Behavior, 4*(3), 319-341.

Tedeschi, R. G., Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry 15*(1), 1-18. Retrieved from http://www.jstor.org/stable/20447194

The Mission Continues: About Us (2014) Retrieved August 22 2016 from https://www.missioncontinues.org/about/

Turkusic J., Poulin M., Friedman H. S., & Silver, R. C. (2012, January) *After darkness, light: Adverse life experience and prosocial behavior.* Poster presented at the annual meeting of the Society for Personality and Social Psychology, San Diego, CA

Turner, R. J., & Lloyd, D. A. (1995). Lifetime traumas and mental health: The significance of cumulative adversity. *Journal of Health and Social Behavior, 36,* 360-376. doi:10.2307/2137325

Van Willigen M. (2000). Differential benefits of volunteering across the life course. Journal of Gerontology 55B(5), S308-S318.

Vollhardt, J. (2009). Altruism born of suffering and prosocial behavior following adverse life events: A review and conceptualization. *Social Justice Research, 22,* 53-97. doi: 10.1007/s11211-009-0088-1

Vollhardt, J. R., & Staub, E. (2011). Inclusive altruism born of suffering: the relationship between adversity and prosocial attitudes and behavior toward disadvantaged outgroups. *American Journal of Orthopsychiatry, 81*(3), 307-315.

West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with nonnormal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Issues, concepts, and applications* (pp. 56-75). Newbury Park, CA: Sage.

Widom, C.S. (1989). Does violence beget violence? A critical examination of the literature. *Psychological Bulletin, 106,* 3-28.

Table 1

Psychometric Properties of the Major Study Variables

Variable	*n*	*M (SD)*	*Mode (%)*	Actual Range
Emergency helping	161	1.36 (0.71)	1 (77.64)	1-3
Interpersonal helping	161	2.59 (0.95)	2 (44.72)	1-5
Organizational helping	161	1.91 (1.05)	1 (44.10)	1-5
Recent adversity	161	1.34 (1.51)	0 (36.65)	0-8
Lifetime adversity	161	3.89 (3.27)	1 (16.77)	0-16
Emotional impact at event	158	3.66 (0.65)	-	2-5
Current emotional impact	158	2.25 (0.76)	-	1-4
Empathy	161	4.46 (0.47)	-	2.75-5
Trust	161	2.43 (0.62)	-	1.17-4.67
Helped and supported	158	2.90 (1.37)	2 (23.42)	1-5
Centrality of event	158	3.48 (0.95)	-	1.14-5

Note. Mode and the percent of participants at mode are not reported for scales created by averaging item responses.

Table 2

Intercorrelations Among Study Variables.

Variables	1	2	3	4	5	6	7	8
1. Emergency	-							
2. Interpersonal	.82	-						
3. Organizational	-.83	.38**	-					
4. Recent Trauma	.22**	.02	.22**	-				
5. Lifetime Trauma	.08	-.1	-.01	.18*	-			
6. EI at time of event	.03	.01	.19*	.25**	.23**	-		
7. Current EI	-.05	.02	.25**	.35**	.19*	.45**	-	
8. Helped Supported	-.03	.14	.11	-.09	-.26**	-.15	-.15	-
9. Centrality of event	.02	.02	.11	.34**	.41**	.34**	.57**	-.12
10. Empathy	-.19*	.09	.22**	-.02	.02	.15	.28**	-.02
11. Trust	.09	.19*	.08	-.10	-.21**	-.17*	-.31**	.31**
12. Gender	.17*	-.07	-.15	.002	-.07	-.10	-.33**	.04
13. Hispanic	-.01	-.05	-.14	.10	-.05	.03	.09	-.06
14. Asian	-.15	-.02	.05	-.08	-.15	.01	-.09	.16*
15. Multi	.13	.08	.12	-.03	.18*	-.06	.02	-.13
16.White	.09	.02	.01	-.01	.09	.03	-.03	.02

Table 2

Continued

Variables	9	10	11	12	13	14	15	16
9. Centrality of event	1							
10. Empathy	.13	1						
11. Trust	-.30**	-.04	1					
12. Gender	-.15	-.34**	.20*	1				
13. Hispanic	.12	.05	-.20*	-.04	1			
14. Asian	-.17*	-.14	.14	.06	-.58**	1		
15. Multi	.03	.14	-.09	-.08	-.39**	-.32**	1	
16.White	.04	-.04	.23**	.07	-.26**	-.21**	-.15	1

Note: Pearson correlations reported for all variables. $N = 161$ for variables 1-5 and 10-16. $N = 158$ for variables 6-9. ** $p < .01$; *$p < .05$.

