

A Prospective Study of Potentially Traumatic Events: Associations Between Types and
Dimensions of Events and Outcomes

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Abstract

The purposes of this study were to assess lifetime and recent exposure to potentially traumatic life events (PTE) among undergraduate and community college students, to assess the relation between event exposure and a broad range of outcomes (i.e., mental and physical health, life satisfaction, GPA) and to compare students who were exposed to a PTE to those who were not exposed, on changes in functioning on a broad range of outcomes (e.g., PTSD, distress, life satisfaction, world assumptions). Undergraduate students from a Midwestern university ($n = 842$) and a community college ($n = 242$) completed online measures of lifetime event exposure and outcomes at Time 1 (T1) and recent event exposure and outcomes at Time 2 (T2) two months later. PTEs assessed included events that did and did not meet the definition of a traumatic event (i.e., PTSD Criterion A1) in the DSM-IV-TR (APA, 2000) as well as directly (e.g., own life-threatening illness) and indirectly (e.g., others' illness) experienced events. Individuals who experienced an event between T1 and T2 and said that it had caused them considerable or extreme distress made up the PTE group ($n = 153$). The no PTE group ($n = 198$) consisted of individuals who either did not experience an event between T1 and T2 or experienced an event that caused them no distress. Students reported experiencing many lifetime and recent Criterion A1 and non-A1 events; community college students reported more events than did university students. Generally, individuals who reported more lifetime events also reported poorer outcomes (e.g., poorer health) at T1. The number of non-Criterion A1 and directly experienced events tended to be more strongly correlated with negative outcomes than were the number of Criterion A1 and indirectly experienced events reported at T1. Controlling for number of lifetime traumas and

neuroticism, the PTE group reported significantly more change in mental and physical health symptoms and world assumptions than the no PTE group, and reported more reliable change in outcomes. Overall, however, the amount of change in the PTE group was small.

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The mental health concerns of undergraduate students have been the focus of recent media attention (e.g., Lewin, 2011). While there is debate regarding whether the increasing number of students accessing services at college and university counseling centers is due to decreased stigma regarding mental health treatment or increased prevalence of mental health concerns (e.g., Hunt & Eisenberg, 2010), evidence does suggest that there are greater numbers of students with severe mental health issues compared to earlier years (Gallagher, 2010). This is an essential issue for counseling psychologists because many work on campuses in counseling centers or as faculty members (Munley, Pate, & Duncan, 2008).

One important aspect of student mental health is the experience of traumatic and stressful events. The experience of trauma is nearly universal, with high lifetime exposure rates in community and undergraduate samples (see Frazier, 2012, for a review). Across studies, the majority of undergraduates report having experienced at least one significant PTE in their lifetime (Frazier, 2012). As the peak age for trauma exposure is 16 to 20 years of age (Breslau et al., 1998), the undergraduate years are a period of particularly high risk.

One of the most important designs in trauma research is the prospective study, in which individual functioning is measured both prior to and after potentially traumatic events (PTEs). This is an important distinction when compared with a longitudinal design which tracks participants over time, but does not necessarily measure participant functioning *prior to* events. A prospective study design is important because, without assessing functioning prior to a PTE, it is unclear whether any difficulties reported are due to the PTE or represent previous functioning deficits (Breslau et al., 2008). Many

studies use a longitudinal design that tracks participants over time. Although there are a number of prospective studies of PTEs in the literature, a vast majority use pre-trauma measures to predict post-trauma outcomes (e.g., Gil, 2005), and very few report pre to post-event change (e.g., Frazier, Tennen et al., 2009). Conceptually, most studies assume that change does occur. However, without assessing change, it is impossible to evaluate the veracity of this assumption or the magnitude of change.

Although prospective studies can illuminate reactions to PTEs, they are difficult to conduct. They typically either involve high-risk samples (e.g., soldiers), participants in an ongoing study who all happen to experience an event (e.g., natural disaster), or they follow a large number of participants, some of whom will experience a PTE.

Additionally, because many studies that assess trauma exposure prospectively focus on single events (e.g., combat or natural disasters), it is difficult to draw conclusions from this research about how a wide variety of events, including events that do not meet the definition of a traumatic event (Criterion A1) in the DSM-IV-TR (APA, 2000), impact functioning pre to post event. This is an important limitation because a growing body of evidence suggests that non-Criterion A1 events are associated with similar levels of distress and PTSD as are Criterion A1 events (e.g., Anders, Shallcross & Frazier, 2012; Anders, Frazier & Frankfurt, 2011) and are commonly experienced (Anders et al., 2012).

Overview of the Dissertation

In the following, I review research on the prevalence of and outcomes associated with exposure to PTEs, with a focus on research with undergraduate students. I also review research on prospective studies in undergraduate and community samples, focusing on studies that report pre to post-trauma change. I do not include research with

military samples because the nature of the events in such samples are typically of a very different nature than those reported in undergraduate samples, especially over a short time period. I then present the results of a study in which I assessed lifetime and recent exposure to a range of PTEs among undergraduate students and the relations between event exposure and a broad range of outcomes. I also compare those who had experienced a PTE to those who had not in terms of changes in mental health symptoms, life satisfaction, physical health, and world assumptions.

Trauma Prevalence and Prospective Studies in Undergraduate Samples

In studies examining PTEs in undergraduates, PTE exposure rates have ranged from 52% (Owens & Chard, 2006) to 96% (Scarpa, 2001) with lower rates in studies that excluded commonly experienced events such as the sudden and unexpected death of a close other or events that happened to close friends or family members (e.g., life threatening illness). In a large study of trauma prevalence among 1,528 undergraduate students at four U.S. universities using a validated trauma checklist that included these common events, a majority of the sample (85%) endorsed experiencing at least one event during their lifetime (Frazier, Anders et al., 2009).

A handful of studies have assessed exposure to PTEs in undergraduate samples over a specific period of time during college. In one study of exposure to Criterion A1 PTEs, 21% of the student sample reported a PTE over a two-month period (Frazier, Anders, et al., 2009). When exposure to 10 Criterion A1 events was assessed over 3 to 5 years the exposure rate was similar in a German sample (20%; Stein et al., 2002). However, studies that have assessed both Criterion A1 and non-A1 events have found higher rates of recent exposure even over 2-month time periods (32% in Plumb, Orsillo &

Luterek, 2004). Exposure rates increased to 89% when assessed over a four year period (Gupta & Bonanno, 2010). Thus, exposure to PTEs appears to be quite common during college.

Although several studies have assessed event exposure prospectively, only one of these studies assessed change in functioning from pre to post-PTE. Specifically, using the same sample as Frazier, Anders, et al. (2009), 7% reported reliable decreases in life satisfaction (overall effect size from T1 to T2 = $-.32$) and 13% reported reliable increases in distress (overall effect size change = $.12$; Frazier, Tennen, et al., 2009). Thus, only a minority of those who experienced an event reported change larger than measurement error. One other study (Nolen-Hoeksema & Morrow, 1991) assessed pre to post-PTE change in a small sample of undergraduates ($n = 137$) who experienced the 1989 Loma Prieta earthquake. Although there was no significant difference between pre-earthquake and 10 day post-earthquake levels of depression, there were significant increases in the depressive symptoms included in the DSM-III-R's (APA, 1987) definition of PTSD (i.e., low energy, loss of pleasure, guilt) from pre to 10 days post-earthquake ($d = -.17$). Thus, when assessed pre to post-PTE, change is fairly small.

Prospective Studies in Community Samples

The original National Comorbidity Survey (NCS) measured a variety of events over the course of a three years in a large sample of community adults, 19% of whom reported experiencing at least one DSM-III-R event (Breslau, Davis, & Andreski, 1995). In a replication to the NCS, four follow-ups were conducted over 10 years after the original baseline study, and exposure to DSM-III-R (APA, 1987) events and PTSD were assessed at all time points (Breslau et al., 2008). Baseline exposure to trauma increased

the risk of PTSD for a subsequent trauma only among people who had developed PTSD in response to the baseline trauma.

Most prospective studies in community samples focus on single events such as the September 11th attacks (Ford, Adams, & Dailey, 2007), bereavement (Bonanno et al., 2002) or natural disasters (e.g., Bravo, Rubio-Stipec, Canio, Woodbury, & Ribera, 1990; Drabek & Key, 1984; Ginexi, Weihs, Simmens, & Hoyt, 2007) that happen to an entire community. These studies typically use pre-event scores to predict post-event scores, but do not report pre to post-event changes in outcomes or functioning. The one study (Bonanno et al., 2002) that reported pre to post-event change assessed community individuals ($n = 205$) who experienced the death of a spouse. Participants were assessed several years prior to the death (T1) and 6 (T2) and 18 months post-loss (T3). Participants were categorized as belonging to one of five different patterns of adjustment (i.e., common grief, chronic grief, resilience, chronic depression, depression-improvement) based on a priori hypotheses. Some groups evidenced little change from pre to post-event (e.g., resilient group) whereas other groups demonstrated more change (e.g., depressed-improved group). This study is important because it used amount of change from pre to post event to identify different patterns of adjustment; however, it focused on only a single event.

Outcomes Assessed in Undergraduates

Most studies focus on single events and a narrow range of outcomes. PTSD is the outcome most frequently studied in relation to traumatic and stressful life events in the trauma field. However, few studies of undergraduate students report PTSD prevalence rates. The existing studies suggest that current PTSD prevalence rates for trauma-exposed

undergraduate samples range from 6% (Amir & Sol, 1999; Frazier, Anders et al., 2009; Oswalt & Silberg, 1995) to 12% (Bernat, Ronfeldt, Calhoun, & Arias, 1998; Watson & Haynes, 2007). Current PTSD prevalence for total samples (including trauma-exposed and non-exposed groups) range from 4% to 9% (Amir & Sol, 1999; Bernat et al., 1998; Frazier, Anders et al., 2009; Read et al., 2011). These PTSD rates are similar to rates from epidemiological studies of community samples in the US (e.g., Kessler, Chiu, Demler, & Walters, 2005).

Depression and anxiety are other common outcomes examined in young adults in the trauma literature. Lifetime exposure to PTEs was associated with increased risk of depression and anxiety in undergraduate students (e.g., Anders et al., 2012; Krupnick et al., 2004; Scarpa, 2001). Similarly, in a large undergraduate sample in the United States, lifetime exposure to sexual assault, unwanted sexual attention, and family violence were all associated with more depression, anxiety, and stress (Frazier, Anders et al., 2009). Exposure to each event made a small but independent contribution to variance in distress levels.

