

Prosocial Reactions to Traumatic Experiences

by

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A Thesis submitted to the Faculty of Graduate Studies of

The University of Manitoba

in partial fulfilment of the requirements of the degree of

MASTER OF ARTS

Department of Psychology

University of Manitoba

Winnipeg, MB

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Abstract

When will people empathize with and help others? The goal of this research was to determine whether a prosocial orientation results from experiencing trauma. Recent research suggests there may be positive consequences to suffering. Under certain conditions, such as when people experience post-traumatic growth, past suffering can lead to personal benefits. Building on this body of research, one aim of this thesis was to investigate the impact of subjective traumatic suffering and psychological distress on post-traumatic growth and empathy. The second aim of this research was to examine whether objective trauma severity predicts post-traumatic growth. Finally, the third aim of this research was to examine the relationship between post-traumatic growth and empathy and the simultaneous impact of these variables on a prosocial orientation. Study 1 assessed these aforementioned relationships and Study 2 included a manipulation of post-traumatic growth and a behavioural outcome measure of prosocial behaviour. Structural equation models for Study 1 and 2 indicated that subjective traumatic suffering and objective trauma severity positively predicted post-traumatic growth, and post-traumatic growth positively predicted empathy. In turn, empathy positively predicted several prosocial outcomes. Thus, empathy mediated the link between post-traumatic growth and a prosocial orientation. In contrast to subjective traumatic suffering, psychological distress was unrelated to post-traumatic growth and negatively predicted empathy. Study 2 further indicated that focusing on one's growth in regards to trauma resulted in greater post-traumatic growth scores, but the manipulation had no direct impact on empathy or a prosocial orientation. The current findings have important social and clinical implications.

Acknowledgements

This research was supported by a Joseph-Armand Bombardier Canada Graduate Master's Scholarship (SSHRC) and a Manitoba Graduate Scholarship. First and foremost, I thank my Master's co-advisors, Dr. Katherine Starzyk and Dr. Corey Mackenzie for their dedication, mentorship, and guidance. I also thank my committee members, Dr. Jessica Cameron and Dr. Andrew Woolford for their valuable input throughout the process. Finally, I thank my loved ones for their continued support.

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Dedication

I dedicate this thesis to my sister. She endured significant trauma and subsequently transformed pain and suffering into a prosocial orientation. She is a survivor and a true inspiration.

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Prosocial Reactions to Traumatic Experiences

What do Nelson Mandela, Mother Teresa, and the Dalai Lama have in common? They have all experienced significant personal trauma and/or major intergroup conflict and have transformed this pain and suffering into selfless human compassion and prosocial behaviour. Prosocial behaviours are acts that benefit others, can entail a risk to oneself (Twenge, Baumeister, DeWall, Ciarocco, & Bartels, 2007), and are important for positive interpersonal, group, and intergroup interactions. Committed members of organizations such as Mothers Against Drunk Driving (MADD) also exemplify this transformation. People such as this likely have a prosocial orientation defined by prosocial attitudes and values (i.e., prosocial personality), self-reported behaviours (e.g., volunteerism), and prosocial reactions (e.g., providing help to others).

Aims of this Thesis

There has been a long history of interest in determining why people act prosocially (e.g., Batson & Coke, 1981; Hornstein, Fisch, & Holmes, 1968; Penner, 2002; Schroeder, Penner, Dovidio, & Pillavin, 1995). Previous research has primarily examined specific instances of helping behaviour and the positive roots of prosocial actions (e.g., Eisenberg, Damon, & Lerner, 2006; Weiss, Boyer, Lombardo, & Hitch, 1973). Building on this, the current research aimed to examine the relationship between the experience of trauma and a prosocial orientation and to explore possible reasons for this relationship. Specifically, Study 1 examined the impact of subjective traumatic suffering and psychological distress on post-traumatic growth and empathy. Additionally, Study 1 examined the impact of objective trauma severity on post-traumatic growth. Finally, Study 1 also examined the extent to which post-traumatic growth

predicts several prosocial outcomes (i.e., a prosocial orientation) and whether empathy explains these relationships. Building on Study 1, Study 2 additionally examined the effects of manipulating growth perceptions and included a behavioural prosocial outcome.

Prosocial Orientation

People who exhibit a prosocial orientation have a prosocial personality, volunteer, and provide help to others when needed. Eisenberg et al. (2002) suggested that people who have a prosocial personality have other-oriented values and cognitions and are more likely to experience sympathy and empathy. Similarly, Penner and colleagues (e.g., Penner, Dovidio, Piliavin, & Schroeder, 2005; Penner, Fritzsche, Craiger, Freifeld, 1995) have argued that a prosocial personality is defined by the experience of prosocial thoughts and feelings (e.g., experience cognitive and affective empathy) and self-perceptions of helpfulness and competence. Supportive of the argument that a prosocial orientation in part reflects personality characteristics, Eisenberg et al. (2002) found stability in reported helping behaviours and prosocial values and attitudes in young adults across a 5-year span. Prior research has found that people scoring high on prosocial personality are more likely to volunteer (Finkelstein, Penner, & Brannick, 2005; Penner, 2002), to exhibit helping behaviours that benefit others and do not result in personal gain (Penner et al., 2005), and/or to help others to maintain a positive image (e.g., Wedekind & Milinski, 2000) or to fulfill a personal need (e.g., Omoto & Snyder, 1995).

Suffering

This research investigated the role of suffering, as measured by traumatic suffering and psychological distress, on post-traumatic growth, empathy, and a prosocial

orientation. Suffering may manifest itself and be experienced in distinct ways for different individuals. For example, people may report distress when they reflect on their traumatic life experiences; I will refer to this form of suffering as *traumatic suffering* throughout. People may also experience *psychological distress* in the form of stress, anxiety, depression, and the like. In a pilot study (El-Gabalawy, Starzyk, & Mackenzie, 2010), I found that traumatic suffering and psychological distress were moderately and positively related. Thus, some individuals may suffer from a mental disorder and report suffering in regards to their personal traumas. This can be understood in the context of the diathesis-stress model. In the face of negative life circumstances, some individuals with a particular vulnerability, such as low self-esteem or a genetic factor, have fewer coping resources and have a higher susceptibility to suffering from psychopathology, namely, depression (Abramson, Metalsky, & Alloy, 1989; Beck, 1967; Hammen, 2005; Metalsky, Joiner, Hardin, & Abramson, 1993). Therefore in some instances, traumatic suffering may predispose one to experience psychological distress. However, I also found that people not experiencing any psychological distress sometimes reported significant traumatic suffering and, conversely, people experiencing psychological distress sometimes reported relatively little traumatic suffering (El-Gabalawy et al., 2010). Thus, traumatic suffering and psychological distress represent unique experiences and may have different relationships with post-traumatic growth, empathy, and a prosocial orientation.

Post-Traumatic Growth

Prior literature has primarily focused on the negative outcomes of experiencing traumatic events such as developing psychopathology including post-traumatic stress

disorder (American Psychiatric Association, 2000), or exhibiting suicidal behaviours (e.g., Breslau, Davis, & Andreski, 1995; Roy & Janal, 2005). However, focusing only on the negative aspects that result from experiencing trauma is a limited and biased perspective of post-traumatic reactions. In fact, the majority of individuals exposed to trauma do not exhibit pathological symptoms (Bonanno, 2004). There is a burgeoning body of research examining the unintended positive consequences that can follow traumatic life experiences. For example, many individuals are resilient and experience positive emotions and minor disruptions in their ability to function following trauma (Bonanno, 2004). These positive experiences subsequent to, and as a result of trauma, have been coined *post-traumatic growth* or stress-related growth (Calhoun & Tedeschi, 2006). This refers to an individual's experience of significant positive change which arises from the struggle with a major life crisis.

In understanding post-traumatic growth it is important to examine the factors that promote it and the outcomes associated with it. Tedeschi and Calhoun (1995) and Calhoun, Cann, Tedeschi, and McMillan (2000) emphasized that there is a necessary cognitive element that promotes post-traumatic growth related to the way one experiences and perceives past trauma. For example, Garnefski, Kraaij, Schroevers, and Somsen (2008) examined post-traumatic growth in patients with recent myocardial infarction and found that greater levels of post-traumatic growth were attributed to cognitive coping strategies such as positive refocusing, positive reappraisal, and putting the trauma into perspective. Staub (1979) also proposed that past suffering enables one to deeply understand another person's actual or potential suffering. A review on post-traumatic growth highlighted that it results in changes in relationships with others, the

perception of new possibilities, self-understanding, personal strength, spirituality change, and changes in one's philosophy of life, and appreciation for life (Tedeschi, Park, & Calhoun, 1998). Moreover, post-traumatic growth is associated with positive change and perceived personal growth (e.g., Helgeson, Reynolds, & Tomich, 2006; Linley & Joseph, 2004; Park & Helgeson, 2006). Thus, although altruism has been suggested as an outcome of post-traumatic growth (Tedeschi et al., 1998), prior research has primarily focused on the personal benefits that arise from experiencing trauma. It is less clear whether the experience of personal trauma can lead to other-oriented benefits. It may be, as Bloom (1998) suggested, that trauma can also be transformed into a community asset.

Empathy-Altruism Hypothesis

In understanding the motivations behind prosocial behaviour it is important to examine situational antecedents (Batson, 1991). Prosocial behaviour occurs in many contexts, but particularly when people experience *empathy* (Batson, 2002; Batson, Chang, Orr, & Rowland, 2002) and perspective taking (Batson, Eklund, Chermok, Hoyt, & Ortiz, 2007). Empathy and perspective taking are similar, but distinct constructs. Perspective taking refers to understanding another's point of view, thoughts, or feelings but does not necessarily lead one to experience empathy (Batson, Fultz, & Schoenrade, 1987; Staub & Vollhardt, 2008). In fact, it has been described as the cognitive aspect of empathy (Staub & Vollhardt, 2008). On the other hand, empathy refers to a congruent emotional response that elicits other-focused feelings as opposed to self-focused feelings (Batson et al., 1987). Batson and colleagues' widely supported empathy-altruism hypothesis proposed that empathy for a suffering person often arouses altruistic, helping behaviours (Batson et al., 2007; Batson, Duncan, Ackerman, Buckley, & Birch, 1981)

and is a crucial antecedent in many other prosocial contexts, such as volunteerism and community outreach (Davis, 1994; Penner et al., 2005). Therefore, if post-traumatic growth leads people to be more prosocial, it may be because people who experience post-traumatic growth are more likely to empathize with others.

Altruism Born of Suffering

The theory known as altruism born of suffering, first described by Staub (2003, 2005) in the context of major intergroup conflict and violence, suggested that prosocial behaviour may follow personal experiences of trauma. This theory proposed that altruism may be “born of suffering” when people reclaim meaning from traumatic life experiences, in part because people who experience trauma are more likely to experience empathy (Vollhardt, 2009). This theory suggested that empathy works as a motivational process that mediates the relationship between suffering and prosocial behaviour. In support, Staub and Vollhardt (2008) found that individuals who experienced intentional victimization, such as in the context of war and terrorism, exhibited more empathy and altruistic behaviours (e.g., volunteering) than people who reported no such suffering. Additionally, people who have experienced significant trauma, such as female rape victims, are more likely than women who have not had this experience to empathize with others who have experienced similar trauma (Barnett, Tetreault, Esper, & Bristow, 1986). The integration of principles from the aforementioned theoretical frameworks (e.g., post-traumatic growth, empathy-altruism hypothesis, and altruism born of suffering) sheds light on the processes behind a prosocial orientation. Together, they suggest that traumatic life experiences can elicit post-traumatic growth and empathy, which in turn promotes a prosocial orientation.