Table 3

Regression Predicting Emergency Helping: Model 1

	Block 1			Block 2			Block 3			Block 4		
	b	SE b	β	b	SE b	β	b	SE b	β	b	SE b	β
Male	.28	.12	.18*	.17	.13	.11	.17	.13	.11	.17	.12	.11
Hispanic	-.19	.21	-.13	-.12	.21	-.09	-.10	.21	-.07	-.13	.21	-.09
Asian	-.34	.21	-.23	-.33	.21	-.22	-.30	.21	-.20	-.30	.21	-.20
Other	.03	.23	.02	.11	.23	.06	.12	.23	.07	.13	.23	.07
Empathy				-.28	.13	-.18*	-.27	.13	-.18*	-.27	.12	-.17*
Trust				.09	.09	.08	.11	.10	.09	.12	.09	.10
Lifetime adversity							.01	.02	.07	.01	.02	.03
Recent adversity										0.1	0.04	.21**
Constant	1.45	.19		2.45	.64		2.32	.66		2.17	.65	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.069; Block 2: ΔR^2=0.0321; Block 3: ΔR^2=0.004; Block 4: ΔR^2=0.043.

Table 4

Regression Predicting Emergency Helping: Model 2

	Block 1			Block 2			Block 3		
	b	SE b	β	b	SE b	β	b	SE b	β
Male	.30	.12	.20*	.20	.13	.14	.21	.13	.14
Hispanic	-.19	.20	-.13	-.14	.21	-.10	-.12	.21	-.08
Asian	-.38	.21	-.25†	-.37	.21	-.24†	-.35	.21	-.23†
Other	.04	.22	.02	.10	.23	.06	.14	.23	.08
Empathy				-.24	.13	-.16†	-.27	.13	-.18*
Trust				.07	.09	.06	.09	.09	.08
EI at time of event							.10	.09	.10
Constant	1.44	.19		2.37	.64		2.02	.70	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.080 ; Block 2: ΔR^2=0.025 ; Block 3: ΔR^2=0.009.

Table 5

Regression Predicting Emergency Helping: Model 3

	Block 1			Block 2			Block 3		
	b	SE b	β	b	SE b	β	b	SE b	β
Male	.30	.12	.20*	.20	.13	.14	.22	.13	.15
Hispanic	-.19	.20	-.13	-.14	.21	-.10	-.13	.21	-.09
Asian	-.38	.21	-.25†	-.37	.21	-.24†	-.36	.21	-.24†
Other	.04	.22	.02	.10	.23	.06	.11	.23	.06
Empathy				-.24	.13	-.16†	-.26	.13	-.17*
Trust				.07	.09	.06	.08	.10	.07
Current EI							.05	.08	.05
Constant	1.44	.19		2.37	.64		2.29	.66	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.080 ; Block 2: ΔR^2=0.025 ; Block 3: ΔR^2=0.002.

Table 6

Regression Predicting Interpersonal Helping: Model 1

	Block 1			Block 2			Block 3			Block 4		
	b	SE b	β	b	SE b	β	b	SE b	β	b	SE b	β
Male	-.13	.16	-.06	-.16	.17	-.08	-.17	.17	-.08	-.17	.17	-.08
Hispanic	-.13	.28	-.07	.07	.29	.03	.02	.29	.01	.01	.29	.004
Asian	-.09	.29	-.05	.02	.28	.01	-.03	.29	-.01	-.02	.29	-.01
Other	.09	.31	.04	.26	.31	.11	.25	.31	.10	.25	.31	.10
Empathy				.12	.17	.06	.12	.17	.06	.12	.17	.06
Trust				.34	.13	.22**	.31	.13	.21*	.32	.13	.21*
Lifetime adversity							-.02	.02	-.08	-.03	.02	-.09
Recent adversity										.04	.05	.06
Constant	2.70	.26		1.19	.87		1.40	.90		1.34	.90	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.012; Block 2: ΔR^2=0.049; Block 3: ΔR^2=0.006; Block 4: ΔR^2=0.004.