Unfortunately, most studies focus on PTSD, distress, and occasionally physical health, and few (e.g., Frazier, Tennen, et al., 2009) assess other important outcomes such as “positive” functioning (e.g., life satisfaction). Another less commonly studied outcome in the PTE literature is the assumptive world. The term “assumptive world” refers to strongly held assumptions about the world and the self that guide planning and action. These beliefs are thought to be a set of fundamental schemata that serve as a foundation for an individual’s more specific beliefs and are generally resistant to change (Janoff-Bulman, 1989). Traumatic life events have been assumed to “shatter” survivors’ world

assumptions (Janoff-Bulman, 1992; Joseph & Linley, 2005). Research testing the theory that world assumptions are shattered by traumatic life events generally measures assumptions after the experience of an event, sometimes comparing assumptions in trauma and no trauma groups. These studies have yielded inconsistent results (see Kaler et al., 2008, for a review).

The best way to test the theory that assumptions are shattered as a result of a PTE is to assess assumptions prior to and after the event. Such studies are rare. One unpublished study (Poulin & Silver, 2007) used a nationally representative sample of 2,398 US adults to prospectively examine, over the course of three years, how the experience of negative events predicted change in benevolence and meaningfulness assumptions (as measured by the World Assumptions Scale [WAS]; Janoff-Bulman, 1989). However, the researchers did not measure initial pre-trauma (in this case, pre 9/11) world assumptions. Rather, they measured world assumptions after the September 11 attacks, and then at three subsequent points during which they also measured the experience of recent negative events (since the prior survey). They concluded that, taken together, their findings did not support the notion that world assumptions, in the form of benevolence or meaningfulness beliefs, “shatter” from stress or trauma. However, they did not directly report the extent to which event exposure was associated with change in assumptions.

Another unpublished study measured world assumptions prospectively in a sample of undergraduates who experienced a PTE during a 2-month period (N =264; Anders et al., 2010). This study assessed whether the experience of a PTE between Time 1 (T1) and Time 2 (T2; 2 months later) was associated with changes in world

assumptions, and whether changes in world assumptions were associated with any subsequent mental health symptoms. There were no significant changes in any of the eight WAS subscales for those who experienced a PTE between T1 and T2, although increases in negative assumptions from pre to post-trauma were associated with more mental health symptoms post-trauma. Thus, data from these two unpublished studies suggest that the amount of pre- to post-PTE change in assumptions also may be small.

Critique of the Literature

Although there is a fair amount of research on the experience of PTEs in undergraduate samples, this research is limited in several respects. First, because the DSM-IV-TR (APA, 2000) classifies an event as traumatic if an individual “experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others” (Criteria A1; p. 467), non-Criterion A1 events are rarely systematically assessed. However, several studies in community (e.g., Anders et al, 2011; Green et al., 2000) and undergraduate (e.g., Anders et al., 2012; Lancaster, Melka, & Rodriguez, 2009; Long et al., 2008) samples have found that events that do not meet the DSM definition of trauma (i.e., non-Criterion A1 events), such as relationship dissolution and infidelity, are associated with similar rates and levels of PTSD symptoms as events that do meet Criterion A1. They are also frequently nominated as worst lifetime events (e.g., Anders et al., 2012). Further, most studies assess non-Criterion A1 events with one open-ended question (see e.g., Gold, Marx, Soler-Baillo, & Sloan, 2005). Only three studies of undergraduate students (Anders et al., 2012; Lancaster et al., 2009; Long et al., 2008) have systematically assessed non-Criterion A1 events. Without systematic assessment, it is impossible to

determine if exposure to certain non-A1 events is associated with more dysfunction compared to either other non-A1 or A1 events. Additionally, only one study (Anders et al., 2012) reported prevalence rates for individual non-A1 events. Thus, little information is available on which events are most common among students. Given the evidence that counseling psychologists are confronting more serious psychopathology, including PTSD, on university campuses, and that traumatic and stressful life events are so common, a more systematic assessment of non-A1 events in undergraduates is essential to better serve these students.

Second, although the DSM-IV-TR (APA, 2000) indicates that Criterion A1 events can be directly or indirectly experienced, this dimension is rarely assessed. Directly experienced events are those that happened directly to the individual (e.g., own illness) whereas indirectly experienced events are those that happened to someone else (e.g., other's life-threatening illness) with no direct witnessing component required. Most existing studies find higher rates of PTSD symptoms in participants who directly, rather than indirectly, experienced an event, although the findings are somewhat mixed. For example, in one study, directly experienced events were associated with higher rates and symptoms of PTSD than were indirectly experienced events (Anders et al., 2011). This study, which assessed a community sample of women, was the only such study that also systematically assessed non-Criterion A1 events. Only one study addressed this issue in an undergraduate sample (Frazier, Anders et al., 2009). This study, which focused exclusively on Criterion A1 events, found no differences between directly and indirectly experienced events in terms of PTSD symptoms. Thus, additional research is needed on this dimension, especially with regard to non-Criterion A1 events.

Third, most studies of traumatic life events among undergraduates assess PTSD, and occasionally other negative mental health variables such as depression or anxiety. However, given evidence from community samples that there are other important sequelae of PTEs and counseling psychology's interest in adjustment beyond psychopathology, it is important to assess additional outcomes such as physical health, life satisfaction, academic performance, and world assumptions. To my knowledge no studies address the link between trauma and physical health in undergraduates, despite the robust links between exposure to traumatic and stressful life events and physical illness in community samples (e.g., Felitti et al., 1998). Because undergraduates tend to be younger and presumably healthier than community samples, the association between trauma and physical health may be different in this population. Only two studies (Malinauskas, 2010; Perna, Ahlgren, & Zaichkowsky, 1999) assessed life satisfaction in undergraduates in relation to traumatic and stressful life event exposure, both in college athletes. Thus, their findings may not generalize to undergraduates as a whole. Finally, academic outcomes in undergraduates have been studied following exposure to both Criterion A1 and non-A1 events, but findings have been mixed. Some have found the experience of trauma to be unrelated to academic performance (Rosenthal & Wilson, 2003) whereas others found that graduation rates dropped off sharply with each additional stressful life event experienced outside college (Cox & Reason, 2011).

A fourth limitation is that very few studies assess event exposure prospectively by asking individuals to describe which events they have experienced over the course of a longitudinal study. Rather, most assess lifetime event exposure retrospectively. Although lifetime exposure to traumatic and stressful life events is important, prospective studies

may provide more accurate estimates of actual event exposure over a shorter time period. In addition, it is important for campus personnel to be aware both of the events that students are experiencing while they are students and what they have experienced over the course of their lifetimes. Additionally, very few prospective studies have reported data on pre to post event change following PTEs in student or community samples, despite the fact that this is the best design for assessing the effects of event exposure. Only one study of undergraduates reported reliable change in pre to post-event functioning (Frazier, Tennen et al., 2009); that is, whether the amount of change exceeded what would be expected based on measurement error alone (Jacobson & Truax, 1991). This is important in terms of establishing the practical significance of reported change.

Fifth, none of the prospective studies compare change in those that experienced a PTE to those that did not. This is especially important when using college samples as we may expect change in a variety of domains to occur without exposure to PTEs. Without using a comparison group it is impossible to conclude whether change in those that experienced a PTE is beyond what would normally occur.

Finally, to my knowledge, no studies examine traumatic and stressful events in community college students, despite the large number of students enrolled at these institutions (AACC, 2011). Community college students differ from undergraduates at universities in numerous ways: they tend to be less academically prepared and are less likely to persist to the second year (about 50% for community college and 75% for university students); they tend to be older; they are more likely to be ethnic/racial minorities (McIntosh & Rouse, 2009). Given these differences, community college

students may also have experienced different types or levels of stressors over their lifetimes.

Present Study

To address the limitations of previous research on the prevalence and associations with outcomes of PTEs among undergraduates and to help illuminate the current concerns of undergraduates, I assessed a broad range of Criterion A1 and non-Criterion A1 directly and indirectly experienced events both retrospectively and prospectively, using a checklist. I assessed lifetime event exposure at Time 1 (T1) and event exposure over a two month period at Time 2 (T2). I assessed students at a large Midwestern University and at a Midwestern community college, which allowed me to compare trauma exposure across students at the two types of schools. To address limitations of previous research that examined a narrow range of outcomes, I used several different outcome measures assessing PTSD symptoms, depression and anxiety, life satisfaction, physical health outcomes, grade point average (GPA), and world assumptions. I compared those who had experienced a PTE to those who had not based on changes in outcomes, and reported reliable change for each outcome. When comparing the two groups, I controlled for T1 neuroticism because it has been associated with increased likelihood of reporting a PTE (Kendler, Myers & Prescott, 2002). Given the strong relation between neuroticism and distress (Bolger & Schilling, 1991), I wanted to make sure that the differences between the PTE and no PTE group were not due to differences in neuroticism. Similarly, given that past PTE exposure is a risk factor for both subsequent exposure (Brewin, Andrews & Valentine, 2000) and distress (Green et al., 2000), these analyses also controlled for the number of lifetime PTEs reported.

I hypothesized that the non-Criterion A1 events assessed would be commonly experienced over the lifetime, and frequently nominated as worst events. I anticipated that community college students would more frequently report experiencing most of the events both over their lifetimes and between T1 and T2. I expected that the number of lifetime traumas reported would be associated with worse mental and physical health, lower life satisfaction, and worse grades at T1, and that these relations would be stronger for the number of directly (than indirectly) experienced events. I expected that the relations between the number of events and outcomes would be similar for Criterion A1 and non-A1 events. I anticipated that individuals whose worst event at T1 was a non-Criterion A1 event would report as much impairment (e.g., similar levels of distress) as those whose worst event was a Criterion A1 event, whereas those whose worst event was directly experienced would report more impairment than those whose event was indirectly experienced. I also anticipated that the non-Criterion A1 events would be frequently experienced between T1 and T2. I hypothesized that individuals in the PTE group would report larger decreases in functioning (e.g., more PTSD and distress, less life satisfaction, poorer mental and physical health functioning and less positive world assumptions) and more reliable change than those in the no PTE group and that they would report a small amount of overall change from T1 to T2. Additionally, for the PTE group, I expected more reliable increases than decreases in PTSD and distress from T1 to T2, and more decreases than increases for life satisfaction, mental and physical health and world assumptions from pre to post-event.

Method

Participants and Procedures

Baseline data were collected from 1,084 undergraduates at a large public university (N=842) and a community college (N=242). Follow-up data were gathered two months later (Time 2) from 789 undergraduates (73% response rate). Although my window of exposure was small, this allowed me to measure changes in functioning relatively close to the event's occurrence. At T1, in the total sample, most (74%) participants were between 18 and 21, female (75%), and identified as European American/White (75%). Sample characteristics of the T2 sample were similar: 76% 18 and 21, 75% female, 80% European American/White. All participants completed online surveys for extra credit in their psychology courses.

Chi-square tests were conducted to compare the samples from the two schools with regard to age, gender, and race. There were no significant differences in gender; however, the community college sample was significantly older, $\chi^2(4) = 146.54, p < .001$ (49% of the community college sample was 18-21 compared to 82% of the university sample), and had somewhat more African-American students (9% vs. 2%), and somewhat fewer Asian American (11% vs. 15%) and Caucasian students (70% vs. 76%), $\chi^2(7) = 37.34, p < .001$.

