

Psychological Trauma: Theory, Research, Practice, and Policy

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The purpose of this study was to assess the relation between trauma exposure and prosocial behavior. Undergraduate students ($N = 1,528$) completed online measures of prosocial behavior (both daily helping behavior and volunteering), lifetime trauma exposure, and 5 other known correlates (i.e., empathy, agreeableness, religiosity, extraversion, and gender) of prosocial behavior at Time 1. At Time 2, 2 months later, participants ($n = 1,281$) completed measures of trauma exposure between Time 1 and Time 2 (to identify individuals who experienced a trauma between Time 1 and Time 2; $n = 122$), prosocial behavior, event-related distress, and well-being. Individuals who had experienced more lifetime traumas engaged in more prosocial behavior, and lifetime trauma exposure explained additional variance in prosocial behavior after accounting for other known correlates. In addition, individuals who had experienced a recent trauma reported engaging in more daily helping behavior than a matched no-trauma comparison group ($n = 122$). Among recent trauma survivors, engaging in prosocial behavior was associated with greater well-being. Implications for research and practice are addressed.

Keywords: trauma, altruism, prosocial behavior, volunteering

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Research on trauma traditionally has focused on the negative sequelae of exposure to traumatic events, including depression, anxiety, and posttraumatic stress disorder (PTSD). Nonetheless, numerous studies now show that most people report that they have benefited in some way from exposure to a traumatic event (Helgeson, Reynolds, & Tomich, 2006). These self-reported benefits (often referred to as *posttraumatic growth*) typically include positive changes in one's sense of self (e.g., increased maturity), positive changes in one's relationships (e.g., increased closeness), and positive changes in spirituality or life philosophy (e.g., greater life meaning).

However, qualitative (e.g., Gillen, 2005) and anecdotal reports suggest that individuals who have experienced traumatic events frequently respond to those events by engaging in prosocial behavior. There are numerous examples of individuals for whom a

traumatic event led to the formation of a helping organization, such as Mothers Against Drunk Driving and the Susan G. Komen Foundation. A national parenting magazine has a regular column highlighting organizations started by parents, usually as a result of a traumatic event in their family. Nonetheless, the most popular measures of posttraumatic growth (e.g., the Posttraumatic Growth Inventory; Tedeschi & Calhoun, 1996) do not assess increases in prosocial behavior as an outcome of trauma.¹ In fact, a recent review concluded that, despite its importance, little research on prosocial behavior following trauma exists in the clinical literature on trauma or the social psychological literature on prosocial behavior (Vollhardt, 2009). For example, a recent 468-page edited volume on prosocial behavior did not contain any reference to trauma (Mikulincer & Shaver, 2010) and a literature search of articles in *Psychological Trauma* revealed no references to prosocial behavior or altruism. In the following sections, we briefly review key findings from the few studies that do exist on trauma exposure and prosocial behavior and the limitations of that research. We then describe the results of our study examining the relation between trauma exposure and different forms of prosocial

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¹ One exception is the Perceived Benefits Scale (McMillen & Fisher, 1998), which includes a subscale measuring increased compassion (e.g., "I am more caring toward others"). Studies using the Perceived Benefits Scale suggest that increased compassion is one of the most common forms of posttraumatic growth reported following various traumas (McMillen & Cook, 2003; McMillen & Fisher, 1998). However, this subscale assesses prosocial attitudes rather than prosocial behaviors per se.

behavior. In addition, we examine the relations between prosocial behavior and psychological distress and well-being.

Research on Trauma Exposure and Prosocial Behavior

Some research has examined prosocial behavior following collectively experienced traumas. For example, a few studies assessed prosocial behavior following the terrorist attacks on the World Trade Center on September 11, 2001, among individuals vicariously exposed to the events (i.e., mostly undergraduate students in areas not directly affected by the attacks). In these studies, 35–62% of the samples reported engaging in various helping behaviors, including donating blood and giving money to charitable organizations to help the 9/11 victims (Piferi, Jobe, & Jones, 2006; Schuster et al., 2001; Wayment, 2004; Yum & Schenck-Hamlin, 2005). In a study following another collective trauma (Hurricane Hugo), storm victims reported more helping behavior (e.g., providing groceries) than did nonvictims (Kaniasty & Norris, 1995).

The behaviors in these studies all involved helping others in the context of a specific event (i.e., terrorist attack or hurricane). However, other studies suggest that the experience of trauma can lead to a general increase in prosocial behavior. For example, children who had suffered through war in Croatia were rated by their teachers as engaging in more prosocial behavior (e.g., comforting and helping others) after the war than before the war, after taking age-related changes in prosocial behavior into account (Raboteg-Saric, Zuzul, & Kerestes, 1994). Similarly, some students in the Yum and Schenck-Hamlin (2005) study reported a general increase in helping behavior not specifically associated with helping the 9/11 victims (e.g., giving money to the homeless).