Table 7

Regression Predicting Interpersonal Helping: Model 2

	Block 1			Block 2			Block 3		
	b	SE b	β	b	SE b	β	b	SE b	β
Male	-.13	.16	-.07	-.17	.17	-.08	-.17	.17	-.08
Hispanic	-.13	.28	-.07	.07	.29	.03	.07	.29	.04
Asian	-.08	.29	-.04	.05	.29	.02	.05	.29	.03
Other	.09	.31	.04	.26	.32	.11	.27	.32	.11
Empathy				.14	.17	.07	.13	.18	.06
Trust				.35	.13	.23**	.35	.13	.23**
EI at time of event							.05	.12	.03
Constant	2.70	.27		1.12	.88		.96	.98	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.012 ; Block 2: ΔR^2=0.050 ; Block 3: ΔR^2=0.001.

Table 8

Regression Predicting Interpersonal Helping: Model 3

	Block 1			Block 2			Block 3		
	b	SE b	β	b	SE b	β	b	SE b	β
Male	-.13	.16	-.07	-.17	.17	-.08	-.15	.18	-.07
Hispanic	-.13	.28	-.07	.07	.29	.03	.07	.29	.04
Asian	-.08	.29	-.04	.05	.29	.02	.06	.29	.03
Other	.09	.31	.04	.26	.32	.11	.27	.32	.11
Empathy				.14	.17	.07	.12	.18	.06
Trust				.35	.13	.23**	.36	.13	.24**
Current EI							.06	.11	.05
Constant	2.70	.27		1.12	.88		1.01	.91	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.012 ; Block 2: ΔR^2=0.050 ; Block 3: ΔR^2=0.002.

Table 9

Regression Predicting Organizational Helping: Model 1

	Block 1			Block 2			Block 3			Block 4		
	b	SE b	β	b	SE b	β	b	SE b	β	b	SE b	β
Male	-.32	.18	-.14†	-.22	.19	-.10	-.22	.19	-.10	-.23	.18	-.10
Hispanic	-.22	.31	-.11	-.15	.31	-.07	-.16	.32	-.07	-.21	.31	-.10
Asian	.03	.31	-.01	.11	.31	.05	.10	.32	.05	.10	.31	.05
Other	.18	.34	.07	.21	.34	.08	.21	.35	.08	.23	.33	.08
Empathy				.42	.19	.19*	.42	.19	.19*	.44	.18	.19*
Trust				.16	.14	.09	.16	.14	.09	.18	.14	.10
Lifetime adversity							-.003	.03	-.01	-.02	.03	-.06
Recent adversity										.18	.05	.26***
Constant	2.07	.29		-0.30	.96		-0.27	1.00		-0.55	.96	

Note. Reference groups: Female; White. *** $p < .001$;** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.044; Block 2: ΔR^2=0.040; Block 3: ΔR^2=0.0001; Block 4: ΔR^2=0.065.

Table 10

Regression Predicting Organizational Helping: Model 2

	Block 1			Block 2			Block 3		
	b	SE b	β	b	SE b	β	b	SE b	β
Male	-.36	.18	-.16*	-.26	.19	-.12	-.25	.19	-.11
Hispanic	-.23	.31	-.11	-.14	.31	-.07	-.09	.31	-.04
Asian	.10	.31	.04	.18	.31	.08	.22	.31	.10
Other	.18	.34	.06	.21	.34	.08	.31	.34	.12
Empathy				.41	.19	.19*	.36	.19	.16*
Trust				.18	.14	.11	.23	.14	.14†
EI at time of event							.30	.13	.19*
Constant	2.08	.29		-.32	.96		-1.35	1.04	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.052 ; Block 2: ΔR^2=0.042 ; Block 3: ΔR^2=0.032.