Chi-square tests used to compare the demographic characteristics of those who did and did not complete the T2 survey indicated no significant differences in gender; however, there were significant racial/ethnic, $\chi^2(7) = 37.64, p < .001$, and age, $\chi^2(4) = 8.78, p = .03$, differences. Specifically, White students were more likely to complete T2 (77%) than were students from other racial groups (e.g., African American - 62%; Asian/Asian-American - 60%), and students over 40 were more likely to complete T2 (90%) than were younger students (i.e., 18-21 year olds - 75%; 22-30 and 31-40 year olds

- 67%). Community college students ($n = 151$, 62% response rate) were significantly less likely to complete the T2 survey than were the university students ($n = 638$, 76% response rate; $\chi^2(1) = 16.98, p < .001$).

Measures

Only measures relevant to this study are reported here.

Demographics. Questions were asked regarding age, gender, race, and current GPA.

Stressful events. At Time 1, lifetime exposure to 47 stressful life events (plus one “other” event) was assessed. The Traumatic Life Events Questionnaire (TLEQ; Kubany, 2004) was administered, which is comprised of 22 primarily Criterion A1 events (e.g., life threatening illness, sexual assault) and a question regarding the experience of any “other” events that were disturbing or distressing. Participants indicated whether they had experienced each event during their lifetime. Evidence for the validity of the TLEQ exists in the form of comparisons between answers across time points as well as comparisons of answers with interviews (Kubany, 2004). To assess non-Criterion A1 events, we administered a previously constructed 18-event checklist developed from open-ended responses to questions about event exposure (see Anders et al., 2012). An additional seven events were added based on responses to an open-ended question in a subsequent pilot study (e.g., close other struggling with chemical use). Appendix A contains a list of the 25 non-TLEQ events assessed. At T2, six event categories representing childhood events were eliminated; thus, at T2, participants indicated whether they had experienced each of 42 events and one “other” unspecified event since completing the T1 survey. Because six of the 48 events could be considered “personal mental health events” (i.e.,

lonely, socially isolated, homesick, own substance abuse, own mental health struggles, own substance abuse struggles), which could inflate the relations between event exposure and mental health outcomes, analyses were conducted both with and without these events. Because the results were virtually identical, I report the analyses using all measured events, and the one instance in which results differed is noted in the text.

After completing the event checklist at T1 and T2, participants were asked to indicate which of the events they had experienced caused them the most distress (their self-nominated worst event) and rated how much distress the event caused them in the past two weeks (1 = *no distress* to 5 = *extreme distress*). Participants who nominated a worst event at T1 and T2 were asked to write a narrative with as many details of the event as they felt comfortable sharing and a narrative about the impact of the event. These narratives were used to code events (see below).

All “other” events that were nominated as worst events (T1 $n = 43$, T2 $n = 30$) were coded by two trained graduate students into existing event categories if possible. Of these 73 events, 47 were coded into existing categories and 26 remained as “other.” The interrater agreement using weighted kappa was .59 for T1 and .62 for T2. Kappas above .60 are considered “substantial” (Landis & Koch, 1977). For all of the coding described below, when the two coders agreed, the agreed upon code was used. When the coders disagreed, the myself and another graduate student discussed the code until they came to a mutually agreed upon decision.

Two characteristics of the self-nominated worst events at T1 were coded. First, all of the events at T1 were classified a priori as directly ($n = 35$) or indirectly ($n = 9$) experienced, or as needing to be coded ($n = 4$). Directly experienced events were events

that happened directly to the participant (e.g., own illness). Indirect events were events that happened to someone else (e.g., witnessing something happen to someone else, other's illness). Worst event descriptions classified as needing to be coded included events that were not clearly directly or indirectly experienced (i.e., self or partner abortion, self or partner miscarriage, other types of accident, and "other" events). The interrater agreement between the two coders for this rating using weighted kappa was .89 (95% CI = .78 - .99). Second, the T1 worst events were classified a priori as being Criterion A1 events ($n = 20$) or not ($n = 24$) according to the DSM-IV (APA, 2000) or as needing to be coded ($n = 4$; other, own mental health difficulties, other's mental health difficulties, own suicidal ideation or attempt). The worst event descriptions for the 93 events in these four categories were coded as meeting Criterion A1 if the event was life threatening, included a threat to physical integrity (e.g., rape, assault) or if it was a sudden death. The interrater agreement using weighted kappa was .64 for T1 (95% CI = .48 - .79). Of these 93 worst T1 events, 15% ($n=14$) were categorized as Criterion A1, 80% ($n=74$) as non-A1 and 5% ($n=5$) as unable to be coded based on the narrative.

The number of stressful life events reported was measured using the expanded stressful events checklist by summing the number of total PTEs endorsed by each participant. The number of Criterion A1 and non-Criterion A1 and directly and indirectly experienced events were similarly measured by summing these events experienced during the lifetime (see Table 1 for more information on which events were classified into each category).

Neuroticism. Personality was measured in this study using the 40-item short form of Goldberg's Mini-Markers (Saucier, 1994). This scale is composed of

eight adjectives for each of the Big Five personality traits. Participants were asked to rate how descriptive each adjective was for them on a 1 (*extremely inaccurate*) to 9 (*extremely accurate*) scale. I only used the neuroticism subscale here which has demonstrated high internal reliability, and convergent and divergent validity in an undergraduate sample (Palmer & Loveland, 2004). The internal consistency reliability was .81 at T1 in this sample.

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* (APA, 2000). Participants responded to items in terms of their self-nominated most distressing lifetime event. Items were rated a 1 (*not at all*) to 5 (*extremely*) scale with regard to the previous 2 weeks. 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). A recent study (Adkins, Weathers, McDevitt-Murphy, & Daniels, 2008) of the psychometric properties of several measures of PTSD symptoms in college students revealed strong support for the test-retest and internal consistency reliability and convergent validity of scores on the PCL, including a correlation of .65 between scores on the PCL and the total symptom severity score on the Clinician-Administered PTSD Scale (CAPS), which is considered the “gold standard” for assessing PTSD (Weathers, Keane, & Davidson, 2001). The alpha coefficient for scores on the total PTSD symptom severity scale was .92 at T1 and .94 at T2.

General Distress. I included the depression, anxiety, and hostility subscales of the Brief Symptom Inventory (BSI; Derogatis, 1993) to assess general distress. Items were rated on a 1 (*not at all*) to 5 (*extremely*) scale. Scores on these subscales have been shown to be reliable in other college samples (Frazier, Keenan et al., 2011; $\alpha = .92$), and internal consistency reliability in this sample was .92.

Life Satisfaction. The five-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985) was included to assess subjective well-being. Items were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores on the SWLS have a 2-month test–retest correlation coefficient of .82 and coefficient alpha of .87 (Diener et. al., 1985). The SWLS is widely used and well-validated (Pavot & Diener, 1993). The internal reliability in this sample was .92 at both T1 and T2.

SF-12 Health Survey. Physical and mental functioning during the month preceding each assessment was measured with the physical health and mental health summary scales of the SF-12 Health Survey (Ware, Snow, Kosinski, & Gandek, 1993; see Ware & Kosinski, 2001). These measures focus on the individual’s functionality (e.g., During the past 4 weeks, have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)? E.g., Accomplished less than you would like?) as opposed to the symptom oriented BSI. Each subscale contains 6 items. Extensive evidence exists for the predictive validity of scores on this measure and their ability to discriminate between groups of patients suffering from a variety of mental and physical health ailments (e.g., McHorney, Ware & Raczek, 1993). Scores on the SF-12 have been found

to be equivalent to the Physical Component Summary Score (PCS) and Mental Health Component Summary Score (MCS) of the SF-36 (Jenkinson et al., 1997). The internal consistency reliabilities of scores in this sample were .65 (T1) and .69 (T2) for the PCS and .74 (T1) and .78 (T2) for the MCS. Higher scores indicate better functioning.

Assumptive World. The World Assumptions Questionnaire (WAQ; Kaler & Frazier, 2011) is comprised of 25 items that are divided into four subscales: Controllability of Events, Comprehensibility and Predictability of People, Trustworthiness and Goodness of People, and Safety of the World. Previous work has demonstrated adequate internal consistencies (range from .74 to .82; $M = .78$) and high temporal stability coefficients (range .68 to .74; average $r = .70$) for scores on each of the subscales, as well as evidence of construct, discriminant and convergent validity (Kaler & Frazier, 2011). Alpha coefficients in this sample were as follows: Safety of the World (T1 $\alpha = .64$, T2 $\alpha = .83$); Controllability of Events (T1 $\alpha = .77$, T2 $\alpha = .67$); Comprehensibility and Predictability of People (T1 $\alpha = .75$, T2 $\alpha = .75$); and Trustworthiness and Goodness of People (T1 $\alpha = .83$, T2 $\alpha = .74$).

Grade point average (GPA). Participants were asked to provide their current GPA on a 1 to 4 scale. I also obtained the actual GPAs of the university students from the registrar's office. Because the correlation between actual and self-reported GPA at T1 was high ($r = .74$) for the university students and because I wanted to include GPA data for all students, the GPA analyses used self-reported GPA. Also because GPA data were only collected for one semester, I did not use changes in GPA as an outcome variable for the T1 to T2 prospective analyses.

Results

Preliminary Analyses and Overview

At T1 and T2, scores on all continuous variables were checked for outliers using Grubb's test. Five scores were more than three standard deviations away from the mean and appeared like outliers on visual inspection (three at T1 and two at T2). These scores were winsorized (i.e., changed to the next closest score).

Data on the prevalence of each event is presented for the total sample, and separately for the university and community college samples. I did not compare the two samples with regard to which events were nominated as worst because the number of people who nominated each event as their worst was generally very small. All correlational and MANOVA and MANCOVA analyses were conducted using data from the total sample because the relations among variables were not predicted to differ across the two samples.¹

Prevalence of PTE Exposure at T1

Nearly all (99%, $n = 1078$) of the T1 participants reported experiencing at least one lifetime event (see Table 1). The most common events overall were someone saying hurtful things, someone breaking a promise, close other being unsupportive, and being physically or verbally bullied. The mean number of total lifetime events was 15.48 ($SD = 47.43$; range = 0 to 45). The community college sample also reported a higher average number of lifetime events ($M = 18.22$, $SD = 8.30$) than did the university sample ($M = 14.70$, $SD = 6.96$), $t(1082) = -6.63$, $p < .001$, $d = .46$.