Studies of prosocial behavior following individually experienced traumas are less common. In one study, siblings of children with mental retardation were more likely to provide emotional support and custodial care for their siblings than were children whose siblings did not have mental retardation (Hannah & Midlarsky, 2005). However, it is unclear whether these children were acting as a result of trauma or whether they were simply assisting their parents by helping to care for their siblings as a matter of practical necessity. Other studies have found positive associations between trauma exposure and intentions to help following individually experienced traumas such as discrimination (e.g., Friedman & Leaper, 2010), although intentions may not lead to actions.

Why might individuals engage in prosocial behavior following traumatic events? Although there are many motivations for helping, one likely motivation is engaging in prosocial behavior following trauma to decrease one's own distress. In support of this hypothesis, three studies of vicarious victims of 9/11 found that those who reported more distress (e.g., more PTSD symptoms) were more likely to help others (Piferi et al., 2006; Schuster et al., 2001; Wayment, 2004). This theme was also illustrated in a qualitative study of individuals in New York who were more directly affected by the terrorist attacks on 9/11 (Steffen & Fothergill, 2009). In the Piferi et al. (2006) study, participants were asked directly about their motives for helping; personal distress was the most frequently mentioned motivation. However, other-oriented motivations (i.e., helping to decrease others' suffering) also were common and were the only category of motivation associated with sustained giving. Participants in other studies also have indicated that they engaged in prosocial behavior to help

others as well as to help themselves (Reeves, Merriam, & Courtenay, 1999; Steffen & Fothergill, 2009), especially as more time elapsed following the trauma. These motives are consistent with social psychological theory and research that helping behavior can be motivated by both altruistic (i.e., to benefit others) and egoistic (i.e., to benefit self) motives (e.g., Eisenberg, 2010).

Although this research suggests that people engage in prosocial behavior following traumas, these studies also are limited in several respects. First, as mentioned, most of the research on prosocial behavior following trauma has focused on collective traumas (e.g., terrorism). However, individually experienced traumas (e.g., life-threatening illness) are far more common than are collective traumas in the United States (Breslau et al., 1998). In addition, the motivations for helping others in the context of a collective trauma when everyone is suffering together likely differ from the motivations involved in helping another individual following one's own private suffering (Vollhardt, 2009). Thus, further research is needed on prosocial behavior following individual traumas. Second, almost all of the studies reviewed above focused on prosocial behavior following specific events. However, most individuals experience more than one traumatic event in their lifetime (Frazier, 2012). If trauma exposure does increase prosocial behavior, it is important to assess whether experiencing greater numbers of traumatic events is associated with greater levels of prosocial behavior. Third, many of the reviewed studies focused on helping in the immediate aftermath of an event, such as a hurricane. In this context, helping behaviors may be strongly influenced by situational demands rather than changes in values or motives associated with trauma exposure. Very few studies have assessed the longer term effect of traumas on general helping behavior. Fourth, few of the studies reviewed had nonvictim comparison groups to assess whether prosocial behavior was higher among trauma victims than among nonvictims. Finally, virtually all studies have relied on self-report measures of prosocial behavior following trauma exposure that explicitly linked the prosocial behavior to the trauma (e.g., "Did you help others following 9/11?"). Such methods may overestimate prosocial behavior owing to socially desirable responding.

In addition to the aforementioned methodological limitations, an important conceptual limitation is that none of these studies examined the relation between trauma exposure and prosocial behavior in the context of other known correlates of prosocial behavior. There is a great deal of research on factors associated with prosocial behavior that should be taken into account to understand the role of trauma exposure in predicting prosocial behavior (see Mikulincer & Shaver, 2010, for a review). Several theorists have focused on empathy as a correlate of prosocial behavior, such as research on the prosocial personality, which includes other-oriented empathy as a key component (Penner, Fritzsche, Craiger, & Freifeld, 1995) and research on the empathy–altruism hypothesis (Batson, 2010). Other-oriented empathy is strongly related to the Agreeableness dimension of the Big Five model of personality (Penner et al., 1995), which, in turn, is associated with prosocial behavior (see Penner, Dovidio, Piliavin, & Schroeder, 2005). Other research has demonstrated that religiosity (Penner et al., 2005), extraversion, and being female (e.g., Carlo, Okun, Knight, & de Guzman, 2005) are related to prosocial behavior, including volunteering.