Table 11

Regression Predicting Organizational Helping: Model 3

	Block 1			Block 2			Block 3		
	b	SE b	β	b	SE b	β	b	SE b	β
Male	-.36	.18	-.16*	-.26	.19	-.12	-.15	.19	-.07
Hispanic	-.23	.31	-.11	-.14	.31	-.07	-.11	.31	-.05
Asian	.10	.31	.04	.18	.31	.08	.23	.31	.10
Other	.18	.34	.06	.21	.34	.08	.30	.34	.11
Empathy				.41	.19	.19*	.31	.19	.14*
Trust				.18	.14	.11	.29	.14	.17*
Current EI							.35	.12	.25**
Constant	2.08	.29		-.32	.96		-.96	.96	

Note. Reference groups: Female; White. ** $p < .01$; *$p < .05$; † $p < .10$
Block 1: R^2=0.052 ; Block 2: ΔR^2=0.042 ; Block 3: ΔR^2=0.050.

Table 12

Means and Standard Deviations by Category of Adversity

		Helped Supported		Centrality of event		General Trust	
Category	*n*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Injury Illness	43	3.49	1.24	3.47	0.76	2.43	0.61
Violence	18	1.89	1.08	3.05	1.01	2.36	0.62
Bereavement	29	3.76	1.02	3.19	0.95	2.63	0.71
Socio Environmental	25	3.00	1.32	3.67	0.91	2.52	0.54
Relationship	38	2.00	1.07	3.93	0.92	2.18	0.56
Community disaster	5	2.80	1.64	2.54	1.10	2.73	0.64

Note. General trust was trending significant

Table 13

Means and Standard Deviations by Primary Reason for Helping

		Recent adversity		Interpersonal helping	
Reason for helping	*n*	*M*	*SD*	*M*	*SD*
Indirect reciprocity	3	2.33	2.52	2.67	1.16
Negative state relief	11	1.00	0.89	2.82	0.87
Empathy/Sympathy	10	3.50	2.59	2.30	0.823
Similarity / Group identity	3	1.67	0.58	2.00	0.00
World Views / Equilibrium	8	1.00	1.07	3.38	0.74

Table 14

Cross-tabs for Steps to Helping

	No help			Called out once			Greater action		
Category	n	Yes	No	n	Yes	No	n	Yes	No
Step 1. Notice	124	124	0	14	14	0	22	22	0
Step 2. Interpret	124	55	69	14	9	5	22	22	0
Step 3. Responsibility	55	16	39	9	5	4	22	22	0
Step 4. Choice	16	8	8	5	3	2	22	22	0
Step 5. Implement	8	0	8	3	3	0	22	22	0
Helped	124	0	124	14	14	0	22	22	0

Note. Step 5 was inferred from participant action or inaction.

Table 15

Means and Standard Deviations by LIWC Analyses

	Non helpers $n = 60$		Called out once $n = 10$		Greater action $n = 13$	
Category	*M*	*SD*	*M*	*SD*	*M*	*SD*
Word count	92.53	87.61	78.00	37.88	34.15	20.12
Sad	0.34	0.95	0.16	0.51	2.43	6.91
Drive	3.47	3.52	4.27	3.85	7.60	9.04
Achieve	0.41	1.16	0.24	0.77	3.36	9.06
Clout	17.49	20.73	22.04	24.13	32.67	23.00
Body	0.20	0.71	0.28	0.60	0.86	1.52

Note. Clout and Body were trending significant.