Non-Criterion A1 events. The lifetime prevalence rates for the non-A1 events ranged from 82% (others saying hurtful things) to 4% (self or partner miscarriage) (see Table 1). The mean number of non-Criterion A1 events reported over the lifetime was

10.99 ($SD = 4.9$; range = 0 to 23) and 99% reported at least one non-Criterion A1 event. All of the non-A1 events except self/partner abortion and self/partner miscarriage were endorsed by more than 15% of the sample. Every non-Criterion A1 event was reported by a higher percentage of the community college than the university sample. Chi-square tests were conducted to determine the significance of these differences. The difference between the two samples was significant at an adjusted alpha level of .002 (.05/24) for 7 of the 24 non-Criterion A1 events. The biggest difference was in terms of being psychologically or emotionally mistreated which was reported by 74% of the community college sample and 54% of the university sample. The community college sample also reported a higher average number of non-Criterion A1 events ($M = 12.53$, $SD=5.23$) than did the university sample ($M = 10.54$, $SD= 4.71$), $t(1082) = -5.66$, $p <.001$, $d = .40$.

Criterion A1 events. The prevalence rates for the Criterion A1 events ranged from 48% (unexpected death of a close other) to 3% (living or working in a war zone) (see Table 1). The mean number of Criterion A1 events reported (not including “other” events) was 3.08 ($SD = 2.48$, range = 0 to 14) and 89% reported at least one Criterion A1 event. All but two (i.e., natural disaster and life-threatening illness) of the Criterion A1 events were reported more often by the community college sample. Chi-square tests revealed that these differences were significant for 10 of the 20 Criterion A1 events at the $p<.002$ level. The biggest difference was in terms of witnessing family violence (39% vs. 27%). The community college sample also reported a higher average number of Criterion A1 events ($M = 4.00$, $SD=3.00$) than did the university sample ($M = 2.82$, $SD= 2.34$), $t(1082) = -6.71$, $p <.001$, $d = .44$.

Other events. As mentioned previously, there also were four events that could not be clearly categorized as Criterion A1 or not. These included “other” events that individuals wrote in on the TLEQ, another person’s serious mental health problem, own suicidality, and own mental health problems. These events also were common (reported by 18% to 52% of the total sample) and were more common among the community college sample. One of the between-group differences were statistically significant at the $p < .002$ level (i.e., own suicidality), with the community college sample reporting it more often (41%) than the university sample (29%).

Worst events. The most frequently nominated worst events in the total sample were unexpected death of a loved one (15%; $n=160$), undesired relationship dissolution (9%; $n=97$), close other’s substance abuse (5%, $n=52$), a romantic partner’s infidelity (4%; $n=46$), and own emotional or psychological mistreatment (4%; $n=39$) (see Table 1). Four of these five events were non-Criterion A1 events. The overall frequency with which certain events were nominated as worst events of course depends on the prevalence of the event. *If they were experienced*, the non-A1 events most likely to be nominated as worst events were self or partner abortion (15%; 10/69), undesired relationship dissolution (14%, 97/676), being cheated on (12%; 46/401), and close other’s substance abuse (10%; 52/535). *If they were experienced*, the A1 events most likely to be nominated as worst events were the unexpected death of a loved one (31%; 160/516), own life threatening illness (17%, 15/89), forced sexual contact before age 13 with someone 5 plus years older (17%, 12/72) and motor vehicle accident for which the participant received medical attention or that badly injured or killed someone (16%; 20/122).

Correlations between Neuroticism, Number of Events and Outcomes

Table 2 presents correlations between neuroticism, the total number of events experienced, number of Criterion A1 and non-A1 events experienced, and the number of direct and indirect events experienced and the various outcomes. I am including neuroticism because of its strong relationship with the number of events experienced. As predicted, individuals who reported more total lifetime events, Criterion A1, non-A1, and direct and indirect events reported poorer current functioning in terms of mental and physical health, GPA and world assumptions as well as higher levels of neuroticism, with effect sizes in the small to medium range (r 's = -.06 to .42). Unexpectedly, the number of lifetime non-Criterion A1 events reported was *more* strongly related to all outcomes, excluding GPA but including neuroticism, than was the number of lifetime Criterion A1 events reported. Seven of the eleven differences in correlations were statistically significant: Neuroticism, $z = -3.33$, $p < .001$, PTSD $z = -2.05$, $p = .02$, Distress $z = -4.12$, $p < .001$, Life Satisfaction $z = 2.43$, $p < .01$, SF-12 Mental Health $z = 4.59$, $p < .001$, WAQ-Trust $z = -2.47$, $p < .05$, and WAQ-Control $z = -2.1$, $p < .05$. Additionally, the number of directly experienced events was more strongly related to outcomes than was the number of indirectly experienced events. Seven of the eleven differences in correlations were statistically significant: Neuroticism, $z = 3.13$, $p < .001$, PTSD $z = 2.85$, $p < .01$, Distress $z = 4.21$, $p < .001$, Life Satisfaction $z = -3.68$, $p < .001$, SF-12 Mental Health $z = -4.69$, $p < .001$, SF-12 Physical Health $z = -3.45$, $p < .001$, and WAQ-Trust $z = 2.24$, $p < .05$.

Mental Health Outcomes as a Function of Worst Event Characteristics

Prior to conducting the MANOVA analyses comparing outcomes as a function of worst event characteristics, I examined the correlations among the outcome measures to

determine which variables to include in each analysis. These analyses suggested that the PTSD, distress, life satisfaction, and SF-12 subscales were sufficiently correlated to include in one MANOVA (r 's = .36 to .65; mean r = .51) and the WAQ subscales in another MANOVA (r 's = .25 to .44; mean r = .32). GPA consistently had smaller associations (r 's = -.01 to .13) with the other outcomes and thus was examined in a separate analysis.

Mean scores on the outcome variables are included in Table 3. The mean PTSD symptom severity score was 31.12 in the total sample, with 82 individuals (8%) meeting or exceeding the established cut-off score (50) for PTSD. There was a significant difference in PTSD symptoms between the two samples, with community college students reporting significantly more symptoms ($M=33.73$, $SD=13.57$) than university students ($M=30.47$, $SD=12.82$), $t(1073) = -3.05$, $p=.002$, $d=.25$. Community college students also reported significantly worse physical health ($M=81.64$, $SD=17.91$) than university students ($M=85.53$, $SD=14.66$), $t(1073) = 3.44$, $p=.001$, $d= -.24$, lower life satisfaction ($M=4.54$, $SD=1.44$ vs. $M=4.94$, $SD=1.38$; $t(1068) = 3.91$, $p<.001$, $d= -.28$), and lower world assumptions in trust and goodness of people ($M=3.56$, $SD=0.92$ vs. $M=3.76$, $SD=0.80$; $t(1070) = 3.40$, $p<.001$, $d= .23$), controllability and predictability of people ($M=2.61$, $SD=0.80$ vs. $M=2.79$, $SD=0.72$; $t(1071) = 3.40$, $p<.001$, $d= .24$), and controllability of events ($M=3.70$, $SD=0.72$ vs. $M=3.87$, $SD=0.67$; $t(1069) = 3.477$, $p<.001$, $d= .24$). There were no significant differences between schools on the BSI, MCS, the safety of the world WAQ subscale or for self-reported GPA, all p 's $>.10$.

I then conducted two MANOVA's for mental and physical health outcomes (PTSD, general distress, life satisfaction, the two SF-12 subscales) and the WAQ

subscales, and an ANOVA for self-reported GPA at T1 as the dependent variables and the two worst-event characteristics (Criterion A1 vs. non-Criterion A1; direct vs. indirect event) as the independent variables (see Table 3). These analyses assess whether individuals who nominated a Criterion A1 event (vs. a non-Criterion A1 event) or a directly-experienced event (vs. an indirectly-experienced event) differed in terms of current functioning.² There were significant differences in mental and physical health for Criterion A1 vs. non-A1 events, for direct and indirect events, and for the interaction between Criterion A1 status and directness of event. Univariate tests were examined for each of these significant multivariate effects. For Criterion A1 status, the only significant univariate test was for physical health, such that those who nominated a non-Criterion A1 event as worst had better physical health functioning than those who nominated a Criterion A1 event as worst. Univariate tests revealed significant differences between direct and indirect worst events for PTSD symptoms, distress, and the mental and physical health subscales of the SF-12 such that direct events were associated with worse functioning than indirect events. Finally, univariate tests revealed significant differences in the physical health subscale of the SF-12 for the interaction between Criterion A1 status and direct and indirect events. Specifically, there was little difference between direct and indirect events for non-A1 events, but directly experienced Criterion A1 events were associated with poorer health than indirectly experienced Criterion A1 events. Multivariate tests revealed no significant differences in the WAQ subscales for Criterion A1 vs. non-A1 events, for direct and indirect events, or for the interaction between Criterion A1 status and directness of event. Finally, there were significant differences in self-reported GPA between Criterion A1 and non-A1 events, such that those who

nominated a Criterion A1 event as worst had significantly lower GPAs than those who nominated a non-A1 event as worst.

Exposure to Traumatic Events between T1 and T2

Given the broad range of events assessed, most (70%, $n= 551$) of the T2 participants reported experiencing at least one event between T1 and T2 (see Table 4). The most common events overall were close other being unsupportive, experiencing loneliness for an extended period of time, witnessing the maltreatment of a close other, and undesired relationship dissolution. The mean number of total events experienced between T1 and T2 was 2.51 ($SD = 4.08$; range = 0 to 26). The community college sample reported a higher average number of non-A1 events between T1 and T2 ($M= 3.25$, $SD=4.95$) than the university sample ($M=2.34$, $SD=3.83$), $t(787) = -2.47$, $p <.01$, $d = .21$.

Non-Criterion A1 events. The prevalence rates for the non-A1 events between T1 and T2 ranged from 20% (close other being unsupportive) to .3% (self/partner miscarriage) (see Table 4). The mean number of total non-Criterion A1 events reported between T1 and T2 was 1.98 ($SD = 3.22$; range = 0 to 18); 59% reported at least one non-Criterion A1 event. Every non-Criterion A1 event except one (emotional/ psychological mistreatment) was reported by a higher percentage of the community college than the university sample. Chi-square tests determined that none of the differences between the two samples was significant at the .002 (.05/24) level for the 24 non-A1 events, although the community college sample reported a higher average number of non-A1 events between T1 and T2 ($M= 2.52$, $SD=3.67$) than the university sample ($M=1.81$, $SD=2.96$), $t(787) = -2.5$, $p <.01$, $d = .21$.

Criterion A1 events. The prevalence rates for the Criterion A1 events ranged from 6% (sudden death of a close other) to .4% (living or working in a war zone, motor vehicle accident and being beaten up by a stranger) (see Table 4). The mean number of total Criterion A1 events reported (not including “other” events) was 0.36 ($SD = 0.74$, range = 0 to 5) and 27% reported at least one Criterion A1 event. Nine of the 15 Criterion A1 events were reported by a higher percentage of the community college than the university sample. Chi-square tests revealed that none of these differences was significant at the .002 level. The community college sample also did not report a higher average number of Criterion A1 events between T1 and T2 ($M = .42$, $SD=.80$) than the university sample ($M = .35$, $SD=.72$).