It is important to note that some of these correlates of prosocial behavior may also be related to trauma exposure. For example, the most common positive life change reported by sexual assault survivors is increased empathy for others in similar situations (Frazier, Conlon, & Glaser, 2001; Frazier, Conlon, Steger, Tashiro, & Glaser, 2006). Trauma survivors also frequently report increases in religiosity or spirituality (Frazier et al., 2001, 2006; Tedeschi & Calhoun, 1996). Thus, without examining trauma exposure in conjunction with these other known correlates, it is impossible to tell whether it uniquely predicts prosocial behavior beyond the effects of these other variables with which it is related. Assessing the role of trauma exposure in motivating prosocial behavior in the context of these other variables can contribute to clinical research on responses to trauma and to social psychological research on prosocial behavior.

Current Study

Our study addressed these limitations in the following ways. First, we assessed exposure to a range of potentially traumatic events, rather than one specific event, including many individual (vs. collective) events, and examined the relation between the number of lifetime traumas experienced and prosocial behavior measured in terms of daily helping behaviors (over a 2-week period) and volunteer activities (over a 12-month period) at baseline (Time 1). Because these traumas were not recent, we could assess the longer term relations between trauma exposure and prosocial behavior. We also assessed whether individuals who had experienced a recent trauma (between Time 1 and Time 2, 2 months later) reported more prosocial behavior (daily helping behavior) at Time 2 than did a matched no-trauma comparison group. Second, to reduce the effects of socially desirable responding, our prosocial behavior measures were not linked to exposure to a specific traumatic event. Rather, in the context of a long questionnaire, participants completed several measures, including measures of trauma exposure and prosocial behavior. Third, we assessed five established correlates of prosocial behavior (i.e., gender, empathy, agreeableness, extraversion, and religious commitment) and assessed whether lifetime trauma exposure was associated with prosocial behavior after controlling for the effects of these other variables. We predicted that greater lifetime trauma exposure would be positively associated with prosocial behavior, that those who had experienced a recent trauma would report more prosocial behavior than a matched no-trauma comparison group, and that all the established correlates also would be positively associated with prosocial behavior. Because no other research of which we are aware has examined the role of trauma exposure in the context of these other variables, we did not formulate a specific hypothesis as to whether trauma exposure would be a unique correlate of prosocial behavior.

In addition to examining the relation between trauma exposure and prosocial behavior, we examined the relation between prosocial behavior and psychological distress and well-being in the group of recent trauma survivors and a matched comparison group. If prosocial behavior is engaged in to reduce distress, we would expect positive relations between measures of distress and prosocial behavior, as has been found in previous research (e.g., Wayment, 2004). Here, we examined only the relation between event-specific distress and prosocial behavior because these were the

only distress measures related to prosocial behavior in other studies (e.g., Wayment, 2004). However, given that prosocial behavior is associated with well-being (e.g., Mellor et al., 2008), we also expected positive relations between prosocial behavior and measures of well-being (i.e., positive affect, meaning in life, life satisfaction). No other studies of which we are aware have assessed the relations between prosocial behavior and positive well-being measures in trauma survivors. For comparative purposes, we report these relations for the no-trauma group as well. Finally, as another means of increasing our understanding of the role of trauma exposure in motivating prosocial behavior, we gathered qualitative data on whether participants' volunteer behavior was associated with a life event and, if so, how.

Method

Participants and Procedure

Participants were undergraduate students recruited from four large universities in the United States who completed online surveys at Time 1 (T1; $N = 1,528$) and approximately 8 weeks later at Time 2 (T2: $n = 1,281$; 84%) for extra credit in their psychology courses. Data were collected during the fall of 2006 (Cohort 1; $n = 742$) and the spring of 2007 (Cohort 2; $n = 786$). Most participants at T1 were between 18 and 21 years old (88%), female (73%), and self-identified as European American or White (80%). Similar to the T1 sample, the participants at T2 were mostly between 18 and 21 years old (89%), female (74%), and European American/White (82%). Participants completed a number of measures at each time point, some of which are not relevant to the current study and are not discussed here. The study was approved by the institutional review boards at all four universities.

Measures²

Daily helping behaviors. To assess daily helping behaviors at T1 and T2, participants responded to the following four questions developed for this study: "How many days in the past two weeks (0 to 14) have you engaged in each of the following behaviors? 1) Helped out someone in need, 2) Provided emotional support to someone, 3) Volunteered my time, and 4) Gave money to a person in need." We then calculated the total number of prosocial behaviors engaged in within a 2-week period (possible range = 0 to 56). We did not calculate internal consistency because these behaviors do not necessarily occur together.