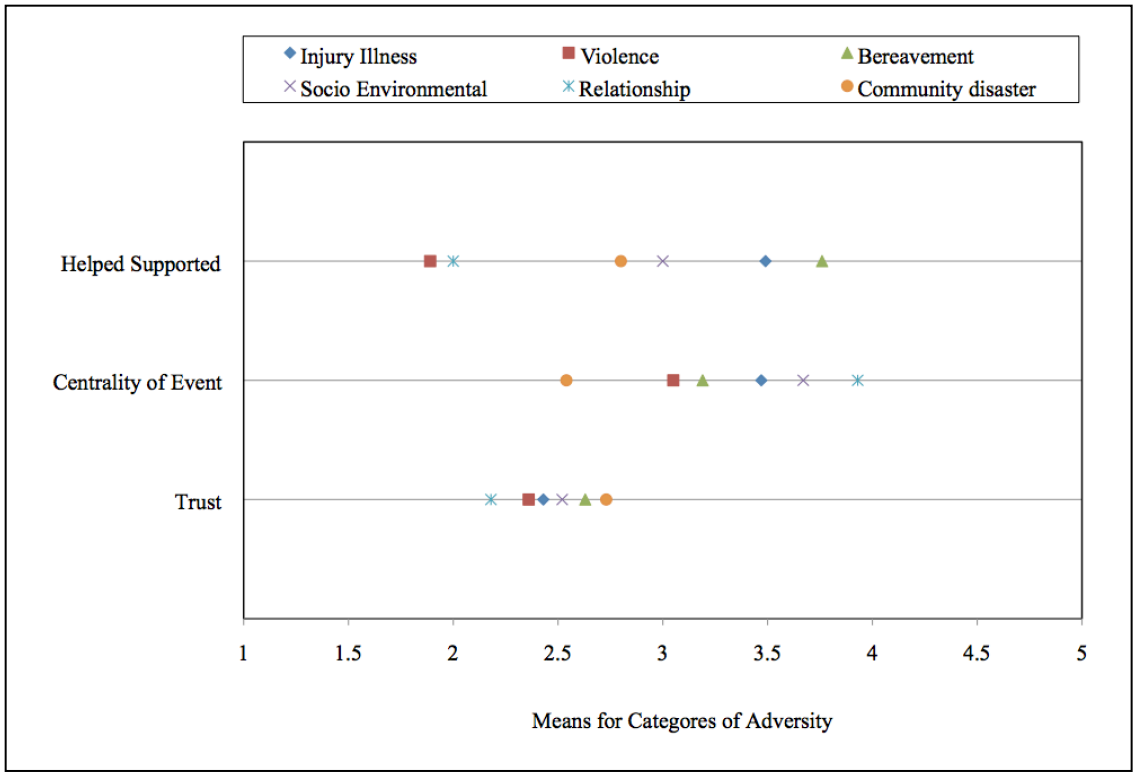


Figure 1. Mean scores of variables "Helped Supported", "Centrality of Event" and "Trust" by categories of adversity.

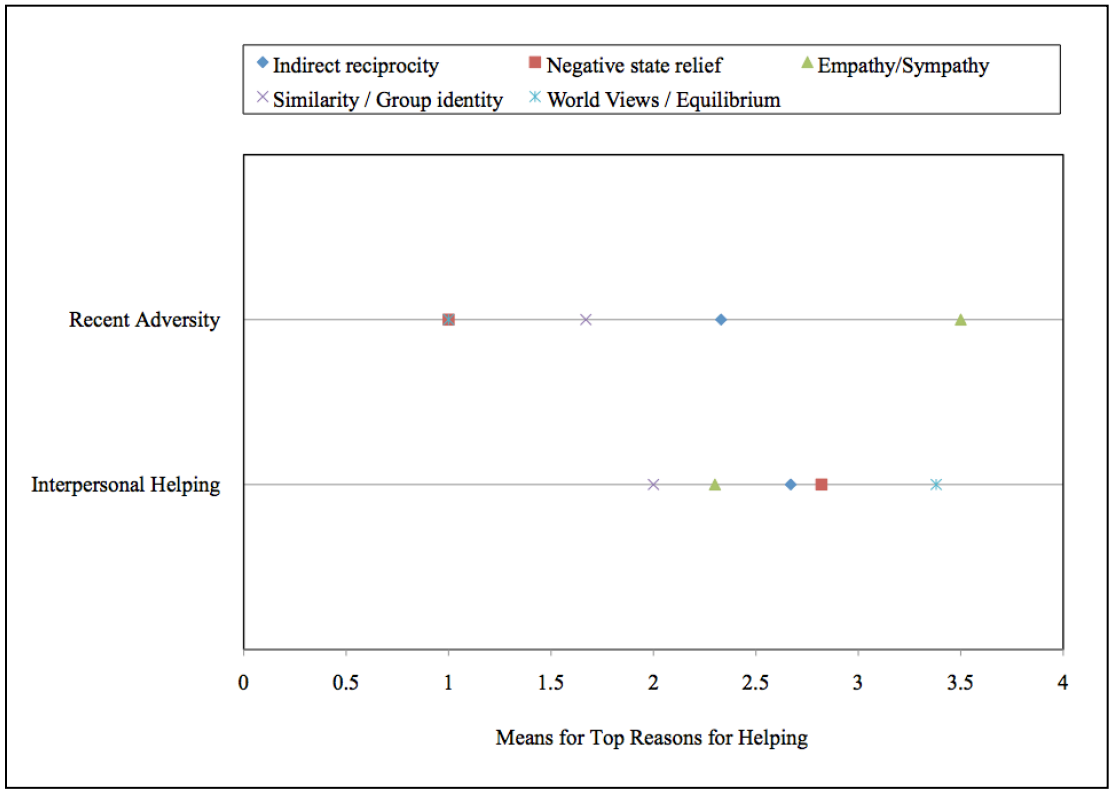


Figure 2. Mean scores of variables "Recent Adversity" and "Interpersonal Helping" by Primary Reasons for Helping.