Other events. In addition, 12% of the participants reported “other” stressors on the open-ended question on the TLEQ. Between 4% and 8% of the total sample also reported a close other’s serious mental health problems, their own mental health problems, or their own suicidality as stressors in the past 2 months. Chi-square tests revealed that none of these differences was significant at the .002 level.

Worst events at T2. The most frequently nominated worst events at T2 were a close other being unsupportive (10%; $n=56$), experiencing an extended period of loneliness (9%; $n=47$), witnessing the maltreatment of a close other (7%; $n=38$), undesired relationship dissolution (7%; $n=37$), unexpected death of a loved one (5%; $n=27$), and unrequited love (5%; $n=26$) (see Table 4). Five of these six events were non-Criterion A1 events. *If they were experienced*, the non-A1 events most likely to be nominated as worst events were undesired relationship dissolution (49%, 37/45), being cheated on (46%; 11/24), and mutually desired end of a relationship (37%; 20/54). *If they*

were experienced, the A1 events most likely to be nominated as worst events were own life threatening illness (83%, 5/6), the unexpected death of a loved one (58%; 27/47), and close other committed suicide (36%; 5/14).

Creating PTE and No PTE Groups

Individuals who completed the T2 survey, experienced an event between T1 and T2, and said that it had caused them considerable ($n = 121$) or extreme ($n = 32$) distress in the two weeks previous to the T2 survey made up the PTE group ($n = 153$). The most commonly endorsed worst events between T1 and T2 in the PTE group were close other unsupportive ($n = 18$, 12%) and sudden and unexpected death of a close other ($n = 12$, 9%). The no PTE group ($n = 198$) consisted of individuals who either did not endorse experiencing an event between T1 and T2 ($n = 80$) or experienced an event that caused them no distress ($n = 118$).

The PTE group endorsed a significantly greater number of lifetime events ($M = 16.77$, $SD=7.12$) than the no PTE group ($M = 12.89$, $SD= 7.20$), $t(329) = -5.03$, $p < .001$, $d = .54$, and had higher neuroticism scores ($M = 4.74$, $SD= 1.22$) than the no PTE group ($M = 3.98$, $SD=1.25$), $t(319) = 5.66$, $p < .001$, $d = .62$. As mentioned, these variables were added as covariates in analyses comparing the two groups.

Comparing Changes in Functioning from T1 to T2 in PTE and No PTE Groups

I created change scores for all measures by subtracting T1 scores from T2 scores.³ The creation of change scores is necessary for calculating reliable change (see below) and is considered an appropriate method to assess change over time (Williams & Zimmerman, 1996). Prior to conducting MANCOVA analyses comparing the PTE and no PTE groups, I examined the correlations among the change scores to determine which

variables to include in each analysis. These analyses suggested that changes in PTSD, distress, life satisfaction, and SF-12 MCS subscales from T1 to T2 were sufficiently correlated to include in one MANCOVA ($|r|$'s = .13 to .40; mean $r = .25$). Because the correlations between the PCS and the mental health scales were smaller ($|r|$'s = .05 to .18; mean $r = .11$), I ran the analyses both with and without the PCS in the MANCOVA, and the pattern of results remained the same. Thus I report the MANCOVA with the PCS included with the mental health measures. Changes in the WAQ subscales ($|r|$'s = .08 to .39; mean $r = .22$) were sufficiently correlated to include in one MANCOVA.

I next conducted two MANCOVA's with T1 to T2 change in mental and physical health outcomes (PTSD, general distress, life satisfaction, the two SF-12 subscales) and change in the WAQ subscale scores (Trust, Safety, Comprehensibility of People and Controllability of the World) as the dependent variables, neuroticism and number of lifetime traumas as the covariates, and PTE group as the independent variable (see Table 6). These analyses assessed whether individuals in the PTE group reported more change in functioning than the no PTE group.

Both MANCOVAs indicated significant differences between the PTE and no PTE groups in terms of changes in functioning over the 2-month period. In the first MANCOVA, those in the PTE group had significantly greater increases in distress (a medium effect), and greater decreases in mental (a medium effect) and physical health (a small effect) functioning than those in the no PTE group. In the second MANCOVA, only the univariate test for the WAQ Controllability of the World subscale was significant with a small effect size, indicating that those in the PTE group reported

greater decreases from T1 to T2 in world assumptions related to the controllability of events than those in the no PTE group.

Reliable Change Between T1 and T2

I next calculated reliable change scores using the method outlined by Jacobson and Truax (1991) to assess whether the changes in outcomes from T1 to T2 exceeded change based on measurement error alone (see Table 7). For almost all of the measures, the PTE group demonstrated more reliable change in a negative direction (i.e., increases on distress measures, decreases on well-being measures) than the no PTE group (e.g., 35% for PTSD for the PTE group compared to 20% for the no PTE group). The only exception was the WAQ Safety of the World subscale on which slightly more of those in the no PTE group (3%) than the PTE group (1%) reported reliable decreases. In order to compare whether these reliable increases and decreases were significantly different between the PTE and no PTE groups, I ran separate chi-square test for both reliable increase and decrease for each variable and four of those differences were significant (reliable increases for PTSD and distress and reliable decreases for life satisfaction and MCS). In line with my hypotheses, in the PTE group there were more reliable increases (than decreases) for distress and more reliable decreases than increases for life satisfaction, mental and physical health and three of the four world assumptions subscales. There were two exceptions to this pattern: more reliable decreases (19%) than increases (16%) on PTSD symptoms in relation to the T1 events and more reliable increases (3%) than decreases (1%) on the WAQ Safety of the World subscale.

Discussion

The purpose of this study was to assess the lifetime and two-month prevalence of

a wide range of events among undergraduate students and the frequency with which various Criterion A1 and non-A1 events were nominated as most distressing. I also assessed the associations between the number of events and a wider array of outcomes and between types of worst events (Criterion A1 and non-A1, direct and indirect) and outcomes. Additionally I assessed prospective changes in mental and physical health and world assumptions in college students following a wide range of Criterion A1 and non-A1 PTEs. My study improved on previous research by using a checklist of a wide range of events, assessing change in outcomes following event exposure prospectively, comparing trauma exposure in community college and university students, using an established PTSD cut point and assessing a variety of outcomes beyond PTSD. I also included a no-PTE comparison group and assessed reliable change. Key findings are discussed below, as well as limitations and future directions.

Exposure to Events

As expected, the non-Criterion A1 events assessed were quite common at both T1 and T2, with more than 50% of the participants endorsing 12 of the 25 non-A1 events during their lifetime and at least 10% endorsing 11 of the 24 events between T1 and T2. Additionally, the *overall* probability of nominating some of these events (e.g., being cheated on, other's substance abuse, undesired relationship dissolution) as most distressing was among the highest of any of the events. However, the *conditional* probability of nominating these as worst events was small. Criterion A1 events were also commonly experienced over the lifetime, with over 10% of the sample endorsing 13 of the 20 events, but relatively rare between T1 and T2, with none of the events endorsed by more than 6% of the participants. Further exploration revealed that those who nominated

non-Criterion A1 events as their most distressing events had experienced “serious” Criterion A1 events such as sexual assault or partner abuse at T1 and T2, yet still nominated these non-A1 events as their worst. These findings replicate previous research regarding lifetime PTE exposure rates in undergraduate examples that assessed a broad range of events (e.g., Anders et al., 2012; Scarpa, 2001). Additionally, since people perceive non-Criterion A1 events to be significant and distressing, even if they have experienced other Criterion A1 events, the findings also suggest the importance of assessing these commonly experienced non-Criterion A1 events. Furthermore, although, on average, relatively few participants experienced *individual* Criterion A1 events over the course of two months, participants commonly experienced both non-A1 and A1 events over this short period.

At both T1 and T2, community college students reported experiencing almost all of the events more frequently than university students. Community college students also reported higher levels of PTSD symptom severity and lower levels of physical health and life satisfaction. To my knowledge, this is the first study to compare lifetime and prospective experiences of traumatic and stressful events and associated mental and physical health and academic outcomes between community college and university samples. These results suggest that community college students may be in particular need of outreach regarding past and current traumatic and stressful events.

Number of Events and Outcomes

Generally, individuals who reported more lifetime PTEs also reported poorer outcomes in a range of areas, including greater PTSD symptom severity, more general distress, lower life satisfaction, poorer general health, and lower GPAs. The probable

PTSD was 8% for the total sample, similar to previous research (e.g., Frazier et al., 2009). Thus, students who have experienced these events may be having difficulties in multiple realms of functioning and not just in typically assessed areas of mental health. This was true for all types of events (i.e., Criterion A1 and non-A1 and direct and indirect events). However, the number of non-Criterion A1 and directly experienced events tended to be more strongly correlated with negative outcomes than were the number of Criterion A1 and indirectly experienced events reported, respectively, and there were multiple significant differences between these associations. This is consistent with the results of previous studies (e.g., Anders et al., 2011; Brewin, Andrews, & Valentine, 2000; Ozer, Lipset, & Weiss., 2003) that have found a significant relationship between the number of lifetimes traumas and PTSD, although it is the first study to examine differences in the relations between number of Criterion A1 and non-A1 and direct and indirect events and outcomes. These findings support my assertion that non-Criterion A1 events are important to assess because the cumulative experience of these events is more strongly related to many kinds of outcomes than is the cumulative experience of Criterion A1 events.

Worst Event Dimensions and Outcomes at T1

As expected, at T1 there were no significant differences between Criterion A1 and non-A1 worst events on the outcome variables except for physical health and GPA, suggesting that individuals who nominated a non-Criterion A1 event as their worst event had similar outcomes as those who nominated a Criterion A1 event as their worst. For both physical health and GPA, nominating a non-A1 event was associated with significantly better functioning (e.g., better physical health and higher GPA) compared to

nominating a Criterion A1 event. There was a significant difference in outcomes between those who nominated directly vs. indirectly-experienced worst events with regard to PTSD, distress, mental health, and physical health. In line with most previous research (e.g., Anders et al., 2011), individuals who nominated directly-experienced events as worst events reported poorer current functioning.

Change in Functioning in PTE and No PTE Groups

As expected, individuals in the PTE group reported larger decreases in functioning (e.g., more distress, poorer mental and physical health functioning, decreases in control-related world assumptions) than the no PTE group, controlling for number of lifetime events and neuroticism. Contrary to my hypotheses, the PTE and no PTE groups did not differ significantly in terms of change in PTSD symptoms related to their worst lifetime event, life satisfaction, or three of the world assumption scales. It may be that, by including non-Criterion A1 events, PTSD was less relevant, although previous research has demonstrated similar levels of PTSD symptoms and rates in Criterion A1 and non-A1 worst events (e.g., Anders et al., 2011).