The Effects of Suffering on Post-Traumatic Growth

The relationship between post-traumatic growth and psychological distress is unclear. Some research suggests that psychological distress is unrelated to post-traumatic growth (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003). Conversely, a meta-analysis examining the relationships between benefit finding, an indicator of post-traumatic growth, and indices of distress, found that people who experienced more well-being and less depression reported more benefit finding (Helgeson et al., 2006). Conversely, measures of current anxiety, global distress (negative affect or mood), and quality of life were unrelated to benefit finding. As stressed by Park and Helgeson (2006), these inconsistencies may be due to differing methodologies. For example, studies were conducted over varying time frames and defined suffering in a variety of ways. However, if depression and well-being may be construed as indicators of psychological distress then these results suggest that psychological distress has a negative effect on post-traumatic growth. It is possible that psychological distress prevents people from perceiving or experiencing post-traumatic growth.

The aforementioned research suggests that psychological distress may be negatively associated to post-traumatic growth, but it does not speak to traumatic suffering. When post-traumatic growth was first proposed by Tedeschi and Calhoun (1995), they described it as growth arising in the context of highly stressful and traumatic events. However, it is unclear whether people can perceive post-traumatic growth while concurrently experiencing traumatic suffering. In support that people may perceive post-traumatic growth in the face of continued traumatic suffering, Helgeson et al. (2006)

found that people who experienced *more* intrusive-avoidant thoughts reported more benefit finding (i.e., post-traumatic growth). If intrusive-avoidant thoughts can be construed as an indicator of traumatic suffering then this implies a positive relationship. Moreover, Calhoun et al. (2000) found that traumatic rumination was positively associated with post-traumatic growth. However, traumatic rumination in this context did not necessarily reflect traumatic suffering. Although some facets were related, several components of traumatic rumination such as trying to see the benefits from the event and trying to elicit something good from the event do not imply suffering. Conversely, Staub and Vollhardt (2008) reported that healing from trauma is an antecedent in the development of altruism born of suffering. They define healing as engaging in memories of painful past experiences and finding and creating meaning of these experiences. However, it is difficult to know whether healing defined in this way co-occurs with post-traumatic growth or remains an antecedent of post-traumatic growth. Additionally, Park, Cohen, and Murch (1996) found that positive reinterpretation and acceptance coping are positively related to post-traumatic growth, which suggests that post-traumatic growth may only occur in the absence of traumatic suffering. Taken together, the reviewed literature is inconsistent. However, the majority of research suggests that low levels of traumatic suffering may be related to high levels of post-traumatic growth. Thus, I hypothesized that both forms of suffering will be negatively related to post-traumatic growth. However, it is also possible that psychological distress and traumatic suffering will have different associations with post-traumatic growth.

Role of Trauma Severity on Post-Traumatic Growth

Unlike suffering, *trauma severity* refers to an objective assessment of the gravity of traumatic life experiences. Similar to the relationship between suffering and post-traumatic growth, it is also unclear whether a relationship might exist between trauma severity and post-traumatic growth. On the one hand, Tedeschi, Calhoun and Cann (2007) suggested that it is the subjective experience with trauma and the way people personally assign meaning to traumatic events that is a determinant of post-traumatic growth. Given this, one would expect observer-rated, “objective” trauma severity to be unrelated to post-traumatic growth. In addition, evidence from clinical practice lends support. For example, a diagnosis of post-traumatic stress disorder depends on one’s subjective experience with trauma as opposed to trauma severity (American Psychiatric Association, 2000). On the other hand, Maercker, Herrle, and Grimm (1999, as cited in Powell et al., 2003) found that objective characteristics of a traumatic event were positively related to post-traumatic growth. However, with the exception of the prior study, there is little evidence supporting this relationship. Taken together, prior research suggests that trauma severity should be unrelated to post-traumatic growth. The inconsistencies and missing elements in prior literature highlight the importance of measuring suffering in a variety of ways, such as psychological distress and traumatic suffering and including an assessment of objective trauma severity.

The Effects of Suffering on a Prosocial Orientation

The reviewed literature suggests that a prosocial orientation can stem from post-traumatic growth. As indicated, it is unclear how suffering affects the impact of post-traumatic growth, which has emerged because of prior trauma, on a prosocial orientation. It is possible, as hypothesized, that psychological distress and traumatic suffering may

counteract the hypothesized prosocial impact of post-traumatic growth. In support, Wakslak, Jost, Tyler, and Chen (2007), whose sample included undergraduate students, found that people who suffered from inward focused distress, defined by negative affect (i.e., existential guilt, anxiety, low satisfaction), were less likely to support social programs that helped the disadvantaged. However, outward focused distress such as sympathy was predictive of support. Similarly, Kahana, Harel and Kahana (1988) whose sample included Holocaust survivors, found that altruism was significantly and positively correlated with well-being. Alternatively, rather than counteracting the proposed positive impact of post-traumatic growth, suffering may propel people to engage in prosocial behaviour. They may do so temporarily to alleviate distress. This is the premise of the negative state relief model of helping (Cialdini, Schaller, Houliban, & Arps, 1987). Support for the negative state relief model has, however, been contradictory and several researchers have found little to no support for it (e.g., Carlson & Miller, 1987; Miller & Carlson, 1990).

The Effects of Suffering on Empathy

People who suffer from both trauma and psychological distress may act prosocially, but they are unlikely to do so because they may have difficulty experiencing empathy. For example, they are more likely to have egoistic (used to alleviate temporary distress) rather than altruistic motives for prosocial behaviour (e.g., Batson, O'Quin, Fultz, Vanderplas, & Isen, 1983). As aforementioned, empathy is a determinant for prosocial behaviour. In addition, people who suffer may be overwhelmingly self-focused rather than other-focused in order to conserve emotional, psychological, and physical resources for coping. Depression in particular has been described as a "preoccupation

with the self” (Northhoff, 2007). When an individual suffers from depression it is difficult to shift this self-focus to other-focus (Northhoff, 2007). This self-focus includes low self-esteem, withdrawal, hopelessness, and negative cognitive styles (e.g., Allan & Gilbert, 1997; Haeffel et al., 2005; Orth, Robins, & Roberts, 2008). Thus, the experience of empathy and a “focus beyond the self” (Staub & Vollhardt, 2008) is important for a prosocial orientation. Current suffering defined by traumatic suffering and psychological distress is therefore more likely to be negatively related to post-traumatic growth and empathy, resulting in a decreased prosocial orientation.

Limitations of Prior Research

The reviewed literature on suffering, post-traumatic growth, empathy, and a prosocial orientation must be considered in light of some key limitations. First, prior post-traumatic growth research has focused on specific populations such as those who experienced a sexual assault (e.g., Frazier, Colon, & Glaser, 2001), cancer (e.g., Cordova et al., 2001), and HIV/AIDS (e.g., Siegel & Schrimshaw, 2000). There has also been a particular interest in prosocial reactions to specific events such as the terrorist attacks in New York on September 11th, 2001 (Skitka, Bauman, & Mullen, 2004; Yum & Schenck-Hamlin, 2005). Although post-traumatic growth occurs in many different contexts, there is limited research examining reactions to different types of traumatic experiences. In support of this, Staub and Vollhardt (2008) stressed that post-traumatic growth does not depend on the nature of events but rather how individuals interpret or appraise them. It is therefore important to focus on reactions to events as opposed to the nature of events. Focusing on reactions to different forms of trauma will shed light on the processes behind the possible prosocial reactions in the post-trauma period.

Second, undergraduate students have been an understudied population with respect to post-traumatic growth research (Park & Helgeson, 2006). However, prior research has found that an estimated 67% to 86% of students have experienced or witnessed traumatic events (Marx & Sloan, 2003), and that this sample is comparable to the general population in terms of experience with trauma (Vrana & Lauterbach, 1994). It is therefore important to examine undergraduate students when investigating prosocial outcomes of post-traumatic growth, as a large portion of this population has been exposed to traumatic events.

A third limitation is related to the general paucity of research on prosocial behaviours resulting from post-traumatic growth. Although altruism has been proposed as a possible outcome of experiencing trauma (Tedeschi et al., 1998), post-traumatic growth literature has not specifically focused on prosocial behaviours. Instead, research has focused on personal benefits that arise from post-traumatic growth such as perception of new possibilities, self-understanding, new dimensions of personal strength, and appreciation for life (e.g., Tedeschi et al., 1998). Moreover, to date, altruism born of suffering has only been investigated in the context of major intergroup conflict and war (Staub & Vollhardt, 2008).

Finally, there has been a scarcity of experimental designs in both post-traumatic growth and altruism born of suffering literature. This is surprising given the large body of experimental research examining prosocial and helping behaviours in other contexts. However, as stressed by Vollhardt (2009), this is likely due to methodological limitations in conducting experimental studies on trauma and because of ethical considerations. Moreover, experimental investigation has not yet been undertaken because the altruism

born of suffering theory was only recently proposed. Park and Helgeson (2006) stressed the importance of experimental conditions in post-traumatic growth research by noting that these will shed light on processes by which growth arises.

Summary of Hypotheses

The current study aimed to examine the relationships among suffering, post-traumatic growth, empathy, and a prosocial orientation in two studies using undergraduate student populations. This novel examination significantly adds to prior research on the topic as it addresses the aforementioned limitations. Study 1 used a correlational exploratory method to examine the relationships of traumatic suffering, psychological distress, and objective trauma severity to post-traumatic growth. In addition, it examined relationships of traumatic suffering and psychological distress to empathy. Study 1 further investigated the relationships of post-traumatic growth and empathy to a prosocial orientation. Based on the reviewed literature, I hypothesized that both traumatic suffering (hypothesis 1A) and psychological distress (hypothesis 1B) would negatively predict post-traumatic growth. In addition, I predicted that both traumatic suffering (hypothesis 1C) and psychological distress (hypothesis 1D) would negatively predict empathy. Thus, I hypothesized that high levels of traumatic suffering and psychological distress would be associated with low levels of post-traumatic growth and empathy. However, objective trauma severity would have no effect on post-traumatic growth (hypothesis 1E). Because of the objective nature of trauma severity it is unlikely that this will have any direct effect on empathy or a prosocial orientation. Thus, I did not investigate direct relationships between trauma severity and empathy and trauma severity and a prosocial orientation. I further predicted that post-traumatic growth would

positively predict empathy (hypothesis 1F) and empathy, the antecedent to prosocial behaviour, would positively predict several prosocial outcomes (i.e., a prosocial orientation) as a causal mediational pathway (hypothesis 1G). Specifically, high levels of post-traumatic growth would be associated with high levels of empathy, and high levels of empathy would be associated with elevated levels of prosocial outcomes (i.e., prosocial personality and volunteering). This hypothesized causal pathway is depicted in Figure 1. I did not expect a direct relationship between post-traumatic growth and a prosocial orientation.

Study 2 used an experimental design to examine similar research questions. Primary differences from Study 1 first included a manipulation of growth in regards to prior traumatic life experiences. Smyth, Hockemeyer, and Tulloch (2008) found that expressive writing significantly improved mood and post-traumatic growth in those who suffered from post-traumatic stress disorder. In addition, independent ratings of growth and focusing on cognitions and emotions in writing tasks were found to be associated with greater post-traumatic growth scores (Ullrich & Lutgendorf, 2002; Weinrib, Rothrock, Johnsen, & Lutgendorf, 2006). These studies provide rationale for the manipulation of growth post-trauma. Based on these findings, I hypothesized that when perceptions of growth in relation to trauma are manipulated (i.e., growth condition), the growth condition would be associated with higher post-traumatic growth scores (hypothesis 2A). I further hypothesized that the growth condition would positively predict empathy (hypothesis 2B) and greater self-reported prosocial attitudes (i.e., Social Responsibility; hypothesis 2C) than those who did not focus on growth (i.e., trauma condition). Additionally, the growth condition would positively predict helping a student

in distress (i.e., behavioural outcome measure described below; hypothesis 2D).