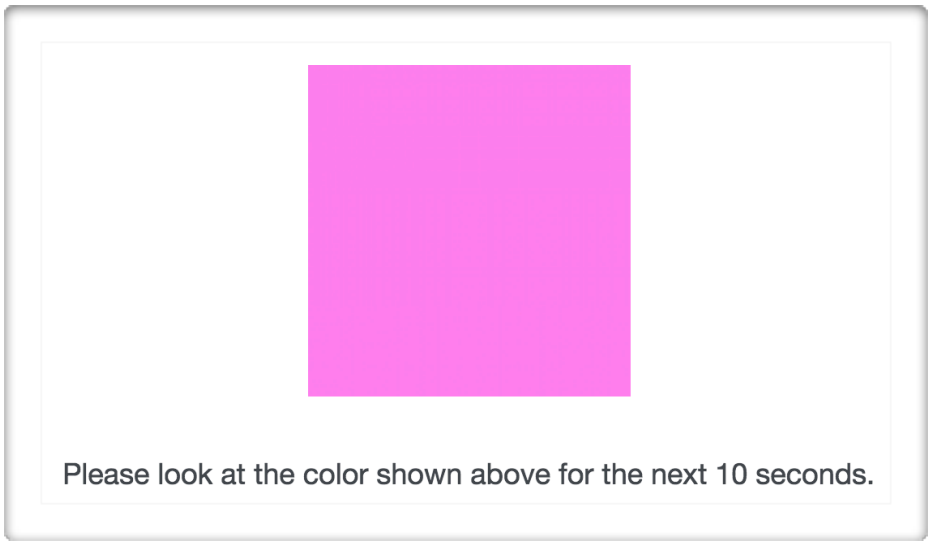
Appendix A

The setup of Room B

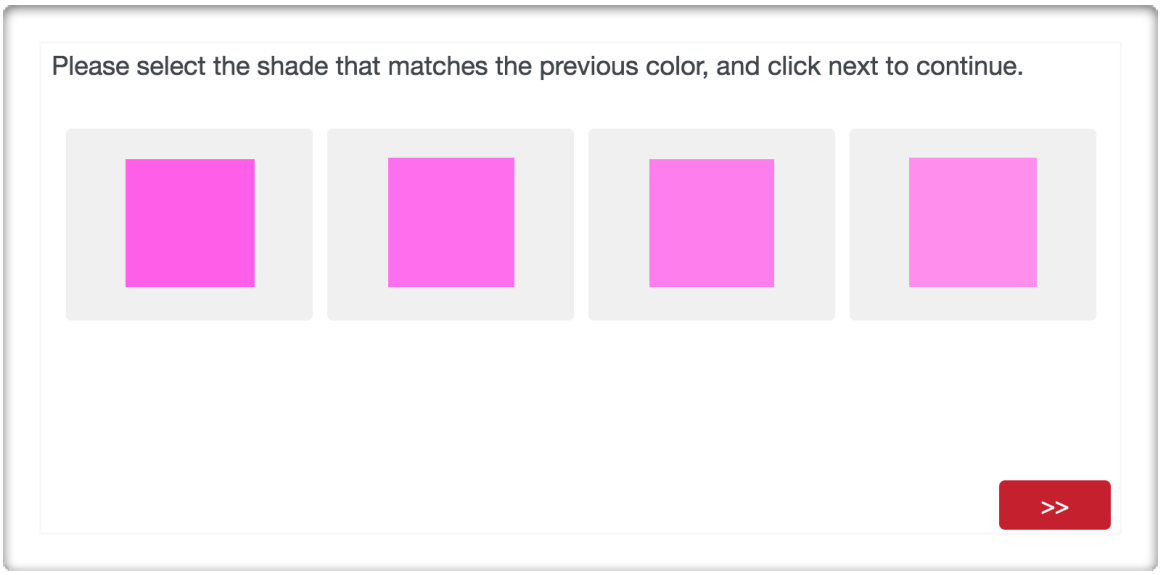
Appendix B

An Example of the Color Task

1. Participant looks at the color as for 10 seconds, at which point the “Next” button appears.



2. After clicking “Next”, the participant selects the matching shade.



Appendix C

The Complete List of Adverse Life Events

The list of adverse events was modified from the scale by Blum, Silver, and Poulin (2014) and used with permission.