Volunteer activities. A revised version of the Community Involvement Inventory (Bono, Snyder, & Duehr, 2005) was added to the survey for Cohort 2 at T1 to measure volunteer behaviors. The inventory contains 22 items assessing a broad variety of volunteer and civic activities that reflect community engagement. We chose nine of the items that reflected prosocial behavior rather than community participation (e.g., went to the movies). We received feedback on our list from students in an undergraduate

² The data analyzed here are part of a larger prospective study of the effects of trauma (see also Frazier, Anders, et al., 2009; Frazier et al., 2011; Frazier, Tennen, et al., 2009; Gunty et al., 2011; Kaler et al., 2008). Only measures relevant to the present analyses are described here.

applied psychology course and added nine items based on their feedback. Thus, the final list consisted of 18 volunteer behaviors. Sample questions included “Participated in a charity event (e.g., March of Dimes walk; Race for the Cure),” “Participated in political activities (e.g., campaign, rally),” “Volunteered with kids (e.g., Big Brother/Big Sister, after school program),” and “Volunteered for a faith-based organization (e.g., youth leader).” Participants indicated whether they had participated in each type of volunteer activity over the past 12 months (yes or no). The total score, which ranged from 0 to 18, reflected the number of different volunteer activities engaged in over a 12-month period.

If individuals reported any volunteer activity, we asked whether their involvement was related to a life event they had experienced. At T1, 20% of the Cohort 2 sample ($n = 138$) responded “yes” to this question. These respondents were asked to briefly describe how their involvement in their volunteer work related to that life event. All responses were reviewed by the first author and four categories of motivation were identified: negative life events, positive life events, reciprocity (i.e., someone helped me), and unclear. Two coauthors then coded each response into these four categories ($\kappa = .64$). Responses on which the coders disagreed were discussed until the coders reached consensus.

Correlates of Prosocial Behavior

Trauma exposure. To assess trauma exposure at T1 and T2, we used the Traumatic Life Events Questionnaire (Kubany, 2004), which consists of a list of 22 events (e.g., life-threatening illness) with an option to describe another traumatic event not on the list. Most events on the list meet the definition of a trauma in the diagnostic criteria for PTSD in the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text revision; *DSM-IV-TR*; American Psychiatric Association, 2000). Participants indicated whether they had experienced each event during their lifetime (T1) and in the 2 months since the first survey (T2). The T2 version of the survey did not contain five events that could not have happened between T1 and T2 (e.g., unwanted sexual contact before age 13). Twenty-one percent ($n = 264$) of the sample reported at least one event between T1 and T2. At both time points, participants indicated which event caused the most distress (if more than one was reported) and wrote a brief description of the most distressing event. At T2, participants also rated their worst event in terms of how much distress it caused them at the time it occurred (1 = *no distress* to 5 = *extreme distress*). Because we were interested in studying the effects of truly traumatic events, we excluded events at T2 that were rated as causing less than “considerable” distress (less than 4 on the 5-point distress scale; $n = 80$). We excluded 62 additional T2 events for various reasons. For example, 28 people mentioned the Virginia Tech shootings as a trauma they had experienced. Because that event happened to everyone during that time period, we did not count that as trauma exposure. Thus, the final trauma sample consisted of 122 participants (10% of the T2 sample) who reported a traumatic event between T1 and T2 that caused considerable to extreme distress. To form a matched comparison group, for each person in the trauma group, we identified a person who had not experienced a recent trauma, but who closely matched the trauma participant in terms of university attended, gender, age, ethnicity, and lifetime trauma history.

Empathy. The Interpersonal Reactivity Index (Davis, 1980) is a 28-item self-report questionnaire, consisting of four seven-item subscales, each of which assesses a specific domain of empathy. Items are rated on a 0 (*does not describe me very well*) to 4 (*describes me very well*) scale. The Empathic Concern scale was used at T1 to measure the tendency to experience feelings of warmth, compassion, and concern for other people (e.g., “I often have tender, concerned feelings for people less fortunate than I”). In previous research, the internal consistency reliability for scores on the Empathic Concern scale ranged from .70 to .72, and the test-retest reliabilities ranged from .70 to .72 (Davis, 1980). The alpha for our sample was .70.

Personality. At T1, participants rated how accurately 25 adjectives (e.g., *tense*) measuring the Big Five personality traits of Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism described them at the present time on 5-point scales (1 = *not true* to 5 = *very true*; Brody & Ehrlichman, 1997). Only the five-item Agreeableness and Extraversion scales were used in these analyses, which had alpha coefficients of .76 and .79, respectively, in a previous study (Kashdan & Steger, 2007). In the current study, the alpha coefficients were .85 and .78, respectively.

Religious commitment. The Intrapersonal Religious Commitment scale from the Religious Commitment Inventory (Worthington et al., 2003) consists of five items regarding the extent to which an individual has a religious orientation toward life (e.g., “I have spent time trying to grow in understanding of my faith”). At T1, items are rated on a 1 (*not true*) to 5 (*totally true*) scale. Scores on this scale have had good psychometric properties in previous research (e.g., Worthington et al., 2003). The alpha coefficient in our sample was .92.