However, this would have no effect on long-term prosocial behaviours (e.g., helpfulness and volunteering; hypothesis 2E). Helpfulness and volunteering levels are derived from retrospective self-reports of a history of prosocial behaviours and therefore should not be temporarily influenced by high post-traumatic growth scores (see Figure 1).

Second, Study 2 included the addition of a behavioural outcome measure; participants had an opportunity to respond prosocially by helping a victim in distress through volunteerism. In line with Study 1, I hypothesized that traumatic suffering (hypothesis 2F) and psychological distress (hypothesis 2G) would negatively predict post-traumatic growth. Moreover, traumatic suffering (hypothesis 2H) and psychological distress (hypothesis 2I) would also negatively predict empathy. Thus, greater traumatic suffering and psychological distress would be associated with lower levels of post-traumatic growth and empathy. In addition, I hypothesized that post-traumatic growth would positively predict empathy (hypothesis 2J) and empathy would positively predict a prosocial orientation including helping a stranger in distress (hypothesis 2K). Specifically, higher post-traumatic growth scores would be associated with higher empathy scores. In addition, higher empathy scores would be related to higher scores on prosocial outcome variables and a greater likelihood of helping a student in distress. Empathy would therefore act as a mediator between post-traumatic growth and a prosocial orientation. These are in accordance with the primary hypotheses proposed in Study 1 (see Figure 1).

Study 1

Study 1 investigated the relationships among traumatic suffering, psychological distress, trauma severity, post-traumatic growth, empathy, and a prosocial orientation in a sample of undergraduate university students. This study addressed hypotheses 1A through 1H, specified above. Post-traumatic growth, empathy, and a prosocial orientation (i.e., Self-Reported Altruism, Social Responsibility, volunteer frequency, and volunteer duration) were examined using a variety of self-report measures. I assessed suffering by whether the individual currently suffers from psychological distress (i.e., high depression, anxiety, and chronic stress scores) and indicates traumatic suffering through a variety of self-report questions. Independent raters assessed trauma severity by objective ratings of the gravity of self-reported traumatic events.

To reiterate, in Study 1, I first predicted that psychological distress and traumatic suffering would negatively predict post-traumatic growth and empathy. However, trauma severity would have no effect on post-traumatic growth (hypothesis 1A through 1E). I further predicted that post-traumatic growth would positively predict empathy. Finally, empathy would positively predict a prosocial orientation (hypothesis 1F through 1H).

Method

Participants

Participants were 188 introductory psychology students (92 men, 96 women) from the University of Manitoba who were recruited for the “life experiences” online study. I made efforts to balance gender in this study. The majority of the sample consisted of single (95.2%), English-speaking (89.4%), White students (54.8%), who had completed high school as their highest degree (81.4%) and worked part-time (53.2%). The mean age was 19 years. Participants received two research participation credits

towards their Introduction to Psychology grade. Participants were treated in accordance with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans and were informed of their right to withdraw from the study at any time without reprisal or loss of experimental credit.

After completing all measures participants were asked, “To what extent did you provide honest and valid answers?”. A 7-point rating scale was used ranging from 1 (*not at all*) to 7 (*extremely*). A total of 10% of the sample ($n = 20$) were excluded from the analyses because they responded between 1 and 4 on the 7-point rating scale. The final sample included 168 undergraduate students (76 men, 92 women).

Procedure

Participants completed all study materials online by accessing the Survey Monkey survey site. No identifying information was stored with the responses. Participants had unlimited time to complete the study.

Participants filled out a variety of questionnaires in the order they appear below (see Appendix A). After completion, participants were asked to provide demographic information, were fully debriefed online, and were given the opportunity to sign-up for results.

Materials

Traumatic suffering. Participants had the opportunity to briefly describe up to five of their most traumatic life experiences. Following the description of each trauma, participants were asked seven self-report questions that assessed: (1) When the event occurred (i.e., “Please indicate how long ago [days, months, years] this traumatic event ended”), (2) subjective temporal distance of the event (i.e., “Past experiences may feel

quite close or far away, regardless of how long ago they actually occurred. Select a number that indicated how far away the traumatic life experience you described feels to you”), (3) duration of suffering (i.e., “How long did you feel emotional distress about this experience”), (4) current suffering (i.e., “How emotionally distressing is this experience now”), (5) closure (i.e., “Is this negative experience one that you have “closure” for”), growth (i.e., “Do you feel you grew as a person?”), and resentment (i.e., “Do you feel resentment because of what happened”; see Appendix A). I combined the mean of subjective distance, duration of suffering, current suffering, and closure from the event(s) to form the traumatic suffering variable. This technique accounted for the response variability in the number of questions, which was dependent on the number of brief descriptions of traumatic events the participant responded to (i.e., one through five). These questions were combined to create the traumatic suffering variable because of conceptual and statistical similarities. Specifically, responses to these questions were significantly and positively correlated. I found that the internal consistency of the resulting scale was equal to .84. In addition, I conducted a confirmatory maximum likelihood factor analysis, with a direct oblimin rotation ($\delta = 0$), which suggested that a one factor model fit well $\chi^2(2) = .52, p = .77$. Specifically, there was only one eigenvalue greater than one, all factor loadings were greater than .50, and the scree plot suggested a one factor solution.

Post-traumatic growth. The 21-item Post-Traumatic Growth Inventory (Tedeschi & Calhoun, 1996) assessed post-traumatic growth (see Appendix A). This scale yields a total score, in addition to five subscales. These subscales include: 1) Relating to Others (seven items), 2) New Possibilities (five items), 3) Personal Strength

(four items), 4) Spiritual Change (two items), and 5) Appreciation of Life (three items). A 6-point scale is used to rate items (e.g., “I established a new path for my life”; “knowing I can handle difficulties”) ranging from 0 (*I did not experience this change as a result of my crises*) to 5 (*I experienced this change to a very great degree as a result of my crises*). Although a variety of factor structures have been proposed, prior research has frequently used a one factor model for the Post-Traumatic Growth Inventory (e.g., Calhoun et al., 2000; Weinrib et al., 2006). Possible total scores can range from 0 to 105. The Post-Traumatic Growth Inventory was established using undergraduate university students and has been found to have good internal consistency, $\alpha = .90$, and acceptable test-retest reliability, $\alpha = .71$. In addition, prior research established construct validity by demonstrating that the scale significantly differs between those who have not experienced trauma to those who have (Tedeschi & Calhoun, 1996).

Prosocial personality. The 56-item Prosocial Personality Battery (Penner et al., 1995) assessed a prosocial personality. This scale includes seven factors: Social Responsibility, Empathic Concern, Perspective Taking, Other-Oriented Moral Reasoning, Mutual Concerns Moral Reasoning, Personal Distress, and Self-Reported Altruism. In the development of the original scale, Penner et al. (1995) included measures of empathy to account for this crucial mediational variable that is frequently identified as an antecedent of prosocial behaviour (e.g., Davis, 1994). Therefore the scale is composed of factors that assess both empathy and prosocial behaviour. However, I evaluated prosocial behaviour and empathy as distinct, separate variables in this thesis. Although participants completed all subscales on the Prosocial Personality Battery, I only used Social Responsibility and the Self-Reported Altruism factors in the analyses. These two

variables did not contain any items that appeared in prior empathy measures. High scores on Social Responsibility are indicative of a predisposition to feel responsibility and concern for others (e.g., “I wouldn't feel that I had to do my part in a group project if everyone else was lazy”). High scores on the Self-Reported Altruism factor are indicative of a history of being helpful (e.g., “I have given money to a stranger who needed it [or asked me for it]”). The Self-Reported Altruism factor represents an assessment of prosocial behavioural tendencies, while the Social Responsibility factor represents an assessment of thoughts and feelings. The Prosocial Personality Battery assesses items using a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*) for the Social Responsibility factor and a 5-point scale ranging from 1 (*never*) to 5 (*very often*) for the Self-Reported Altruism factor. Prior research has found that the alpha coefficients on both Self-Reported Altruism and Social Responsibility are greater than .80. The Prosocial Personality Battery has good convergent validity. For example, the scale has been found to be significantly related to volunteering measures and helping behaviours (Penner et al., 1995).

Empathy. The 28-item Interpersonal Reactivity Inventory (Davis, 1980; 1983) is a self-report measure that assesses four dimensions of empathy (see Appendix A): 1) Empathic Concern, a tendency to feel sympathy, compassion, concern for others (e.g., “I often have tender, concerned feelings for people less fortunate than me”); 2) Perspective Taking, the ability to take another's point of view (e.g., “I sometimes try to understand my friends better by imagining how things look from their perspective”); 3) Fantasy, a tendency to identify with characters in fictional works (e.g., “I really get involved with the feelings of the characters in a novel”) and; 4) Personal Distress, a tendency to become

upset and anxious when observing others in negative circumstances (e.g., “Being in a tense emotional situation scares me”). The construct validity is supported by correlations with similar empathy measures (e.g., Mehrabian and Epstein Emotional Empathy Scale and Hogan Empathy Scale; Davis, 1980), particularly with the Perspective Taking and Empathic Concern dimensions. Prior research has found that internal consistencies for the subscales are between .68 and .79 and test-retest reliabilities range from .61 to .81. The items were measured on a 5-point scale ranging from 1 (*not at all like me*) to 5 (*very much like me*). The Empathic Concern, Fantasy, and Perspective Taking factors were combined to create an empathy score. The decision to combine these factors was based on prior research that suggested a traditional empathy measure emerges using these three factors when conducting hierarchical analysis (i.e., Schmid-Leiman orthogonalization procedure; Pulos, Elison, & Lennon, 2004). Additionally, the personal distress factor has been found to be associated with depression (O’Connor, Berry, Weiss, & Gilbert, 2002), and personal distress as a theoretical construct has been described as being used to lessen one’s own distress (Staub & Vollhardt, 2008). Personal distress is also self-focused and distinct from empathy, which is other-focused. Therefore, personal distress was excluded from the analyses.

Psychological distress. The 21-item DASS21 (Lovibond & Lovibond, 1995) uses three subscales with seven items each to assess Depression (e.g., “I couldn’t seem to experience any positive feeling at all”), Anxiety (e.g., “I experienced trembling [e.g., in the hands]”), and the negative, emotional symptoms of Stress (e.g., “I found myself getting agitated”; see Appendix A). The items were measured using a 4-point scale ranging from 1 (*did not apply to me at all*) to 4 (*applied to me very much, or most of the*

time). The DASS21 has good overall reliability, $\alpha = .93$, and subscale reliability. Specifically, prior research has reported that the internal consistencies of the Depression, Anxiety, and Stress factors are equal to .88, .82, and .90, respectively. The DASS-21 has good convergent and discriminant validity when compared to other well-validated anxiety and depression measures (Henry & Crawford, 2005). The factors were combined to create an overall score of psychological distress. I performed a confirmatory maximum likelihood factor analysis, with a direct oblimin rotation ($\delta = 0$) to evaluate model fit for a one factor solution which suggested that a one factor model fit well. Specifically, only one eigenvalue was greater than one, all the factor loadings were greater than .50, and the scree plot displayed a one factor solution.

Volunteer frequency and duration. I assessed volunteer frequency by asking participants to indicate how much time they commit to volunteerism by answering one of five alternatives: 1) never, 2) between 1 and 3 days per month, 3) about 1 day per week, 4) several days a week, and 5) everyday. I assessed duration of service by asking participants to indicate if they volunteered for: 1) never, 2) less than 3 months, 3) between 3 and 6 months, 4) between 7 and 11 months, 5) between 1 and 2 years, and 6) longer than 2 years. Prior research has assessed volunteering in a similar fashion (e.g., Finkelstein et al., 2005). It is noteworthy that volunteering activity has been found to correlate with the Prosocial Personality Battery (Penner & Finkelstein, 1998; Penner, 2002) indicating similarities in these constructs.