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 someone touch or feel private areas of your body or touched/felt another's private areas under force or threat
34. Had sexual relations under force or threat
35. Had an unwanted pregnancy
36. Had a miscarriage
37. Had an abortion
38. Other event, specify
39. Other event, specify

Appendix D

Items in Categories of Adverse Life Events

Items in the categories of adverse events were modified from the scale by Blum, Silver, and Poulin (2014) and used with permission.

Injury/Illness

Suffered a serious accident or injury
Serious accident or injury of a loved one
Suffered a serious illness
Serious illness of a loved one
Witnessed family member injured or killed
Witnessed someone (other than a family member) being injured or killed

Violence

Been physically attacked or assaulted
Been coerced with threats of harm to yourself or your family
Had combat experience
Been physically harmed as a child (hit hard enough to leave a bruise or mark, kicked, burned, etc.)
Witnessed violence between your parents as a child
Been hit or pushed by your partner/spouse
Had someone touch or feel private areas of your body or touched/felt another's private areas under force or threat
Had sexual relations under force or threat

Bereavement

Death of your mother
Death of your father
Death of your brother or sister
Death of your grandparent
Death of your friend
Death of your spouse/partner
Death of your child

Social/Environmental Stress

Experienced serious financial difficulties (i.e., no money for food or shelter)
Lived in dangerous housing or neighborhood
Been discriminated against because of your ethnicity, religious background, or sexual orientation

Been exposed to dangerous chemicals or biological agents

Relationship
Experienced forced separation from family/children
Got divorced yourself
Experienced your parents' divorce
Were neglected (as a child) by your parent(s)
Been shamed, embarrassed, or told repeatedly that you are "no good"
Had an unwanted pregnancy
Had a miscarriage
Had an abortion

Community Disaster
Experienced a major fire, flood, earthquake, or any natural disaster in your community
Suffered a loss in a major fire, flood, earthquake, or any natural disaster in your community
Experienced a tragedy or disaster in your community caused by people (a shooting, bombing, etc.)
Suffered a loss in a tragedy or disaster in your community caused by people (a shooting, bombing, etc.)

Appendix E

The Steps to Helping Questionnaire

1. Did you notice that something had occurred?

Yes (e.g. I heard an unusual noise; I heard the researcher call out.)

No (e.g. I didn't really hear or notice anything.)

2. Did you think that the occurrence required some sort of action?

Yes (e.g. I thought someone should do something; someone should check what happened; the researcher should explain what happened.)

No (e.g. I figured everything was OK; I thought I should focus on my task.)

3. Did you take responsibility for checking what happened or offering assistance?

Yes (e.g. I thought I should do something.)

No (e.g. I figured the researcher knows what she's doing.)

4. Did you decide how to offer or provide assistance?

Yes (e.g. I knew what I should do; I thought I should check what happened; I thought I should offer assistance if needed.)

No (e.g. I didn't know what I should do; I didn't think there was anything I could do.)

5. Did you offer or provide any assistance? (For example calling out to see whether you are needed, knocking on the door to check the experimenter is OK, going into the other room to offer assistance or any similar action.)

Yes, I did.

No, I didn't.

Appendix F

Reasons for Helping Options

Indirect reciprocity

"When I suffered in the past, people helped me. I feel the need to pay it forward."

Negative state relief

"When I think someone is suffering, I feel bad inside. The only thing that makes me feel better is to help them."

Empathy/Sympathy

"I understand what it's like to experience suffering, and I want to help others avoid or escape suffering."

Similarity / Group identity

"People who are suffering have to help each-other, because we understand each other, and we're stronger as a group."

World Views / Restoring Equilibrium

"When bad things happen and cause suffering, I want to help because then I can make sure that good things happen too."