Time 2 Distress and Well-Being Measures

PTSD symptoms. The PTSD Checklist—Specific Version (PCL-S; Weathers, Litz, Herman, Huska, & Keane, 1993) is a 17-item self-report measure consisting of items that assess the symptom criteria for a PTSD diagnosis according to the *DSM-IV-TR* (American Psychiatric Association, 2000). At T2, the trauma group responded to symptoms they had experienced in the past 2 weeks regarding their recent event (i.e., the event that happened between T1 and T2) on a scale from 1 (*not at all*) to 5 (*extremely*). The PCL-S has three subscales (Reexperiencing, Hyperarousal, and Avoidance), and a total score can be computed for a general index of PTSD symptoms. A recent study revealed strong support for the reliability and validity of scores on the PCL-S among college students (Adkins, Weathers, McDevitt-Murphy, & Daniels, 2008). The alpha coefficient for the total PTSD symptom severity scale for the trauma group in the current sample was .93. The cutoff for probable PTSD is a score of 50 or greater (Weathers et al., 1993). The diagnostic efficiency (i.e., the proportion correctly diagnosed) of that cutoff score has ranged from .74 to .96 in five studies (Lang, Laffaye, Satz, Dresselhaus, & Stein, 2003).

Positive affect. The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) consists of two 10-item scales that assess positive and negative affect. Each item consists of a single mood term (e.g., *excited*, *alert*). At T2, participants rated the degree to which they experienced each mood over the past 2 weeks on a scale from 1 (*very slightly or not at all*) to 5 (*extremely*). Scores on the PANAS have strong psychometric

properties (Watson et al., 1988). Only the Positive Affect scale was used in these analyses ($\alpha = .91$).

Meaning in life. Participants' perceptions that their lives were meaningful were assessed using the five-item Presence of Meaning subscale (e.g., "I have a good sense of what makes my life meaningful") from the Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006). Items are rated on a 1 (*absolutely untrue*) to 7 (*absolutely true*) scale. Alpha coefficients for this measure have ranged from .82 to .86 in previous research ($\alpha = .86$ in the current sample).

Life satisfaction. Participants completed the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), which measures how satisfied an individual is with his or her life. The SWLS consists of five items (e.g., "I am satisfied with my life") to which participants respond on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Previous research supports the reliability and validity of scores on the SWLS (Diener et al., 1985). The alpha in this sample was .91.

Results

Descriptive Data

All data were checked for outliers. Means and standard deviations for all T1 variables are included in Table 1. On average, the participants in our sample had experienced almost three traumatic events in their lifetime. The most common were the unexpected death of a loved one (47%), a life-threatening event experienced by a loved one (30%), and witnessing family violence growing up (23%). The mean score on the daily helping behavior scale at T1 indicated that over the past 2 weeks participants engaged in prosocial behavior about 15 times (i.e., a little more than once per day). The most common of the four helping behaviors were providing emotional support to someone (93% reported this at least once over the past 2 weeks) and helping someone in need (92%). The other behaviors were less common (donating money, 41%; volunteering, 52%). The mean score on the volunteer behavior scale indicated that participants had engaged in a little more than three volunteer behaviors over the past 12 months. The most common volunteer behaviors during the past year were donating money or

other material goods (55%), tutoring someone (41%), and participating in a charity event (39%).

Correlates of Prosocial Behavior at Time 1

Table 1 presents data on correlates of prosocial behaviors at T1. These data suggest, first, that individuals who reported more lifetime traumatic events reported engaging in more prosocial behaviors including both helping behavior in the past 2 weeks and volunteer behaviors over the previous 12 months. Second, all of the variables found to be associated with prosocial behavior in previous research (e.g., empathy) were associated with both helping behavior and volunteer activities in this sample, with correlations in the small to medium range, with the exception of the correlation between gender and volunteer behaviors. The relations between lifetime trauma exposure and prosocial behavior ($r_s = .16$ to $.23$) also were small to moderate and were similar to or greater than the relations between the other variables (e.g., empathy) and prosocial behavior ($r_s = .06$ to $.26$).

To assess whether trauma exposure explained variance in prosocial behavior beyond the effects of these other known correlates, we performed a hierarchical multiple regression analysis in which daily helping behaviors and volunteer activities were each regressed on the five established correlates in Step 1 and lifetime trauma exposure in Step 2 (see Table 2). In each equation, trauma exposure explained an additional small amount of variance in both daily helping behavior and volunteer activities beyond that explained by the other variables and was one of the strongest correlates of daily helping behavior. The bivariate correlation ($r = .23$) and beta coefficient ($\beta = .21$) estimating the relations between trauma exposure and daily helping behavior were very similar as were the correlation ($r = .16$) and beta coefficient ($\beta = .14$) for trauma exposure and volunteer activities, suggesting that the other five variables in the equation did not mediate the relation between trauma exposure and the two prosocial behavior measures.