Severity. The Psychiatric Epidemiological Research Interview (PERI; Dohrenwend, Krasnoff, Askenasy, & Dohrenwend, 1978) Life Events Scale was used to assess objective severity of traumatic experiences (i.e., trauma severity). The list

includes 102 positive, neutral, and negative life events. Only neutral and negative events were used to assess trauma severity which were associated with a score between 182 (e.g., “dropped a hobby, sport, craft, or recreational activity”) and 1,036 (e.g., “death of a child”; see Appendix A). The scale was developed on the basis of surveys of events actually experienced in various populations. Independent judges rated the life events and events that produced low reliability between judges were excluded from the analysis. This scale allows for the objective assessment of the average severity and impact of particular events. Two independent undergraduate raters acquired scores for each participant by matching reported traumatic events with the negative or neutral events listed on the PERI scale (Dohrenwend et al., 1978; see Appendix A). I performed an intraclass correlation and found that all initial ratings were above an alpha of .90. For all events that were disagreed upon, the independent raters came to a consensus and scored the traumatic event accordingly.

Results

Analyses for Study 1 were conducted using SPSS (Version 18.0) and AMOS (Version 18.0) software. Table 1 displays means and standard deviations for each of the primary variables in Study 1. All variables were normally distributed with the exception of volunteer duration and psychological distress which displayed a non-normal skew. Specifically, the psychological distress variable displayed a positive skew, with a higher proportion of individuals scoring lower on the DASS21 (i.e., lower psychological distress). Conversely, volunteer duration displayed a quadratic trend, where the majority of participants scored in the high and low range. Table 3 displays the correlation matrix for all primary variables.

I evaluated the relationships among subjective traumatic suffering, psychological distress, trauma severity, post-traumatic growth, empathy, and a prosocial orientation (i.e., Self-Reported Altruism, Social Responsibility, volunteer frequency and duration) using structural equation modeling. Although the structural model presented in Figure 2 did not include all the hypothesized relationships outlined above, of a variety of models I tested it was the most parsimonious and displayed the best model fit. For example, I also tested models defining prosocial orientation as a single factor and suffering as a single factor. Additionally, alternate pathways were examined such as the direct relationship of suffering to the prosocial orientation outcome variables. As aforementioned, all alternate models displayed poorer model fit. To evaluate model fit, I used the comparative fit index (CFI; Bentler, 1990), the root square error of approximation (RMSEA; Browne & Cudeck, 1992), and the test of close fit. These indices are advantageous when using smaller sample sizes (Fan, Thompson, & Wang, 1999). Generally, for CFI, values above .95 are considered a good fit. Fit values for RMSEA which range from .08 to .10 are considered marginal, values between .05 and .08 are acceptable, and values below .05 are considered excellent (Browne & Cudeck, 1992). Non-significance of the test of close fit provides evidence for good model fit. There was excellent fit of the structural equation model outlined below. Specifically, the CFI was equal to .96, the RMSEA was equal to .05, (90% CI: .001, .08), and the test of close fit was non-significant ($p = .56$). In terms of variance accounted for, results indicated that squared multiple correlations were equal to 0 for traumatic suffering and psychological distress, .12 for post-traumatic growth, .15 for empathy, .25 for Social Responsibility, .15 for Self-Reported Altruism, .03 for volunteer duration, and .07 for volunteer frequency.

I first hypothesized that traumatic suffering (hypothesis 1A; hypothesis 1C) and psychological distress (hypothesis 1B; hypothesis 1D) would significantly and negatively predict post-traumatic growth and empathy, respectively. Results indicated that traumatic suffering, $\beta = .29, p < .001$, positively predicted post-traumatic growth, but psychological distress was unrelated to post-traumatic growth. It is noteworthy, that model fit decreased with the inclusion of the additional pathway between psychological distress and post-traumatic growth. In addition, traumatic suffering positively predicted empathy, $\beta = .24, p = .025$, whereas psychological distress negatively predicted empathy, $\beta = -.19, p = .053$. I further predicted that objective trauma severity would be unrelated to post-traumatic growth (hypothesis 1E). Alternatively, results indicated that trauma severity, $\beta = .20, p = .005$, positively predicted post-traumatic growth. A correlation between traumatic suffering and psychological distress revealed a significant and positive correlation equal to $.34 (p < .001)$. However, a correlation between trauma severity and traumatic suffering was non-significant. Similarly, a correlation between trauma severity and psychological distress was also non-significant. In addition, when I included these pathways, model fit decreased. Although my hypotheses did not include direct relationships, they are worth noting. Specifically, there were no significant relationships when including pathways between psychological distress and a prosocial orientation and traumatic suffering and a prosocial orientation. When these direct relationships were included in the model, model fit also decreased.

Finally, I hypothesized that post-traumatic growth would positively predict empathy (hypothesis 1F) and empathy would positively predict a prosocial orientation (hypothesis 1G). It is noteworthy that the three indicators; empathic concern, perspective

taking, and fantasy, measured the latent variables of empathy adequately. Specifically the factor loadings were .85, .61, and .37, respectively. These three indicators of empathy are supported empirically in both the current study and prior research (Pulos et al., 2004). Mediation was evaluated using the MacKinnon, Lockwood, Hoffman, West, and Sheets (2002) method, which requires that three conditions be met to claim mediation. First, the independent variable must be related to the mediator (i.e., post-traumatic growth predicting empathy). Second, the mediator must be related to the dependent variable (i.e., empathy predicting a prosocial orientation). Finally, the mediator must be related to the dependent variable when including the independent variable in the model. Prior research has supported this mediation method using structural equation modeling (MacKinnon, 2008). These three conditions were met in the structural model in two conditions. First, results indicated that post-traumatic growth positively predicted empathy, $\beta = .25, p = .016$. Second, empathy positively predicted volunteer frequency, $\beta = .27, p = .014$, and Social Responsibility, $\beta = .52, p < .001$. However, empathy did not predict volunteer duration, $\beta = .18, p = .078$, and Self-Reported Altruism, $\beta = .11, p = .237$, though the signs of these paths were in the hypothesized direction.

When I examined intercorrelations among the prosocial orientation outcomes, results indicated that volunteer duration and volunteer frequency, $r = .57, p < .001$, volunteer duration and Self-Reported Altruism, $r = .26, p = .001$, and volunteer frequency and Self-Reported Altruism, $r = .22, p = .001$, significantly and positively correlated. However, volunteer frequency and Social Responsibility, $r = -.01, p = .868$, volunteer duration and Social Responsibility, $r = .03, p = .677$, and Self-Reported Altruism and

Social Responsibility, $r = .11$, $p = .186$, were unrelated (see Figure 2). These results suggest that Social Responsibility may be distinct from the other prosocial orientation outcomes. This may be due to the emphasis on prosocial thoughts and feelings in Social Responsibility which differs from self-reported behaviours such as Self-Reported Altruism and volunteerism.

Finally, when examining direct effects between post-traumatic growth and a prosocial orientation, results indicated that post-traumatic growth was unrelated to volunteering frequency and duration but negatively predicted Social Responsibility. However, post-traumatic growth positively predicted Self-Reported Altruism. These inconsistent results suggest that the direct effect of post-traumatic growth on a prosocial orientation is different from the indirect effect via empathy. Specifically, many of these associations are significant via empathy and the direct relationships between post-traumatic growth and prosocial outcomes are generally non-significant. However, when I excluded direct relationships between post-traumatic growth and the prosocial outcomes, model fit also decreased.

Study 2

In Study 2, I manipulated perceptions of growth in regards to prior trauma and included a behavioural outcome of prosocial orientation in addition to the measures used in Study 1. The manipulation of growth allowed for an investigation of the manipulability of the perceptions of positive change and the effect of this manipulation on post-traumatic growth, empathy, and a prosocial orientation. Including a behavioural outcome measure allowed for a broader understanding of prosocial reactions stemming from post-traumatic growth and empathy. In support, Hobfoll et al. (2007) suggested that

true, genuine growth only occurs when cognitive changes are put into action. Although these behavioural outcomes are partially captured in some of the prosocial orientation outcome variables assessed in Study 1 (i.e., Self-Reported Altruism and volunteering), the behavioural outcome allowed for a thorough investigation of prosocial responses. I excluded the assessment of the objective trauma severity from Study 2 because it was not of specific interest. Study 1 focused on the antecedents of post-traumatic growth, whereas Study 2 focused on the manipulability of post-traumatic growth and its outcomes.

Participants were presented with an adapted online experimental paradigm derived from research by Batson et al. (2007) on the antecedents of prosocial behaviour. These researchers specifically examined the role of valuing and perspective taking on empathic concern and helping behaviours. They used an experimental paradigm that presented participants with an opportunity to help another student in distress. Batson et al. (2007) randomly assigned participants to alternate paradigms based on valuing manipulations that provided additional information as to why the victim was in a vulnerable position to be hurt (i.e., why he was running late when he was hit by a car). The paradigm in the current study excluded the valuing manipulation and presented participants with a standard story, as described below.

To reiterate, in Study 2, I first hypothesized that manipulating growth by having participants focus on growth outcomes associated with their personal traumas (i.e., growth condition) would result in greater post-traumatic growth scores (hypothesis 2A) and empathy scores (hypothesis 2B). In addition, the growth condition would positively predict Social Responsibility (hypothesis 2C) and helping a student in distress

(behavioural outcome; hypothesis 2D). However, the growth condition would have no effect on long-term prosocial orientation outcome variables (i.e., Self-Reported Altruism and volunteering; hypothesis 2E) that are derived from retrospective reports of altruism.

In line with Study 1, I further hypothesized that traumatic suffering (hypothesis 2F; hypothesis 2H) and psychological distress (hypothesis 2G; hypothesis 2I) would negatively predict post-traumatic growth and empathy, respectively. Finally, I predicted that post-traumatic growth would positively predict empathy (hypothesis 2J) and empathy would positively predict a prosocial orientation including the behavioural helping outcome (hypothesis 2K).

Method

Participants

Participants were 187 introductory psychology students (89 men, 98 women) from the University of Manitoba. I also attempted to balance gender in this study. Based on the exclusion criteria outlined in Study 1, 19 participants (i.e., 10% of the sample) were excluded in Study 2. The final sample was equal to 169 (79 men, 89 female). Similar to Study 1, the majority of the sample consisted of single (90.5%), English-speaking (89.4%), White students (62.4%), who had completed secondary school as their highest degree (82.5%), and worked part-time (50.8%). The mean age was also 19 years.

Participants received one to two research participation credits towards their Introduction to Psychology grade. Research credits were dependent on whether they participated in an optional second component of Study 2. Participants were treated in accordance with the Tri-Council Policy Statement: Ethical Conduct for Research

Involving Humans and were informed of their right to withdraw from the study at any time without reprisal or loss of experimental credit.

Procedure

Participants were told that they would be participating in one study and after completion, would have the opportunity to participate in an unrelated study for an additional participation credit. Participants were told that the first study examined, “effect of past experiences on behaviour” and the second examined, “evaluation of university experiences”. Podsakoff, MacKenzie, Lee, and Podsakoff (2003) stressed the importance of psychologically separating variables in research by presenting them as different studies to reduce method variance.