Reliable Change in Pre to Post-event Outcomes

Generally, the PTE group demonstrated more reliable change than the no PTE group. As predicted, the PTE group generally had more increases than decreases in reliable change for distress (21% reported reliable increases) and more decreases than increases in reliable change for life satisfaction, mental and physical health and world assumptions (1-17% reported reliable decreases). PTSD was the only outcome that was contrary to my expectations in that there were slightly more decreases than increases in reliable change. My results are somewhat consistent with the other study that assessed

reliable change (Frazier, Tennen et al., 2009), although the percentage of participants reporting reliable change in my sample was somewhat different than their sample for some of the same variables assessed (i.e., 7% of their sample reported reliable decreases in life satisfaction compared to 17% of my sample). Because there is so little prospective data, it is difficult to compare these results to previous research, except for the world assumptions scales. My findings are in line with previous findings (Anders et al., 2010; Poulin & Silver, 2007) which suggest the amount of pre- to post-PTE change in assumptions is small.

Limitations

Although this study improved on previous work, it is limited in certain ways. My sample consisted of undergraduates who were primarily White and female which limits the generalizability of my results, although I did include a community college sample that was more diverse in terms of age and race. Second, because of the large sample, I used all self-report measures rather than a structured clinical interview which is the preferred method of assessing PTSD and mental health functioning. Third, I do not currently have psychometric data on the new trauma questions we developed. Additionally, my data are correlational and thus I cannot conclude that these events caused the outcomes. Fourth, although I did gather exposure data prospectively, the window of exposure was only two months and it may be more illustrative to gather information on event exposure over a longer period of time. This time frame can still provide valuable information about changes in functioning of students while in college. Finally, because I assessed only two time points, I could not identify different patterns of adjustment (e.g., Bonanno & Mancini, 2012).

Implications for Research

Given that non-Criterion A1 events generally are associated with similar levels of PTSD symptom severity as are Criterion A1 events, future research should continue to assess at least a sample of these events. It may be useful to focus on events that are primarily about interpersonal relationships (e.g., undesired relationship dissolution, being cheated on), as these have the highest conditional probability of being nominated as worst events and there are strong theoretical reasons for their adverse effects (e.g., Smart Richman & Leary, 2009). Because the PTSD criteria are being changed for the DSM-V and are constantly evolving, it is important that we understand the range of events that can cause PTSD.

Additionally, as previous research has found, the cumulative number of events is highly associated with a variety of outcomes. Given my findings that the number of non-A1 and directly experienced events are even more highly associated with outcomes than are the number of A1 events, assessing lifetime exposure to these events is important.

Because so many students attend community college, and because there were many differences between these students and university students in lifetime exposure to specific events and in outcomes, more research is needed in this population. Finally, including assessments of multiple important domains for college students beyond just mental health will help us understand the role of such events in student adjustment.

Given how little overall change was reported by the sample from pre to post-event, it is essential that researchers assess and report pre to post-event change, rather than making the assumption that events necessarily provoke change across a wide variety of outcomes. This is especially important for world assumptions where the literature had

previously assumed that much change would be reported. Additionally, although other researchers have begun to empirically identify the complexity and diversity of patterns of adjustment that occur *after* an event (see Bonanno & Mancini, 2012 for a review), my findings indicate that it is essential to include pre-event functioning as that may alter trajectories of adjustment and allow researchers to identify these patterns more accurately.

Implications for Training and Practice

Counselors and faculty members who work with undergraduate students need to be aware that most students have been exposed to both Criterion A1 and non-A1 events and that this exposure continues during the college years. Those working at community colleges are even more likely to have clients and students who have experienced and will continue to experience a variety of stressful and traumatic events. Furthermore, students often find the more common non-A1 events to be just as distressing as A1 events. Counselors may want to assess past and current exposure to these events and take their impact on clients seriously. Finally, because checklists are recommended to assess event exposure (e.g., Elhai, Ford, Naifeh, 2010), perhaps a few of the key non-A1 events could be added to an events checklist and assessed at intake. For instance, because of the finding that directly experienced, relationship oriented events are associated with increased symptoms and experienced as more distressing than indirectly experienced and non-relationship oriented events, some of these events could be added to a typical Criterion A1 checklist. Additionally outreach programs could provide psychoeducation about how common these events are, how they impact students, and where to go to find help in coping with such events.

Table 1

Lifetime Event Exposure and Nomination as Worst Event

Event	Experienced			Worst n (%)	Conditional (% of exp'd)
	University N = 842	Community College N = 242	Total N = 1084		
<u>Non-Criterion A1</u>					
<u>events</u>					
1. Someone said hurtful things ^a	685 (81%)	207 (86%)	892 (82%)	16 (2%)	2%
2. Broken an important promise ^a	562 (67%)	170 (70%)	732 (68%)	17 (2%)	2%
3. Close other unsupportive ^a	556 (66%)	167 (69%)	723 (68%)	37 (3%)	5%
4. Physically or verbally bullied ^a	518 (62%)	163 (67%)	681 (63%)	23 (2%)	3%
5. Non-consensual end of relationship ^a	511 (61%)	165 (68%)	676 (62%)	97 (9%)	14%
6. Witnessed the psychological mistreatment of a close other ^b	508 (60%)	153 (63%)	661 (61%)	24 (2%)	4%

7. Someone excluded participant ^a	487 (58%)	160 (66%)	647 (60%)	8 (1%)	1%
8. Emotional/psychological mistreatment*** ^a	456 (54%)	178 (74%)	634 (59%)	39 (4%)	6%
9. Deceived about something important ^a	472 (56%)	150 (62%)	622 (57%)	15 (1%)	2%
10. Lonely for extended periods of time ^a	465 (55%)	147 (61%)	612 (57%)	34 (3%)	6%
11. Undesired relationship dissolution ^a	458 (54%)	155 (64%)	613 (57%)	23 (2%)	4%
12. Social isolation for extended period ^a	408 (49%)	135 (56%)	534 (50%)	18 (2%)	4%
13. Other substance abuse* ^b	394 (47%)	141 (58%)	535 (49%)	52 (5%)	10%
14. Discriminated against ^a	360 (43%)	123 (51%)	483 (45%)	28 (3%)	6%
15. Unrequited love** ^a	342 (41%)	128 (53%)	470 (43%)	26 (2%)	6%
16. Deliberately humiliated by others ^a	326 (39%)	118 (49%)	444 (41%)	5 (1%)	1%
17. Emotional or physical	321 (38%)	117 (48%)	438	14	3%

neglect ^a			(40%)	(1%)	
18. Cheated on by romantic partner*** ^a	270 (33%)	122 (50%)	401 (37%)	46 (4%)	12%
19. Intense homesickness for extended period ^a	269 (32%)	80 (33%)	349 (32%)	22 (2%)	3%
20. Uninvited/unwanted sexual attention ^a	248 (30%)	85 (35%)	333 (31%)	4 (0%)	1%
21. Stalked ^a	118 (14%)	53 (22%)	171 (16%)	3 (0%)	2%
22. Own substance abuse*** ^a	83 (10%)	56 (23%)	139 (13%)	5 (1%)	4%
23. Self or partner abortion*** ^c	35 (4%)	34 (14%)	69 (6%)	10 (1%)	15%
24. Self or partner miscarriage*** ^c	15 (2%)	26 (11%)	41 (4%)	0 (0%)	0%

Criterion A1 events

1. Sudden and unexpected death of close other ^b	388 (46%)	128 (53%)	516 (48%)	160 (15%)	31%
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2. Loved one serious accident/injury/illness ^b	326 (39%)	101 (42%)	427 (39%)	37 (3%)	9%
3. Witnessed family violence** ^b	231 (27%)	94 (39%)	325 (30%)	35 (3%)	11%
4. Someone close attempted suicide ^b	234 (28%)	80 (33%)	152 (14%)	24 (2%)	8%
5. Natural disaster ^a	165 (20%)	48 (20%)	213 (20%)	8 (1%)	4%
6. Other type of accident ^c	135 (16%)	44 (18%)	179 (17%)	19 (2%)	11%
7. Close other committed suicide ^b	108 (13%)	44 (18%)	152 (14%)	17 (2%)	2%
8. Threatened*** ^a	90 (11%)	48 (20%)	138 (13%)	7 (1%)	5%
9. Physically hurt by a romantic partner*** ^a	78 (9%)	52 (22%)	130 (12%)	10 (1%)	8%
10. Motor Vehicle accident ^a	91 (11%)	31 (13%)	122 (11%)	20 (2%)	16%
11. Witnessed someone beaten *** ^b	74 (9%)	41 (17%)	115 (11%)	2 (0%)	2%

12. 13-18 years old, forced sexual contact*** ^a	69 (8%)	39 (16%)	108 (10%)	16 (2%)	15%
13. Childhood physical abuse*** ^a	66 (8%)	40 (17%)	106 (10%)	9 (1%)	9%
14. Sexual assault, after age 18 ^a	59 (7%)	30 (12%)	89 (8%)	10 (1%)	11%
15. Own life threatening illness ^a	67 (8%)	19 (8%)	89 (8%)	15 (1%)	17%
16. Robbed, mugged, or held-up using threat of force* ^a	49 (6%)	28 (12%)	77 (7%)	7 (1%)	9%
17. Beaten up by a stranger*** ^a	38 (5%)	35 (15%)	73 (7%)	2 (0%)	3%
18. Before 13, forced sexual contact with someone 5+ years older*** ^a	38 (5%)	34 (14%)	72 (7%)	12 (1%)	17%
19. Before 13, forced sexual contact with someone close in age* ^a	44 (5%)	26 (11%)	70 (7%)	5 (1%)	7%
20. Lived or worked in a	22 (3%)	11 (5%)	33	4	12%

war zone ^a			(3%)	(0%)	
<u>Other events</u>					
Other distressing events ^c	416 (49%)	46 (60%)	562	12	2%
			(52%)	(1%)	
Other serious mental health problems ^b	324 (39%)	107 (44%)	431	26	6%
			(40%)	(2%)	
Own suicidal ideation/attempt*** ^a	240 (29%)	98 (41%)	338	20	6%
			(31%)	(2%)	
Own mental health problems ^a	147 (18%)	51 (21%)	198	35	17%
			(18%)	(3%)	

Note. ^a Direct event ^b Indirect event ^c Coded as direct or indirect; Chi-square differences for experienced events between university and community college samples, * $p < .002$, ** $p < .001$, *** $p < .0001$.

Table 2

Correlations among Neuroticism, Number of Events and Outcomes

	Total # events	# Criterion A1 events	# non- Criterion A1 events	# direct events	# indirect events
Neuroticism	.25***	.12***	.26*** ^c	.28***	.15*** ^c
PTSD	.38***	.27***	.35*** ^a	.38***	.27*** ^b
Distress	.40***	.23**	.39*** ^c	.42***	.26*** ^c
Life Satisfaction	-.28***	-.17***	-.27*** ^b	-.31***	-.16*** ^c
SF-12 – Mental Health	-.39***	-.21***	-.39*** ^c	-.42***	-.24*** ^c
SF-12 – Physical Health	-.30***	-.22***	-.28***	-.31***	-.17*** ^c
GPA	-.13***	-.12***	-.12***	-.13***	-.11**
WAQ - Trust	-.30***	-.20***	-.30*** ^a	-.31***	-.22*** ^a
WAQ - Safety	-.19***	-.14***	-.19***	-.18***	-.18***
WAQ - CPP	-.13***	-.09**	-.14***	-.12***	-.15***
WAQ - Control	-.13***	-.06	-.14*** ^a	-.15***	-.07*

* $p < .05$, ** $p < .01$, *** $p < .001$. N's range from 1051-1084 because of missing data. Significant

differences between correlations ^a $p < .05$ ^b $p < .01$ ^c $p < .001$.