Prosocial Behavior in Recent Trauma Survivors and a Matched Comparison Group

The most common worst traumatic events reported between T1 and T2 were a loved one experiencing a life-threatening accident,

Table 1
Correlates of Daily Helping Behavior and Volunteer Activities at Time 1

Variable	1	2	3	4	5	6	7	8
1. Daily helping behavior in past 2 weeks	—							
2. Volunteer activities in past 12 months ^a	.37***	—						
3. Number of lifetime traumas	.23***	.16***	—					
4. Female gender	.10***	.06	.10***	—				
5. Empathy	.23***	.16***	.10***	.22***	—			
6. Agreeableness	.26***	.12***	.06***	.21***	.56***	—		
7. Extraversion	.23***	.17***	.07***	.06**	.17***	.39***	—	
8. Religious commitment	.19***	.23***	.02	.02	.17***	.14***	.13***	—
Mean	15.46	3.56	2.79	—	3.74	4.11	3.69	2.17
SD	7.90	2.90	2.45	—	0.66	0.66	0.76	1.17

Note. $N = 1,528$.

^a $n = 782$.

** $p < .01$. *** $p < .001$.

Table 2
Hierarchical Regression of Daily Helping Behavior and Volunteer Activities on Lifetime Trauma Exposure, Controlling for Other Correlates of Prosocial Behavior

Variable	Daily helping behavior in past 2 weeks (<i>n</i> = 1,495)	Volunteer activities in past 12 months (<i>n</i> = 778)
Step 1		
Female gender	.02	.01
Empathy	.08**	.10*
Agreeableness	.13***	-.02
Extraversion	.13***	.13***
Religious commitment	.13***	.20***
	Adj. R^2 = .11***	Adj. R^2 = .08***
Step 2		
Number of lifetime traumas	.21***	.14***
	Adj. R^2 = .16***	Adj. R^2 = .10***
	ΔR^2 = .04***	ΔR^2 = .02***

Note. Values in table are standardized betas.
 * $p < .05$. ** $p < .01$. *** $p < .001$.

assault, or illness ($n = 34$, 28% of trauma group, 3% of total T2 sample); the sudden and unexpected death of a close friend or loved one ($n = 33$, 27% of trauma sample, 3% of T2 sample); and any other event that was life threatening, caused serious injury, or was highly distressing ($n = 13$, 11% of trauma sample, 1% of T2 sample). The mean score on the PCL-S was 32.59 ($SD = 12.60$) and 13% of the sample met the cutoff for probable PTSD. This mean score was similar to those in a sample of recent motor vehicle accident survivors 1 month ($M = 34.9$, $SD = 15.8$) and 3 months ($M = 34.9$, $SD = 15.8$) postaccident (Kuhn, Blanchard, Fuse, Hickling, & Broderick, 2006); the probable PTSD rate was similar to that of a sample of breast cancer survivors 6 months postsurgery (11%; Mehnert & Koch, 2007).

To assess whether individuals who had recently experienced one of these traumatic events engaged in more recent prosocial behavior than those who had not experienced a recent trauma, we conducted a t test comparing the trauma and no-trauma groups on daily helping behaviors in the past 2 weeks. Consistent with the analyses involving lifetime trauma exposure, the trauma group reported engaging in more helping behaviors ($M = 17.47$, $SD = 8.45$) than did the no-trauma group ($M = 15.27$, $SD = 7.74$), $t(234) = 2.08$, $p < .05$, Cohen's $d = 0.27$. The difference between the trauma and no-trauma groups remained significant ($\beta = .13$, $p = .05$) in a regression analysis with lifetime number of traumas controlled ($\beta = .19$, $p = .003$).

Prosocial Behavior, Distress, and Well-Being

Correlations between the number of prosocial behaviors engaged in and measures of distress and well-being for the trauma group suggest that engaging in more helping behavior was associated with more positive affect and perceived meaning in life (see Table 3) and was marginally associated with greater life satisfaction and more PTSD symptoms. Thus, engaging in helping behavior was somewhat more strongly related to well-being than to event-related distress in the recent trauma group. None of these relations were significant in the no-trauma group.