Study 2: Part 1

Participants were randomly assigned to one of two conditions before beginning the study. Approximately half of the participants ($n = 96$) were randomly assigned to a trauma condition where they were asked to briefly describe up to five traumatic experiences (as in Study 1). Specifically, participants were asked to “briefly describe up to five of the most traumatic experiences you have ever experienced” (see Appendix A). The other half ($n = 93$) were asked to not only briefly describe up to five traumatic experiences, but additionally describe how they had grown from each of these negative life events (i.e., growth condition). Specifically, in the growth condition, participants were asked to “describe how you grew from the traumatic event described above and the lessons you learned as a result of the event. Focus on the positive outcomes of the traumatic experience” (see Appendix B). Participants then answered items relating to each traumatic experience that were administered in Study 1 (e.g., current suffering,

closure, growth). A factor analysis was also conducted in Study 2 using subjective distance, duration of suffering from the trauma, current suffering, and closure from the reported traumatic events to examine the factor structure of the traumatic suffering variable. I performed a confirmatory maximum likelihood factor analysis, with a direct oblimin rotation ($\delta = 0$), which suggested that a one factor model fit well, $\chi^2(2) = 3.296, p = .19$. Specifically, there was only one eigenvalue greater than one, all factor loadings were greater than .50, and the scree plot suggested a one factor solution. These results were consistent with the factor analysis conducted in Study 1. Participants continued by responding to the same measures that were included in Study 1. Specifically, traumatic suffering, post-traumatic growth, prosocial orientation, psychological distress, empathy, and experimental control measures were administered (see Appendix A).

Study 2: Part 2

In Part 2 of Study 2, participants were invited to participate in an unrelated study by Dr. Schmidt of the Student Wellness Office located at the University of Manitoba (Dr. Schmidt and the Student Wellness Office were both fictitious). I made efforts to ensure the second study appeared aesthetically different from Part 1 of Study 2. For example, the font, text colour, and formatting were different in the fictitious study in an attempt to reduce method variance. The participants were told that they would receive an additional credit for their participation, however, the decision to participate was optional. The participants read a fictitious informed consent explaining that many students experiencing a wide range of difficulties contact the Student Wellness Office for help. In addition, the fictitious purpose of the study was described at that time.

The Student Wellness Office wishes to know how typical the experiences of those students contacting the offices are of students at the University of Manitoba in general. Accordingly, among those students who have contacted the Student Wellness Office with difficulties, 20 were asked to write personal accounts of what they had been through.

Participants were then prompted to choose a number between 1 and 20 to be “randomly assigned” a student’s personal account (all participants received the same account). A personal account appeared on the computer screen, written by Terry Banks. The personal account began by describing that Terry was late for a 9:30 class:

I had just got off the bus and noticed this old woman in the middle of the sidewalk, just standing there holding a bag of groceries. She stopped me sort of wide eyed and confused and said she couldn’t find her house. She seemed really upset. We got things figured out but that took at least 5 minutes. I was really late for class now, so I started running. That’s when it happened, just as I was cutting between two parked cars to cross the street, I got hit. I never saw the car, and the driver didn’t see me. It all happened really fast. Anyways, it was pretty bad. Both my legs broke upon impact and I got a fairly severe concussion. As you can guess, I didn’t make it to class that day lol..... In fact, I haven’t been to class since. It’s impossible because I can’t really walk or use a wheelchair. The doctors say I won’t be able to get back up on campus for at least another 3 weeks, maybe more. I’m trying to keep up with my classes the best I can, but it’s really hard not being able to go to class or get on campus. I’m

really getting behind. If things don't get better, I think I'm going to have to drop out for this semester, which will really cause me problems in trying to get my degree on time.

Materials

Distracter items. Participants answered four questions assessing reactions to the personal account (e.g., “how great do you perceive this student’s need to be”; “How often would you say that the experience you read in the personal account occurs?”). These acted as distracter items and were in accordance with the fictitious purpose of the study (see Appendix B).

Prosocial personality. Similar to Study 1, the 56-item Prosocial Personality Battery (Penner et al., 1995) was used to assess a prosocial personality. The same two factors were used as in Study 1; Social Responsibility and Self-Reported Altruism. However, unlike Study 1, 17 items were created by independent graduate students at the University of Manitoba and were included in the Self-Reported Altruism scale. These additional items were included to increase the reliability of the factor (see Appendix B). Specifically, the internal consistency of the factor with the additional items was good with the Cronbach’s alpha being equal to .89. Excluding the created items, the Cronbach’s alpha of the original factor was equal to .80. The final version of the Self-Reported Altruism scale therefore included the additional items.

Behavioural prosocial outcome. After the completion of the study, participants had the opportunity to help Terry. Following the completion of all measures, a letter appeared online addressed to “participants reading Terry Banks’ personal account” and signed by Dr. Schmidt, the fictitious professor who was in charge of the second study

(see Appendix B). The letter first thanked participants and explained that the Student Wellness Office was unaware of Terry's debilitating situation and that they would not be able to offer Terry services because of being short-staffed. The participants then had the opportunity to "sign-up" to volunteer. If they indicated "yes", they were asked how many hours per week they would be willing to volunteer. The commitment capacity increased in increments of 0.5 hours. If they agreed, they were told they would be re-routed to an information page at the completion of the study to gather personal contact information.

Results

Analyses for Study 2 were also conducted using AMOS (Version 18.0) and SPSS (Version 18.0) software. Table 2 displays means and standard deviations for each primary variable used in Study 2. All the variables were normally distributed in the sample with the exception of volunteer frequency, duration, and psychological distress. Volunteer frequency and psychological distress were positively skewed, which indicates that a large proportion of the sample volunteered less frequently and had less psychological distress. Volunteer duration displayed a quadratic trend, with the majority of the sample having volunteered for a short time or a long time. Descriptive results further indicated that the means and distributions of the primary variables across the two studies were consistent. Table 4 indicates the correlations of all primary variables. Of the 169 participants that were included in Study 2 (i.e., were not omitted because of exclusion criteria), 116 (68.6%) chose to participate in the fictitious second study. Compliance may have been higher earlier in the year. Given that this study was conducted in late March, it is possible that the people who did not consent to participate had already obtained all their

required participation credits for the Introduction to Psychology course after completion of Part 1 of Study 2.

Similar to Study 1, in this study I evaluated the relationships among traumatic suffering, psychological distress, post-traumatic growth, empathy, and a prosocial orientation (i.e., volunteering, Self-Reported Altruism, Social Responsibility, and helping) using structural equation modeling. Of a variety of models that I tested, the one in Figure 3 fit the data best; CFI was equal to .92, RMSEA was equal to .08 (90% CI: .02,.08), and the test of close fit was non-significant ($p = .35$). In terms of variance accounted for, results indicated that squared multiple correlations were equal to 0 for traumatic suffering and psychological distress, .08 for post-traumatic growth, .15 for empathy, .16 for Social Responsibility, .08 for Self-Reported Altruism, .07 for volunteer duration, .04 for volunteer frequency, and .05 for helping Terry.

I first hypothesized that the growth condition would positively predict post-traumatic growth (hypothesis 2A). Results indicated that the manipulation (coded one = trauma condition, two = growth condition) positively predicted post-traumatic growth, $\beta = .15$, $p = .038$, so that post-traumatic growth scores were higher in the growth than trauma condition. I further hypothesized a direct, positive relationship between the growth manipulation and empathy (hypothesis 2B), Social Responsibility (hypothesis 2C), and helping Terry (hypothesis 2D), and no relationship between the growth manipulation and both Self-Reported Altruism and volunteerism (hypothesis 2E). The present model does not include these relationships because the growth manipulation had no direct impact on empathy or any of the prosocial outcomes and fit decreased when the model included these paths.

As in Study 1, I also examined the relationships between suffering, as measured by traumatic suffering and psychological distress, and post-traumatic growth, empathy and a prosocial orientation. First, I hypothesized that traumatic suffering (hypothesis 2F; hypothesis 2H) and psychological distress (hypothesis 2G; hypothesis 2I) would negatively predict post-traumatic growth and empathy, respectively. Results indicated that traumatic suffering significantly and positively predicted post-traumatic growth, $\beta = .24, p = .001$, whereas psychological distress was unrelated to post-traumatic growth. In addition, psychological distress negatively predicted empathy, $\beta = -.19, p = .038$. However, unlike Study 1, traumatic suffering was unrelated to empathy. A correlation that assessed the relationship between traumatic suffering and psychological distress revealed a significant and positive correlation, $r = .30, p < .001$.

Finally, I examined whether empathy mediates the relationship between post-traumatic growth and a prosocial orientation. I hypothesized that post-traumatic growth would positively predict empathy (hypothesis 2J) and empathy would positively predict a prosocial orientation including the behavioural helping outcome (hypothesis 2K). Indicators measured the latent variables of empathy adequately. Specifically, the factor loadings of empathic concern, perspective taking, and fantasy for empathy were .99, .45, and .34, respectively. Results indicated that post-traumatic growth significantly and positively predicted empathy, $\beta = .35, p = .004$, and empathy significantly and positively predicted the helping outcome, $\beta = .23, p = .042$, Self-Reported Altruism, $\beta = .23, p = .017$, and Social Responsibility, $\beta = .39, p < .001$. Although volunteer frequency, $\beta = .14, p = .114$, and volunteer duration, $\beta = .13, p = .130$, were non-significant, they displayed positive trends. Correlations among the outcome variables revealed that Self-

Reported Altruism and volunteer duration, $r = .20, p = .012$, volunteer frequency and volunteer duration, $r = .57, p < .001$, and Self-Reported Altruism and Social Responsibility, $r = .15, p = .055$, were significantly and positively related to one another. Conversely, helping and volunteer frequency, $r = -.01, p = .948$, helping and volunteer duration, $r = -.05, p = .581$, helping and Self-Reported Altruism, $r = -.06, p = .507$, and helping and Social Responsibility, $r = .04, p = .708$, were unrelated. In addition, volunteer frequency and Self-Reported Altruism, $r = .13, p = .09$, volunteer frequency and Social Responsibility, $r = .08, p = .284$, and volunteer duration and Social Responsibility, $r = .098, p = .210$, were not significantly associated. Results further indicated that when examining the direct effects between post-traumatic growth and a prosocial orientation only volunteer duration was significantly and positively related, whereas, post-traumatic growth and helping, volunteer frequency, Self-Reported Altruism, and Social Responsibility, respectively, were not. However, when excluding direct relationships between post-traumatic growth and the prosocial outcomes, model fit decreased.

General Discussion

This research aimed to investigate the causes of a prosocial orientation following the experience of trauma. I accomplished this in four objectives across two studies. First, I examined the relationship of traumatic suffering, psychological distress, and trauma severity (Study 1) with post-traumatic growth and the relationship of the suffering variables with empathy. Second, I examined whether post-traumatic growth predicted empathy. Third, I examined whether empathy predicted a prosocial orientation (volunteering, prosocial personality, and a behavioural outcome [Study 2]). Finally, in

Study 2, I examined the result of manipulating perceptions of growth in regards to trauma on post-traumatic growth, empathy, and a prosocial orientation.