Table 3

Mental Health Outcomes Following Self-Nominated Worst Lifetime Events at T1

	Overall mean (SE) N=1084	Univariate F	Criterion A1 N=432	Non-A1 N=632 ^a	Effect Size (<i>d</i>)	Univariate F	Direct N=663	Indirect N=393 ^b	Effect Size (<i>d</i>)	Interaction Univariate F
1.Multivariate F	(5, 1042)		2.32*				4.62***			3.03**
PTSD	1.82 (.03)	0.56	1.84 (.04)	1.80 (.04)	-.08	4.62***	1.94 (.04)	1.70 (.04)	.28	.78
Distress	1.69 (.02)	0.42	1.67 (.03)	1.70 (.03)	-.03	5.95*	1.74 (.03)	1.63 (.03)	.17	.04
Life Satisfaction	4.90 (.05)	0.38	4.93 (.07)	4.87 (.08)	.12	3.10	4.81 (.07)	4.99 (1.35)	-.15	.88
SF-12 – MCS	63.94 (.82)	0.003	63.89 (1.14)	63.99 (1.17)	.08	8.60**	61.55 (1.05)	66.34 (.08)	-.21	3.85
SF-12 – PCS	84.32	8.13**	82.68 (.80)	85.96	-.11	11.18**	82.40	86.24	-.21	4.28*

	(.57)			(.82)			(.74)	(.88)		
2. GPA	3.24 (.02)	10.32**	3.17 (.03)	3.31 (.03)	-.25	3.68	3.20 (.03)	3.28 (.03)	-.14	3.60
3. Multivariate F	(4, 1052)		1.78				1.39			1.96
WAQ - Trust	3.74 (.03)	0.84	3.77 (.04)	3.71 (.05)	.11	0.99	3.71 (.04)	3.77 (.05)	-.12	0.15
WAQ - Safety	2.62 (.02)	3.23	2.57 (.03)	2.66 (.03)	-.14	0.19	2.63 (.03)	2.61 (.04)	.08	0.36
WAQ - CPP	2.75 (.03)	0.13	2.76 (.04)	2.74 (.04)	-.03	3.10	2.80 (.04)	2.70 (.04)	.11	1.24
WAQ - Control	3.87 (.01)	0.01	3.87 (.04)	3.87 (.04)	.04	0.001	3.87 (.03)	3.87 (.04)	-.02	7.23**

^a 20 events could not be coded as Criterion A1 or not. ^b 28 events could not be coded as direct or indirect. * $p < .05$ ** $p < .01$

*** $p < .001$

Table 4

Event Exposure and Nomination as Worst Event between T1 and T2

Event	Experienced			Worst n (%)	Conditional % of exp'd
	University N=639	Community College N=151	Total N=790		
<u>Non-Criterion A1</u>					
<u>events</u>					
1. Close other unsupportive	22 (19%)	37 (25%)	159 (20%)	56 (10%)	35%
2. Lonely for extended period	94 (15%)	35 (23%)	129 (16%)	47 (9%)	36%
3. Someone said hurtful things	80 (13%)	27 (18%)	107 (14%)	18 (3%)	17%
4. Witnessed the psychological mistreatment of a close other	81 (13%)	24 (16%)	105 (13%)	38 (7%)	36%
5. Broken an important promise	72 (11%)	26 (17%)	98 (12%)	22 (4%)	22%
6. Someone excluded	74 (12%)	22 (15%)	96	12 (2%)	16%

participant			(12%)		
7. Deceived about something important	62 (10%)	22 (15%)	84 (11%)	12 (2%)	14%
8. Unrequited love	63 (10%)	20 (13%)	83 (11%)	26 (5%)	31%
9. Social isolation for extended period	60 (9%)	21 (14%)	81 (10%)	23 (4%)	28%
10. Other substance abuse	62 (10%)	18 (12%)	80 (10%)	23 (4%)	29%
11. Undesired relationship dissolution	56 (9%)	19 (13%)	75 (10%)	37 (7%)	49%
12. Emotional/psychological mistreatment	55 (9%)	13 (9%)	68 (9%)	17 (3%)	25%
13. Discriminated against	49 (8%)	13 (9%)	62 (8%)	10 (2%)	16%
14. Emotional or physical neglect	43 (7%)	14 (9%)	57 (7%)	5 (1%)	9%
15. End of relationship	38 (6%)	15 (10%)	53 (7%)	20 (4%)	37%
16. Physically or verbally bullied	40 (6%)	11 (7%)	51 (7%)	8 (1%)	16%

17. Intense homesickness	33 (5%)	12 (8%)	45 (6%)	13 (2%)	29%
18. Deliberately humiliated by others	22 (3%)	11 (7%)	33 (4%)	9 (2%)	26%
19. Uninvited/unwanted sexual attention	22 (3%)	9 (6%)	31 (4%)	4 (1%)	13%
20. Cheated on by romantic partner	14 (2%)	10 (7%)	24 (3%)	11 (2%)	46%
21. Own substance abuse struggles	12 (2%)	7 (5%)	19 (2%)	4 (1%)	21%
22. Stalked	10 (2%)	8 (5%)	18 (2%)	1 (.2%)	6%
23. Self or partner abortion	2 (.3%)	2 (1%)	4 (.5%)	0 (0%)	0%
24. Self or partner miscarriage	1 (.2%)	1 (1%)	2 (.3%)	0 (0%)	0%
<u>Criterion A1 events</u>					
1. Sudden and unexpected death of close other	36 (6%)	11 (7%)	47 (6%)	27 (5%)	58%
2. Loved one serious accident/injury/illness	28 (4%)	13 (9%)	41 (5%)	14 (3%)	34%

3. Close other attempted suicide	18 (3%)	6 (4%)	24 (3%)	4 (1%)	17%
4. Close other committed suicide	10 (2%)	4 (3%)	14 (2%)	5 (1%)	36%
5. Other type of accident	10 (2%)	3 (2%)	13 (2%)	2 (.4%)	15%
6. Sexual assault after age 18	9 (1%)	3 (2%)	12 (2%)	3 (1%)	25%
7. Natural disaster	9 (1%)	2 (1%)	11 (1%)	2 (.4%)	18%
8. Physically hurt by a romantic partner	8 (1%)	1 (1%)	9 (1%)	1 (.2%)	11%
9. Threatened	5 (1%)	2 (1%)	7 (1%)	0 (0%)	0%
10. Witnessed someone beaten by stranger	5 (1%)	2 (1%)	7 (1%)	2 (.4%)	29%
11. Own life threatening illness	5 (1%)	1 (1%)	6 (1%)	5 (1%)	83%
12. Robbed, mugged, or held-up using threat of force	3 (.5%)	2 (1%)	5 (1%)	2 (.4%)	25%
13. Motor vehicle accident	1 (.2%)	2 (1%)	3 (.4%)	0 (0%)	0%

14. Beaten up by a stranger	2 (.3%)	1 (1%)	3 (.4%)	1 (.2%)	33%
15. Lived or worked in a war zone	2 (.3%)	1 (1%)	3 (.4%)	0 (0%)	0%
<u>Other</u>					
<u>events</u>	72 (11%)	19 (13%)	91	30 (5%)	33%
Other distressing events			(12%)		
Other serious mental health problems	52 (8%)	12 (8%)	64 (8%)	23 (4%)	36%
Own mental health problems	30 (5%)	11 (7%)	41 (5%)	16 (3%)	39%
Own suicidal ideation/attempt	19 (3%)	11 (7%)	30 (4%)	2 (.4)	7%

Table 5

Correlations among Change in Outcomes from T1 to T2 for all T2 Participants

	1. Δ PTSD	2	3	4	5	6	7	8
2. Δ Distress	.38***							
3. Δ Life Satisfaction	-.13***	-.20***						
4. Δ SF-12 – MCS	-.18***	-.40***	.19***					
5. Δ SF-12 – PCS	-.06	-.18***	.05	.18***				
6. Δ WAQ - Trust	-.09**	-.13***	.14***	.15***	-.01			
7. Δ WAQ - Safety	-.07	-.05	.06	.15**	-.03	.17***		
8. Δ WAQ - CPP	-.07**	-.05	.06	.11**	-.01	.15**	.39***	
9. Δ WAQ - Control	-.05	-.13***	.12**	.15***	.09*	.17***	.08*	.12**

* $p < .05$, ** $p < .01$, *** $p < .001$. N's range from 774-785 because of missing data for some participants.

Table 6

MANCOVA's Comparing PTE and no PTE Groups on Changes in Outcomes from T1 to T2 with Neuroticism and Number of Lifetime Traumas as Covariates

	Overall mean (SE) N=335-6	Neuroticism	Number of Traumas at T1	Univariate F	PTE N=145	No PTE N=190-1	Effect Size (<i>d</i>)
1. Multivariate F	(5, 327)	0.58	0.91		8.63***		
		Univariate					
Δ PTSD	-.09 (.04)	0.47	0.09	0.56	.06 (.06)	-.11 (.05)	.26
Δ Distress	0.01 (.03)	1.30	1.22	18.27***	0.14 (.05)	-.12 (.04)	.50
Δ Life Satisfaction	-.06 (.07)	0.03	0.30	2.41	-.17 (.11)	.06 (.09)	-.19
Δ SF-12 – MCS	-1.73 (1.06)	0.20	2.84	31.74***	-8.16 (1.67)	4.70 (1.44)	-.64
Δ SF-12 – PCS	-1.49 (.80)	0.02	0.08	10.16**	-4.22 (1.25)	1.24 (1.08)	-.37
2. Multivariate F	(4,329)	0.56	3.80**		3.93**		
		Univariate					
Δ WAQ - Trust	.05 (.03)	0.63	9.10**	1.37	.00 (.05)	.09 (.05)	-.15
Δ WAQ - Safety	.05 (.03)	0.25	4.63*	3.73	-.01 (.05)	.11 (.04)	-.22
Δ WAQ - CPP	.02 (.04)	0.15	0.01	2.34	-.04 (.05)	.08 (.05)	-.18

Δ WAQ - Control	-.05 (.03)	1.66	0.77	10.11**	-.16 (.05)	.06 (.04)	-.38
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* $p < .05$ ** $p < .01$ *** $p < .001$.