Motivations for Volunteering

Among those participants in Cohort 2 who said that their volunteer work was related to a life event they had experienced, the most common motivations related to *negative life events*, which were mentioned by 44% of the respondents (e.g., "My mother was hit and badly injured by a drunk driver. Ever since I have volunteered for Mothers Against Drunk Driving"). Although negative life events were most often mentioned, 14% of the participants mentioned *positive life events* that motivated their volunteer work (e.g., "I volunteer as a coach because athletics were really important to me growing up"). Other responses (13%) did not mention a specific event but focused on helping others because *someone helped them* (reciprocity; e.g., "I was tutored in math when I was younger and it helped me a lot"). Finally, 29% of the responses were *unclear* in terms of whether the volunteering was related to a negative or positive life event (e.g., "We held fundraisers for specific charities that myself and others had a past with").

Discussion

Our findings consistently indicate that trauma exposure is positively associated with engaging in prosocial behavior. Individuals who reported experiencing more traumatic events in their lifetime reported engaging in more helping behaviors during a 2-week period and more volunteer activities annually than those who had experienced fewer traumas. Individuals who had experienced a recent trauma also reported engaging in more prosocial behaviors than did those who had not experienced a recent trauma. These findings are consistent with other research showing that people report helping in the context of collective traumas such as 9/11 (e.g., Wayment, 2004) and after individual traumas such as serious illness (e.g., Reeves et al., 1999). Thus, although the relations between trauma and prosocial behavior were small in our sample, taken together these findings suggest the need for further research on prosocial behavior following trauma as a form of posttraumatic growth. As Staub and Vollhardt (2008) noted, action may be the hallmark of true change. This research is particularly important given that the veracity of retrospective reports of positive change, as captured in typical measures of posttraumatic growth, has been questioned because of their low correlations with actual change from pre- to posttrauma (Frazier, Tennen, et al., 2009).

Our findings also expanded on previous research in several respects. First, our study examined exposure to a wide range of events including many individual (vs. collective) events. This is

Table 3
Correlates of Daily Helping Behavior at Time 2 for Trauma and No-Trauma Groups

Variable	Trauma group (<i>n</i> = 120)	No-trauma group (<i>n</i> = 115)
Daily helping behavior with		
Positive affect	.30***	.10
Meaning in life	.39***	.16+
Life satisfaction	.16+	.02
PTSD symptoms	.18+	

Note. PTSD = posttraumatic stress disorder.
 + $p < .10$. *** $p < .001$.

important because individual traumas are much more common than collective traumas, particularly in our sample. In addition, we assessed the relation between cumulative trauma exposure (as well as a single recent event) and prosocial behavior, which is important because most people experience multiple traumas in their lifetime (Frazier, Anders, et al., 2009). This also enabled us to assess both the short-term and longer term relations between trauma exposure and prosocial behavior. Second, ours is one of the only studies to assess the relation between trauma exposure and general helping behavior rather than helping in the context of a specific event such as 9/11 (see also Raboteg-Saric et al., 1994). Because our participants were not directly asked whether they helped others who had experienced a specific event, or whether they helped specifically as a result of an event they had experienced, responses may have been less affected by social desirability concerns. Third, ours is one of the few studies to compare helping behavior among those who had experienced a trauma and a no-trauma comparison group (see also Kaniasty & Norris, 1995). Without this information, it is impossible to know whether prosocial behavior is higher in individuals who have experienced a trauma compared with those who have not.

Ours is also the first study of which we are aware to assess the relation between lifetime trauma exposure and prosocial behavior in conjunction with other well-established correlates of prosocial behavior. In our study, lifetime trauma exposure was as related to prosocial behavior as these other well-established correlates. This included empathy, which is considered one of the central predictors of prosocial behavior (Batson, 2010; Eisenberg, 2010). In fact, lifetime trauma exposure explained additional variance in prosocial behavior after accounting for five other known correlates. It is important to note that these correlates of prosocial behavior were all in the small range. However, they were similar in size to other correlations reported in the literature. For example, in another sample of undergraduate students, correlations of volunteer behavior with gender, agreeableness, and extraversion ranged from .14 to .23 (Carlo et al., 2005). Similarly, in a sample of AIDS volunteers, the relation between empathy and length of volunteering was .21 (Penner & Finkelstein, 1998).

Our final goal was to assess the relation between engaging in prosocial behavior and both distress and well-being among individuals who had recently experienced a traumatic event. Previous research has found that individuals who were more distressed were more likely to engage in helping behavior post-9/11 (e.g., Piferi et al., 2006). We found a small, marginally significant association between event-related symptoms and prosocial behavior. Significant relations in other studies in this domain were small as well (e.g., Piferi et al., 2006; Wayment, 2004). This relation is typically interpreted to mean that the helping behavior was motivated by a desire to reduce one's own distress. In social psychological theory on prosocial behavior and altruism, this distress is typically thought to stem from empathizing with another's pain rather than one's own personal sorrow (e.g., Eisenberg, 2010). Thus, research on the relation between trauma exposure and prosocial behavior may inform basic theory as well as clinical work.