First, results indicate that objective trauma severity and traumatic suffering were significantly and positively related to post-traumatic growth. Although this outcome contradicts my initial hypotheses, which predicted that trauma severity would be unrelated to post-traumatic growth and traumatic suffering would be negatively related to post-traumatic growth, theory and research support these findings. Both of these variables were associated with the trauma itself. Specifically, measurement of traumatic suffering was based on subjective interpretation of one's traumatic life experiences. Similarly, trauma severity represents an objective measure of trauma. By definition, an antecedent of post-traumatic growth is experiencing a highly stressful and traumatic event (Tedeschi & Calhoun, 1995). Accordingly, greater subjective traumatic suffering and trauma severity represent two facets of severe trauma itself and characterize a natural antecedent to post-traumatic growth which is in line with the theory behind the concept. Trauma severity in particular was based on retrospective reports of trauma and therefore represents a true antecedent. In addition, prior research suggested that recovery and healing involves acknowledging and engaging in painful memories from the past rather than avoiding them (Pennebaker, 2000; Staub, Pearlman, Gubin, & Hagengimana 2005) and traumatic rumination, which contains some facets of traumatic suffering, has been found to be related to greater post-traumatic growth scores (Calhoun et al., 2000). Further, a meta-analysis examining the relationship between post-traumatic growth and distress found that intrusive and avoidant thoughts are positively related to post-traumatic growth (Helgeson et al., 2006). These thoughts may be construed as an indicator of

traumatic suffering. Thus, it may be that traumatic suffering is related to cognitive processing and attempts to understand the event which promotes post-traumatic growth (Helgeson et al., 2006). In support, Staub et al. (2005) noted that the painful experiences stemming from past trauma can manifest themselves into positive change. A dose-response relationship has been discussed in prior research where greater doses of both subjective and objective facets of trauma are related to greater potential for post-traumatic growth (e.g, Powell et al., 2003). In support, greater subjective stressfulness associated with trauma (Park et al., 1996) and objective severity of trauma (Maercker et al., 1999, as cited in Powell et al., 2003) have been found to be positively associated with post-traumatic growth.

Second, results indicate that psychological distress was unrelated to post-traumatic growth and negatively related to empathy. This is consistent with prior research that has also found that current suffering, defined by depression, stress response symptoms, and post-traumatic symptoms, is unrelated to post-traumatic growth (Cordova et al., 2001; Powell et al, 2003). However, these researchers did not investigate the role of psychological distress on empathy. As aforementioned, empathy and, in turn, a prosocial orientation requires a focus beyond the self (Staub & Vollhardt, 2008). Psychological suffering, particularly depression, is self-focused as opposed to other-focused (Northhoff, 2007). Thus, as predicted, psychological distress was negatively related to empathy. Taken together, results suggest that traumatic suffering may be an antecedent and can co-occur with post-traumatic growth, whereas psychological distress may negatively affect empathy. The differences between traumatic suffering and psychological distress on post-traumatic growth and empathy along with the moderate

correlation between these variables suggest that although conceptually related, they reflect distinct constructs of suffering that behave differently in the structural model. Thus, on one hand, traumatic suffering increases the likelihood of prosocial behaviour whereas psychological distress decreases the likelihood of prosocial behaviour.

Third, results indicate that empathy mediated the relationship between post-traumatic growth and several prosocial orientation outcomes (i.e., volunteer frequency, Self-Reported Altruism, Social Responsibility, and helping behaviour). Although there were some minor differences between Study 1 and 2, empathy was positively associated with all of the prosocial outcomes, and significantly in most cases. Additionally, there were few direct effects between post-traumatic growth and prosocial orientation variables. Thus, the experience of post-traumatic growth is important in that it leads people to experience empathy. These results are supported by both the empathy-altruism model (Batson et al., 1981), where an empathic emotion elicits altruistic motivations, and altruism born of suffering (Staub, 2003), where prosocial behaviour is an outcome of personal suffering. These results are further supported by prior research that has found that prosocial outcomes and empathy stem from traumatic events (e.g., Barnett et al., 1986; Raboteg-Šaric, Žužul, & Keresteš, 1994). However, a specific examination of this relationship has been widely neglected. The current findings therefore significantly add to the paucity of prior research on the topic.

In both studies, empathy had the strongest relationship with Social Responsibility. It is worth noting that this association may be due to the overlap of the Social Responsibility factor from Penner's Prosocial Battery and the empathy measure. As aforementioned, the original scale was created from both prosocial and empathy items.

Although no empathy items appeared in the Social Responsibility factor, it is possible these two constructs are still related because of conceptual similarities. Alternatively, Social Responsibility was the only prosocial outcome that focused on prosocial thoughts and feelings as opposed to actions. It may be that the experience of post-traumatic growth and empathy has a stronger initial effect on prosocial thoughts and feelings compared to prosocial behavioural tendencies. Both studies also showed that empathy was not significantly associated with volunteer duration. This may also be a result of at least two reasons. First, volunteer duration represents a temporal prosocial behaviour with higher scores relating to volunteerism over a longer duration of time. Therefore this variable, in comparison to the other prosocial outcomes, may assess prosocial behaviour prior to the experience of trauma for some individuals. In fact, volunteer frequency, which represents a current assessment of volunteerism, was significantly and positively associated with empathy in Study 1 which suggests that these non-significant results may have been due to the way volunteer duration was defined. Second, volunteer duration displayed a quadratic trend. This may reduce the ability to detect a significant and positive relationship between empathy and volunteer duration when one may exist because of the difficulty of detecting non-linear relationships in structural equation modeling.

The current findings suggest that there are societal benefits (i.e., benefits to others) in addition to the benefits to oneself (Tedeschi et al., 1998) following the experience of traumatic life events. Staub and Vollhardt (2008) describe that helping others allows an individual to reclaim meaning in their own personal traumas. This can additionally elicit empathy and allow one to deeply understand another person's

experience with suffering or trauma (Staub, 1979). In fact, Tedeschi et al. (1998) theorized that the experience of trauma may represent “training” in empathy.

The final finding was that focusing on growth in regards to trauma elicited higher post-traumatic growth scores but had no effect on empathy or a prosocial orientation. This is in accordance with prior research that found that focusing on growth and cognitions in writing tasks is associated with greater post-traumatic growth scores (Ullrich & Lutgendorf, 2002; Weinrib et al., 2006). This finding suggests that although the manipulation of post-traumatic growth is possible, this has no direct effect on empathy and prosocial outcomes. However, the manipulation would have an indirect impact on empathy and prosocial behaviour through post-traumatic growth but it is unclear how long lasting this effect would be.

Limitations

The current studies must be considered in light of potential limitations. The first limitation is in regards to using an online methodology. Although this method did allow for a greater number of participants thereby increasing statistical power, it is possible that participants would have responded differently in a controlled setting. Specifically, a reporting bias may be present where participants are more influenced by environmental factors (e.g., distractions) than if they were in a structured environment. Moreover, a small number of participants were willing to volunteer to help Terry in Study 2. Perhaps the use of online methodology and the absence of social pressure contributed to this small subsample. However, in the current study, true altruistic behaviours were of interest rather than social conformity. In addition, the environmental control question likely reduced the possible bias. The second limitation is with respect to a possible illusory

perception of growth. Specifically, McFarland and Alvaro (2000) found that when thinking about traumatic experiences, in comparison to mild negative life experiences, people tend to exaggerate growth and improvement outcomes to alleviate distressing feelings. This is also in accordance with Taylor's (1989) cognitive adaptation model of victimization. Therefore, the self-report measures on post-traumatic growth and a prosocial orientation may have been influenced by illusory perceptions which stemmed from discussing traumatic life events in an attempt to avoid distress. However, it is noteworthy that the current research measured enduring and retrospective reports of prosocial behaviour (e.g., volunteerism) which may not be as modifiable as prosocial reactions to specific events. In addition, trauma severity and traumatic suffering were not directly related to the prosocial outcome variables suggesting that these variables were not directly affected. A third limitation is in regards to the statistical methodology. Although there are several benefits to using structural equation modeling to evaluate the relationship among variables, there are also some limitations. For example, MacCallum and Austin (2000) noted that when evaluating mediation using structural equation modeling one must be aware that there are several possible models that may fit the data. These authors suggested testing out several model configurations using the variables of interest. When a variety of models were tested, the models used in the current studies represented the best statistical fit, were parsimonious, and were in line with theoretical assumptions. In addition, the replication of the first study increased the validity of the model. Finally, it is difficult in cross-sectional research to evaluate the role of pre-existing prosocial orientation that is maintained through trauma. It is possible that pre-existing altruism may allow one to be more empathic and thus more prosocial following a

traumatic experience. However, to assess this possibility one would need to measure prosocial orientation prior to trauma in a stringent longitudinal design. In both studies, only conceptual causal relationships can be speculated and no concrete cause-effect conclusions can be made.

Despite these potential limitations, the current research has several theoretical and practical benefits. In particular, these novel research findings add to the paucity of research on altruism born of suffering by understanding in what contexts it exists. Practical benefits include a possible role in therapy settings in post-trauma rehabilitation or crisis counselling by understanding the effects of manipulating cognitions (e.g., growth) associated with past trauma or crises. Finally, it is noteworthy that the knowledge that past trauma can have positive consequences for individuals and society as a whole may be empowering to those who have had the misfortune of experiencing significant negative life events.

Future Prospects

The current findings suggest that empathy mediates the relationship between suffering and a prosocial orientation, however, alternate mediators have also been proposed in prior research. For example, Vollhardt (2009) theorized that prosocial behaviour stemming from traumatic experiences can also be a result of coping with the trauma, situational demands, and in-group categorization. Future research should aim to examine these other potential mediators and/or moderators and their effects on a prosocial orientation. In addition, a qualitative examination of these associations would be beneficial to understand differences in cognitive processing in regards to trauma through means of techniques such as interviewing. Finally, future research should

examine possible long term benefits of implementing growth perceptions on a continuous basis in those who have experienced significant trauma.

Conclusion

In summary, the current studies are the first to examine prosocial reactions to traumatic experiences and to integrate the role of suffering into this relationship using both self-report and behavioural measures. This investigation sheds light on the processes involved in a prosocial orientation in the post-trauma period. This integration of both social and clinical psychological principles not only adds to the burgeoning body of research on the topic but also has practical implications. It is of the utmost importance to understand the mechanisms behind helping others after a period of trauma to find ways to promote this type of behaviour.

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Table 1

Participant Characteristics for Study 1

Primary Variable	Mean	Standard Deviation	Range
Suffering			
Traumatic suffering	4.6	1.6	1-10
Psychological distress	34.4	24.7	0-120
Trauma severity	392.0	110.7	182-1,036
Post-traumatic growth	56.8	21.7	0-105
Empathy	54.2	10.9	21-105
Prosocial Orientation			
Self-reported altruism	2.7	0.6	1-5
Social responsibility	3.4	0.4	1-5
Volunteer frequency	2.0	0.8	1-5
Volunteer duration	3.7	2.1	1-6

Note. Range indicates theoretical range.

Table 2

Participant Characteristics for Study 2

Primary Variable	Mean	Standard Deviation	Range
Suffering			
Traumatic suffering	4.5	1.5	1-10
Psychological distress	34.7	23.0	0-36
Post-traumatic growth	61.0	22.8	0-105
Empathy	52.2	10.5	21-105
Prosocial Orientation			
Self-reported altruism	2.8	0.5	1-5
Social responsibility	3.3	0.4	1-5
Volunteer frequency	1.9	0.8	1-5
Volunteer duration	3.4	2.1	1-6

Note. Range indicates theoretical range.