Unlike other studies of trauma and prosocial behavior, we also assessed well-being and found somewhat stronger relations between prosocial behavior and well-being than among prosocial behavior and distress, particularly with regard to positive affect and perceived meaning in life, which may be more malleable than

global life satisfaction. Thus, distress may motivate prosocial behavior (as indicated by the positive relation between PTSD symptoms and prosocial behavior), but prosocial behavior may also increase well-being (as indicated by the positive relation between well-being and prosocial behavior). Longitudinal studies are needed to disentangle these relations. This is particularly important because some evidence suggests that the relations between prosocial behavior and distress may change over time (e.g., Wayment, 2004). It is interesting that the relations between prosocial behavior, distress, and well-being were smaller in the no-trauma group than in the trauma group (although not significantly so), suggesting the need for additional research that compares correlates of helping in these two groups.

Our qualitative data on how life events were related to helping suggest that negative life events are often cited as general motives for volunteering. However, our data did not reveal the particular motives involved (e.g., whether the helping was motivated by a desire to reduce one's own distress or to help others or both). In addition, our data revealed reciprocity motives, which were also assessed by Piferi et al. (2006), albeit in a slightly different form (i.e., giving because you want someone to give to you later). Furthermore, positive life events were a motivation for helping reported by our sample.

Although our study expanded on existing research, it was limited in some respects. First, our results can be generalized only to similar samples of primarily young, female, White undergraduate students. Further research is needed using more diverse samples, especially because the frequency of some prosocial behaviors (e.g., volunteering) differs across demographic groups (Penner et al., 2005) and among samples who may have experienced more severe traumas. Second, our assessment of daily helping behavior was limited by the use of a four-item measure developed for this study. However, we did replicate the small positive relation between lifetime trauma exposure and prosocial behavior using an established measure of prosocial behavior (the Self-Report Altruism Scale; Rushton, Chrisjohn, & Fekken, 1981) in another large sample of undergraduates (Anders, 2011). Third, our timeframe for studying the relation between recent trauma exposure and prosocial behavior was short. Although we found a relation between lifetime trauma exposure and volunteering, not enough time had elapsed since the recent trauma to assess increases in the types of volunteer behavior we assessed. Finally, we did not assess situational factors that may influence helping (e.g., reciprocity norms) or the nature of the relationship between the "helpers" and "helpees" (e.g., whether they experienced the same event or whether the helping was unrelated to a specific event).

Given the dearth of research on this topic, there are many interesting areas for future research, including further assessing motives for engaging in prosocial behavior in the midst of or following traumatic life events. For example, motives for helping may differ over time. A qualitative study of individuals with HIV suggested that soon after a trauma, they engaged in prosocial behavior to reduce their own distress, but that later prosocial acts were motivated by a desire to help others (Reeves et al., 1999). In the study by Piferi et al. (2006), only altruistic motivations were associated with sustained giving over time. Further research also is needed on whether motives for prosocial behavior differ across types of events. As mentioned, the motivations for helping others in the context of a vicariously experienced event (e.g., most studies

of 9/11) may differ from the motives for helping others in the context of a collective event, such as a natural disaster where everyone is affected. It also would be useful to test predictions from other theoretical perspectives regarding the motives for prosocial behaviors. For example, Yum and Schenk-Hamlin (2005) based their study on terror management theory, explaining prosocial behavior following 9/11 as a means of coping with awareness of inevitable death. Alternatively, prosocial behavior may be explained by evolutionary biology theories suggesting that altruistic behaviors provide signals to others about one's resources and other positive characteristics (Van Vugt & Hardy, 2010). Thus, prosocial behavior following trauma may signal information about one's recovery from the trauma and reduce stigma about being a victim. Finally, future studies should examine factors that may mediate or moderate the relation between trauma exposure and prosocial behavior (see Staub & Vollhardt, 2008; Vollhardt, 2009). One such factor is perceived similarity to victims: If trauma survivors perceive other victims as more similar to themselves than do nonvictims, and if perceived similarity increases helping, perceived similarity might explain the relation between trauma exposure and prosocial behavior (see Wayment, 2004).

There also is a need to move beyond qualitative and correlational studies. Research is needed that uses non-self-report behavioral measures (e.g., observational measures, peer reports) to determine whether trauma survivors actually engage in more helping behaviors than do other individuals. Such studies could also include non-self-report measures of other key variables, such as empathy. Experimental investigations of interventions could be designed to facilitate prosocial behaviors for those who have experienced trauma. Such studies are needed to establish a causal relation between helping and healing and, if successful in increasing prosocial behavior, could have benefits for the trauma survivor and society as a whole.

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