Table 3

Correlation matrix of measured variables in Study 1

Scale	1	2	3	4	5	6	7	8	9
1.Traumatic Suffering	-	.34***	-.02	.28***	.23**	.12	.13	.12	.06
2.Psychological Distress		-	.05	.17*	-.04	.01	-.12	.11	-.16*
3.Trauma Severity			-	.20**	.00	-.03	.03	-.04	.05
4.PTG				-	.21**	.02	-.05	.37***	-.08
5.Emathy					-	.19*	.12	.14	.39***
6.Volunteer Frequency						-	.59***	.23**	.11
7.Volunteer Duration							-	.24**	.14
8.Self-Reported Altruism								-	.11
9.Social Responsibility									-

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4

Correlation matrix of measured variables in Study 2

Scale	1	2	3	4	5	6	7	8	9
1.Traumatic Suffering	-	.30***	.24**	-.09	.11	.01	.14	-.10	.10
2.Psychological Distress		-	.12	-.06	-.06	-.12	.06	-.16*	.02
3.PTG			-	.22**	.13	.24**	.18*	.15*	.00
4.Empathy				-	.19*	.21**	.23**	.37***	.08
5.Volunteer Frequency					-	.59***	.18*	.15	.01
6.Volunteer Duration						-	.26***	.16*	-.04
7.Self-Reported Altruism							-	.24**	-.02
8.Social Responsibility								-	.09
9.Helping									-

Note. *p < 0.05, **p < 0.01, ***p < 0.001

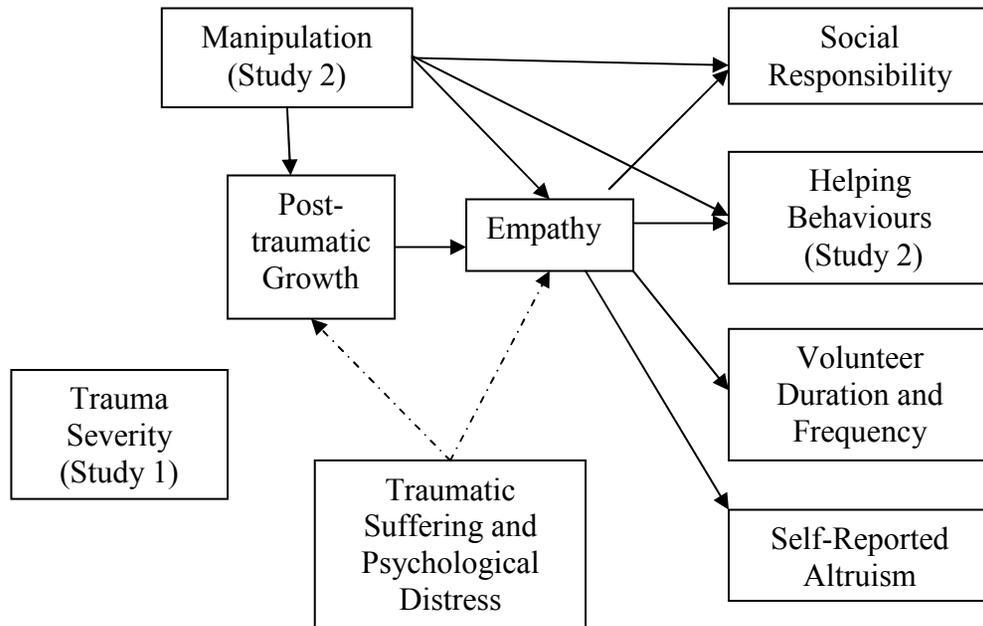


Figure 1. Hypothesized causal pathway from trauma to a prosocial orientation. Black lines indicate a hypothesized positive relationship, dashed lines indicate a hypothesized negative relationship, and no line indicates an unrelated hypothesized relationship.

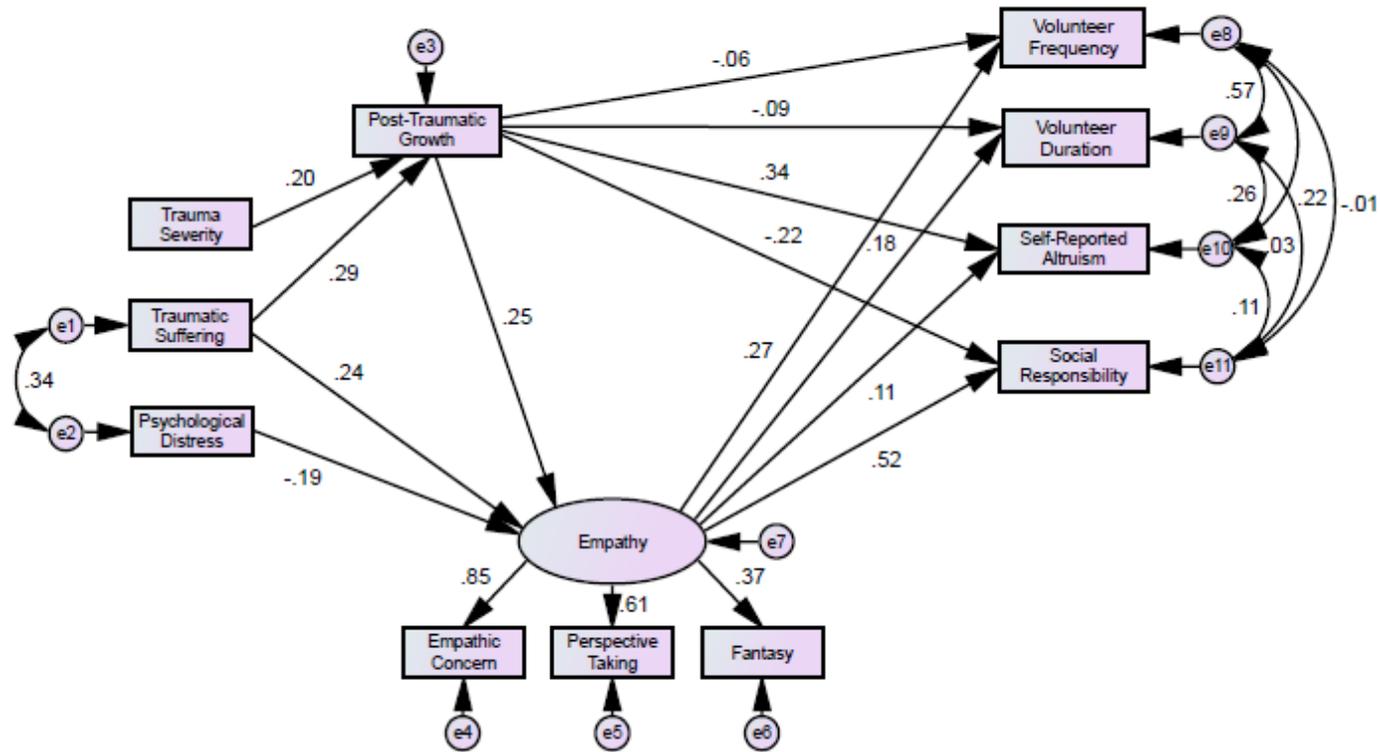


Figure 2. Structural equation model for Study 1. Numbers represent Beta's. The CFI was equal to .96, the RMSEA was equal to .05, (90% CI: .001, .08), and the test of close fit was not significant ($p = .56$).

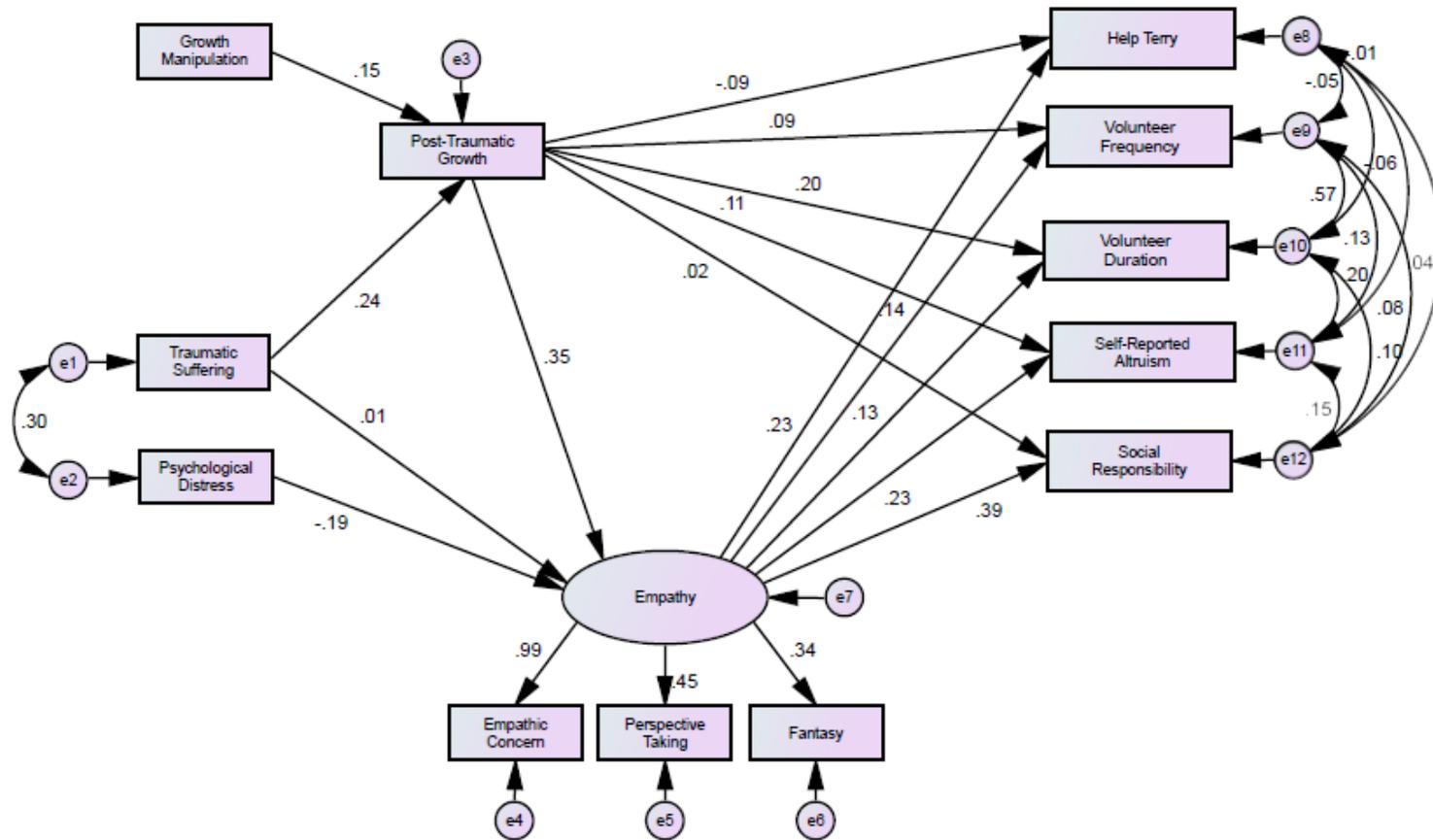


Figure 3. Structural equation model for Study 2. Number's represent Beta's. The CFI was equal to .92, RMSEA was equal to .08 (90% CI: .02,.08), and the test of close fit was not significant ($p = .35$).

Appendix A: Traumatic Suffering

Note. I only included publicly available measures in the appendices.

In this study we first want to get a sense of your prior life experiences. Please take a few minutes to think about your life and recall the traumatic life experiences you may have had. What makes a life experience traumatic? It depends on the person, but in general such experiences are very emotionally distressing. These traumatic experiences may have been brief or lasted a long time.

You'll have the opportunity to *briefly* describe up to 5 of the most traumatic experiences you have ever experienced. You might have difficulty recalling traumatic experiences if you haven't had very many or it might be quite easy if you've had many such experiences or are currently having a significant traumatic life experience.

In the blank below, please *briefly* describe the first traumatic life experience you have had that comes to mind. Please make sure to describe only one traumatic experience in the blank below. Remember that we will treat your responses with the utmost care; they are confidential and *your name will not be linked with your responses.*

If you cannot think of another traumatic experience, please move on (will appear on page 2, 3, 4, and 5).

Please indicate how long ago (years, months, days) this traumatic event ended.

Days Ago:

Months Ago:

Years Ago:

Past experiences may feel quite close or far away, regardless of how long ago they actually occurred. Select a number that best indicates how far away the traumatic life experience you described *feels* to you.

<i>Feels like yesterday</i>									<i>Feels very, very far away</i>
1	2	3	4	5	6	7	8	9	10

How long did you feel emotional distress about this experience? Using the scale below, please rate how long the emotional distress lasted (or has lasted) from this event.

<i>Very, very short time</i>									<i>Very, very long time</i>
1	2	3	4	5	6	7	8	9	10

How emotionally distressing is this experience now? Using the scale below, please rate how emotionally distressing this traumatic life experience is now.

<i>Not at all distressing</i>									<i>Very, very distressing</i>
1	2	3	4	5	6	7	8	9	10

Is this negative experience one that you have “closure” for? You have closure if you currently understand the event and you think of it as settled or behind you (over and done with; you do not think about it on a regular basis). Using the scale below, please rate how much closure you have for this traumatic experience.

<i>Complete closure (over it)</i>									<i>No closure at all (still relevant)</i>
1	2	3	4	5	6	7	8	9	10

Do you feel you grew as a person (e.g., learned a valuable lesson) from this traumatic experience?

<i>No, not at all</i>									<i>Yes, a great deal</i>
1	2	3	4	5	6	7	8	9	10

Do you feel resentment because of what happened?

<i>No, not at all</i>									<i>Yes, a great deal</i>
1	2	3	4	5	6	7	8	9	10

Post-traumatic Growth Inventory

Indicate for each of the statements below the degree to which this change occurred in your life as a result of your crises.

0 (*I did not experience this change as a result of my crises*), 1 (*I experienced this change to a very small degree*), 2 (*I experienced this change to a small degree*), 3 (*I experienced this change to a moderate degree*), 4 (*I experienced this change to a great degree*), to 5 (*I experienced this change to a very great degree as a result of my crises*)

1. My priorities about what is important in life.
2. An appreciation for the value of my own life.
3. I developed new interests.
4. A feeling of self-reliance
5. A better understanding of spiritual matters.
6. Knowing that I can count on people in times of trouble.
7. I established a new path for my life.
8. A sense of closeness with others.
9. A willingness to express my emotions.
10. Knowing I can handle difficulties.
11. I'm able to do better things with my life.
12. Being able to accept the way things work out.
13. Appreciating each day.
14. New opportunities are available which wouldn't have been otherwise.
15. Having compassion for others.
16. Putting effort into my relationships.
17. I'm more likely to try to change things which need changing.
18. I have a stronger religious faith.
19. I discovered that I'm stronger than I thought I was.
20. I learned a great deal about how wonderful people are.
21. I accept needing others.

Interpersonal Reactivity Index

The following statements inquire about your thoughts and feelings in a variety of situations. For each item, indicate how well it describes you by choosing the appropriate letter on the scale at the top of the page: A, B, C, D, or E. When you have decided on your answer, fill in the letter on the answer sheet next to the item number. Read each item carefully before responding. Answer as honestly as you can. Thank you.

Answer Scale:

A	B	C	D	E
<i>Does not describe me well</i>				<i>Describes me very well</i>

1. I daydream and fantasize, with some regularity, about things that might happen to me.
2. I often have tender, concerned feelings for people less fortunate than me.
3. I sometimes find it difficult to see things from the "other guy's" point of view.
4. Sometimes I don't feel very sorry for other people when they are having problems.
5. I really get involved with the feelings of the characters in a novel.
6. In emergency situations, I feel apprehensive and ill-at-ease.
7. I am usually objective when I watch a movie or play, and I don't often get completely caught up in it.
8. I try to look at everybody's side of a disagreement before I make a decision.
9. When I see someone being taken advantage of, I feel kind of protective towards them.
10. I sometimes feel helpless when I am in the middle of a very emotional situation.
11. I sometimes try to understand my friends better by imagining how things look from their perspective.
12. Becoming extremely involved in a good book or movie is somewhat rare for me.
13. When I see someone get hurt, I tend to remain calm.
14. Other people's misfortunes do not usually disturb me a great deal.
15. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments.
16. After seeing a play or movie, I have felt as though I were one of the characters.
17. Being in a tense emotional situation scares me.
18. When I see someone being treated unfairly, I sometimes don't feel very much pity for them.
19. I am usually pretty effective in dealing with emergencies.
20. I am often quite touched by things that I see happen.
21. I believe that there are two sides to every question and try to look at them both.
22. I would describe myself as a pretty soft-hearted person.
23. When I watch a good movie, I can very easily put myself in the place of a leading character.
24. I tend to lose control during emergencies.

25. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.
26. When I am reading an interesting story or novel, I imagine how I would feel if the events in the story were happening to me.
27. When I see someone who badly needs help in an emergency, I go to pieces.
28. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

DASS21

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 (*Did not apply to me at all*)

1 (*Applied to me to some degree, or some of the time*)

2 (*Applied to me to a considerable degree, or a good part of time*)

3 (*Applied to me very much, or most of the time*)

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3

Volunteer Frequency and Duration

We would like to now get a sense of your past and current volunteering experiences. The volunteer position may have been very brief (e.g., 1 day) or over a long period of time (e.g., a couple years). A volunteering position is considered a service that an individual provides in which they do not receive any sort of compensation (e.g., money). Please indicate below how much time you spend volunteering and the length of service from the pull down menus.

Please indicate how often you volunteer (*Never, Between 1 and 3 days per month, About 1 day per week, Several days a week, and Every day*).

Please indicate the length of time you have been volunteering for? (*Never, Less than 3 months, Between 3 and 6 months, Between 7 and 11 months, Between 1 and 2 years, and Longer than 2 years*).

List of Neutral and Negative Life Events from PERI Scale

School

Changed schools or training programs
Had problems in school or in training program
Failed school, training program
Did not graduate from school or training program

Work

Returned to work after not working for a long time
Changed jobs for a worse one
Changed jobs for one that was no better and no worse than the last
Had trouble with a boss
Demoted at work
Found out that was *not* going to be promoted at work
Conditions at work got worse, other than demotion or trouble with boss
Laid off
Fired
Took on a greatly increased work load
Suffered a business loss or failure
Sharply reduced work load
Retired
Stopped working, *not* retirement, for an extended period

Love and Marriage

Engagement was broken
Relations with spouse changed for the worse, without divorce or separation
Married couple separated
Divorce
Marital Infidelity
Trouble with in-laws
Spouse died

Having Children

Became pregnant
Birth of a second or later child
Abortion
Miscarriage or stillbirth
Found out that cannot have children
Child died
Started menopause

Family

New person moved into the household
Person moved out of the household
Someone stayed on in the house after he was expected to leave
Serious family argument other than with spouse

A change in the frequency of family get-togethers

Family member other than spouse or child dies

Residence

Moved to a worse residence or neighbourhood

Moved to a residence or neighbourhood no better or no worse than the last

Unable to move after expecting to be able to move

Lost a home through fire, flood, or other disaster

Crime and Legal Matters

Assaulted

Robbed

Accident in which there were no injuries

Involved in law suit

Accused of something for which a person could be sent to jail

Lost driver's license

Arrested

Went to jail

Got involved in a court case

Convicted of a crime

Didn't get out of jail when expected

Finances

Took out a mortgage

Foreclosure of a mortgage or loan

Repossession of car, furniture, or other items bought on the installment plan

Took a cut in wage or salary without a demotion

Suffered a financial loss or loss of property not related to work

Went on welfare

Went off welfare

Did not get an expected wage or salary increase

Was not able to take a planned vacation

Dropped a hobby, sport, craft, or recreational activity

Pet died

Broke up with a friend

Close friend died

Miscellaneous

Entered the Armed Services

Left the Armed Services

Took a trip other than a vacation

Health

Physical illness

Injury

Appendix B: Growth Condition

Note. The following measures were administered in Study 2 in addition to the measures in Appendix A.

In this study we first want to get a sense of your prior life experiences. Please take a few minutes to think about your life and recall the traumatic life experiences you may have had. What makes a life experience traumatic? It depends on the person, but in general such experiences are very emotionally distressing. These traumatic experiences may have been brief or lasted a long time.

You'll have the opportunity to briefly describe up to 5 of the most traumatic experiences you have ever experienced. For each of your traumatic experiences, describe how you grew from the experience and the lessons you learned as a result of the experience. Focus on the positive outcomes of the traumatic experience. You might have difficulty recalling traumatic experiences if you haven't had very many or it might be quite easy if you've had many such experiences or are currently having a significant traumatic life experience.

In the blank below, please briefly describe the first traumatic life experience you have had that comes to mind. Please make sure to describe only one traumatic experience in the blank below.

In this blank please describe how you grew from the traumatic event described above and the lessons you learned as a result of the event. Focus on the positive outcomes of the traumatic experience. Remember that we will treat your responses with the utmost care; they are confidential and your name will not be linked with your response.

If you cannot think of a traumatic experience, please move on (will appear on page 2, 3, 4, and 5).

Distracter Items

In regards to the personal account you read:

How great do you perceive this student's need to be?

<i>Not great at all</i>									<i>Very, very great</i>
1	2	3	4	5	6	7	8	9	10

How much did you find yourself caring about the welfare of the student whose personal account you read?

<i>Did not care at all</i>									<i>Cared very, very much</i>
1	2	3	4	5	6	7	8	9	10

How typical is this student's experience?

<i>Not at all typical</i>									<i>Extremely typical</i>
1	2	3	4	5	6	7	8	9	10

How often would you say that the experience you read in the personal account occurs?

<i>Never</i>									<i>All the time</i>
1	2	3	4	5	6	7	8	9	10

Additional Items of Self-Reported Altruism Scale

Below are several different actions in which people sometimes engage. Read each of them and decide how frequently you have carried it out in the past. Click the bubble which best describes your past behavior. Use the scale presented below.

<i>Never</i>	<i>Once</i>	<i>More than Once</i>	<i>Often</i>	<i>Very Often</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>

-
57. I have helped an elderly or disabled person not expecting to get anything in return.
 58. I have cancelled a fun evening out to help someone.
 59. I have slowed down to let other drivers cut into my lane.
 60. I have filled in for a co-worker when I did not want to work.
 61. I have donated food or money to a food bank.
 62. I have shovelled someone else's walkway or driveway without being asked.
 63. I have cleaned up a mess that I was not responsible for.
 64. I have helped a stranger who was having car problems.
 65. I have returned a lost item (e.g., wallet, key, cellphone) that I found.
 66. I have helped return a lost dog or cat.
 67. I have stopped to help someone who looked hurt.
 68. I have let a stranger in need use my cell phone.
 69. I have helped friends with their problems even when I have been busy.
 70. I have done extra chores around the house when family/roommates have been overwhelmed.
 71. I have given up my seat on the bus for someone in need.
 72. I have helped a family member or friend move.
 73. I have made food for a sick friend or family member.

Behavioural Prosocial Outcome

ATTN: Participants Reading Terry Banks' personal account

Dear Participant,

Before creating this survey, we were unaware of Terry Banks' debilitating situation. Unfortunately, we cannot offer him our services at this time because we are currently very short-staffed. We have had significant difficulty recruiting volunteers for our offices as many students do not notice our flyers. We are writing to all participants who received Terry Banks' personal account to see if they would be willing to volunteer in some capacity. We want to make it very clear that your participation in this study by no means obligates you to volunteer. There are no negative consequences if you choose not to volunteer and you will still receive your participation credits.

Terry needs help getting back on schedule with his classes; there are a number of tasks that he needs help with. People who volunteer to help will have an opportunity to see what needs to be done and to choose a task. It is likely that Terry will need help until the end of term – for a few weeks. Please check off whether you are willing to volunteer to help Terry on a weekly basis, and for how much time per week. If you agree to volunteer, you will be re-routed to an information page following this study where you can indicate your personal contact information.

Thank you for your time.

Can you volunteer?

No.

Yes. Please specify how many hours per week (*30 min, 1 hr, 1.5 hours, 2 hours, 2.5 hours, 3 hours*)

Sincerely,

Gordon Schmidt, PhD
Student Wellness Office