Table 7

Reliable Change for PTE and No PTE Groups

Measure	Reliable Change Criterion	T2 No PTE Group				T2 PTE Group			
		N with valid scores	Reliable Decrease <i>n</i> (% of N)	Reliable Increase <i>n</i> (% of N)	Total Reliable Change <i>n</i> (% of N)	N with valid scores	Reliable Decrease <i>n</i> (% of N)	Reliable Increase <i>n</i> (% of N)	Total Reliable Change <i>n</i> (% of N)
PTSD	0.60	192	25 (13%)	13 (7%)	38 (20%)	153	29 (19%)	24 (16%)**	53 (35%)
Distress	0.48	192	26 (14%)	13 (7%)	39 (20%)	153	14 (9%)	32 (21%)***	46 (30%)
Life Satisfaction	1.10	195	15 (8%)	17 (9%)	32 (16%)	151	25 (17%)*	17 (11%)	42 (28%)
MCS	30.87	195	5 (3%)	17 (9%)	22 (11%)	148	23 (16%)***	7 (5%)	30 (20%)
PCS	25.45	195	4 (2%)	9 (5%)	13 (7%)	151	12 (8%)	6 (4%)	18 (12%)
WAQ - Trust	0.95	194	9 (5%)	14 (7%)	23 (12%)	150	14 (10%)	8 (5%)	22 (15%)
WAQ - Safety	1.06	194	6 (3%)	3 (2%)	9 (5%)	150	1 (1%)	5 (3%)	6 (4%)
WAQ - CPP	1.03	194	10 (5%)	8 (4%)	18 (9%)	150	11 (7%)	3 (2%)	14 (9%)
WAQ - Control	0.90	194	8 (4%)	10 (5%)	18 (9%)	149	13 (9%)	5 (3%)	18 (12%)

* $p < .05$ ** $p < .01$ *** $p < .001$ chi-square differences between reliable decreases and increases.

Footnotes

¹ Additional analyses conducted separately for each group confirmed that the pattern of relations among relations did not differ across groups.

² When mental health events were removed from the analyses, the multivariate F for Criterion A1 status became non-significant, $F(5, 1042) = 1.63, p = .15$. For the direct/indirect comparison, the univariate F 's for distress, $F(1, 856) = 11.32, p = .25$, and SF-12 Physical Health, $F(1, 856) = 3.83, p = .51$, became non-significant.

³ I also did these analyses with residual scores and the results were the same.

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Appendix A. List of non-TLEQ events assessed

- Has someone broken an important promise to you?
- Has someone close to you been unsupportive when you really needed him/her?
- Has someone deceived you about something important?
- Has someone ended any kind of relationship with you even though you wanted to continue the relationship?
- Have you ever been bullied (physically or verbally)?
- Have you been neglected emotionally or physically?
- Have you been treated differently by others because of your race, gender, physical characteristics, abilities, etc?
- Has someone close to you committed suicide?
- Has a romantic partner cheated on you?
- Has someone excluded you from something you really wanted to be a part of?
- Has someone said hurtful things about you behind your back?
- Has someone emotionally or psychologically mistreated you (e.g., said or done very hurtful things)?
- Have you ever felt isolated from the people around you (at school, work, etc.) for extended periods of time?
- Have you felt very lonely for extended periods of time?
- Has someone deliberately humiliated you?
- Have you ever had intense romantic feelings for someone who did not reciprocate them?
- Have you experienced intense feelings of homesickness for an extended period of time?
- Have you broken up with, separated from, or divorced a partner when you wanted to end the relationship or it was a mutual decision?
- Has someone close to you attempted suicide?
- Have you witnessed someone close to you being emotionally or psychologically mistreated?
- Have you had any of your own serious mental health problems?
- Has someone close to you had serious mental health problems?
- Have you struggled with alcohol or substance use?
- Has someone close to you struggled with alcohol or substance use?
- Have you ever thought about or attempted suicide?

Answered yes/no

Appendix B

Below I include information on measures used in the proposed analyses (Appendix C) that were not included in the main paper. The references below are included in the earlier reference section.

Peritramatic Emotional Response. To assess a wide array of subjective emotional responses to the worst events, I used the Subjective Emotional Responses Scale (Kilpatrick et al., 1998). In the DSM-IV field trial, each of the five factors (panic, fear, shame and violation of trust, dysphoria/negative affect, and numbing/unreality) of this scale was significantly higher in those individuals with lifetime and current PTSD compared to those without. The alpha coefficient in this sample was .82 at T1 and .87 at T2.

Peritraumatic Dissociation. Because peri-traumatic dissociative responses have been implicated as an important predictors of PTSD (Brewin, Andrews & Valentine, 2000), I included the 8-item Peritraumatic Dissociation Experiences Questionnaire, Self Report Version (PDEQ-SRV; Marmar et al, 2007). The rater version (Marmar, Weiss, & Metzler, 1995) is frequently used in PTSD research, and has demonstrated high internal consistency reliability ($\alpha = .80$) and strong convergent validity in previous studies (e.g., Marmar et al., 1995). Alphas in this sample were .86 at T1 and .89 at T2.

Perceived Control. The Perceived Control over Stressful Events (PCOSE; Frazier, Keenan et al., 2011) measure is comprised of 23 items and four subscales: past, present, and future control and future likelihood. Scores on the subscales have been found to have acceptable internal reliability, on average, in undergraduate samples (past control mean α

= .87; present control mean α = .81; future control mean α = .85; future likelihood mean α = .92) and to demonstrate discriminant, convergent and criterion related validity (Frazier, Keenan et al., 2011). In these analyses I only used the present control subscale, and the alpha coefficients were .80 at T1 and .76 at T2.

Social Support. Given previous research indicating that social support is heavily implicated in adjustment to traumatic and stressful life events, I administered measures of positive and negative social support. The 24-item Unsupportive Social Interactions Inventory (USII) has demonstrated excellent internal consistency (α = .90), and good evidence for the construct validity in college students (Ingram et al., 2001). Participants rated each item in relation to how others responded to their self-nominated worst event (1=none to 5=a lot) and contains four factors (distancing, bumbling, minimizing and blaming). In order to reduce the burden on participants and because the USII total scale and the four subscales were significantly correlated with each other, I administered the 2 highest-loading items from each of the four subscales, a method used in another study which demonstrated adequate reliability (α = .85; Frazier, Gavian et al., 2011). Alpha coefficients in this sample were .82 at T1 and .87 at T2. Positive social support was measured with a subset of the 19-item MOS Social Support Survey (Sherbourne & Stewart, 1991), which has demonstrated excellent internal consistency (α 's consistently in the .90's in several samples), as well as high convergent and discriminant validity and contains four subscales (emotional/informational support, tangible support, positive interaction, and affection). In order to reduce the burden on participants, I administered

the 2 highest-loading items from each of the four subscales. Alpha coefficients for the reduced 8-item scale in this sample were .92 at T1 and .93 at T2.

Appendix C

In this appendix I have included all of the hypotheses and proposed analyses included in my prospectus. Below each in bold I refer the reader to the portion of the paper where that hypothesis is addressed or in cases where the hypothesis was not included in the main paper, I include the relevant analyses and findings. Please note that in my proposal I included substance abuse and positive health behaviors as outcomes. Because these outcomes proved unwieldy or unreliable (e.g., 1 item measures), I eliminated them from all analyses. Additionally, although I discussed including actual GPA instead of participant reported GPA, I was not able to obtain this information from the community college. Given that the correlation between actual and participant reported GPA at T1 for the University sample was $r = .74$, I decided to use participant reported GPA as the outcome.

Hypotheses and Expected Analyses

Baseline Data

Hypothesis 1: I expect that the pre-trauma variables (neuroticism, number of lifetime traumas) and post-trauma variables (peri-traumatic emotions and dissociation, social support, perceived present control) will be associated with outcomes at T1 in similar ways to those found in previous research (see literature review in prospectus). Specifically, higher levels of neuroticism, greater numbers of lifetime traumas, more peri-traumatic emotions and dissociation and more unhelpful social support will be associated with poorer outcomes and greater helpful social support and present control will be associated with better outcomes at T1.

Bivariate correlations will be run among these variables to determine their associations.

Please see the following table for the results.

Correlations between Pre- and Post-PTE Variables and Outcomes at T1

T1 Outcome	Pre-PTE Variables		Post-PTE Variables				
	# Lifetime events	Neuroticism	Peri-traumatic Emotions	Dissociation	Unhelpful Social Support	Positive Social Support	Present Control
PTSD	.38***	.31***	.42***	.42***	.38***	-.27***	-.53***
Distress	.40***	.45***	.33***	.32***	.32***	-.33***	-.43***
Life Satisfaction	-.28***	-.32***	-.14***	-.08**	-.25***	.40***	.32***
SF-12-MCS	-.39***	-.45***	-.29***	-.22***	-.31***	.31***	.37***
SF-12-PCS	-.30***	-.24***	-.15***	-.18***	-.22***	.27***	.23***
WAQ - Trust	-.30***	-.30***	-.18***	-.12***	-.21***	.25***	.26***
WAQ - Safety	-.19***	-.19***	-.18***	-.19***	-.12***	.07*	.18***
WAQ - CPP	-.13***	-.15***	-.19***	-.17***	-.12***	.05	.15***
WAQ - Control	-.13***	-.22***	-.13***	-.12***	-.13***	.24***	.37***

Participant	-.13***	-.04	0.07*	-.04	-.03	.09**	.01
Reported							
GPA							

* $p < .05$, ** $p < .01$, *** $p < .001$. N's range from 1013-1080 because of missing data.

My hypotheses were generally validated. Greater levels of neuroticism, numbers of lifetime traumas, more peri-traumatic emotions and dissociation and more unhelpful social support were associated with poorer outcomes and greater helpful social support and present control were associated with better outcomes at T1. Notable exceptions were for GPA which was unrelated to neuroticism, unhelpful social support, dissociation and present control and for the CPP scale of the WAQ which was unrelated to positive social support. The strongest relationships existed between present control and PTSD and distress.

Hypothesis 2a: I anticipate that individuals whose worst event at T1 is a non-Criterion A1 will report as much impairment (e.g., similar levels of distress, PTSD, physical symptoms, substance use, life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) as those whose worst event is a Criterion A1 event.

Please refer to Table 3 and the related text for these analyses.

Hypothesis 2b: I anticipate that individuals whose worst event at T1 is a relational event will report as much impairment (e.g., similar levels of distress, PTSD, physical symptoms, and substance use, life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) as those whose worst event is a non-relational event.

At a conference we attended and at which we presented some pilot data, it was argued that all events could be relational in nature. Upon further reflection, and after much discussion, coding and debate, we decided that this distinction was too unclear to include.

Hypothesis 2c: I anticipate that worst events at T1 that are directly experienced will be associated with greater impairment (e.g., greater distress, PTSD, physical symptoms, and substance use, less life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) compared to events that are indirectly experienced.

Please refer to Table 3 and the related text for these analyses.

Hypothesis 2d: I anticipate that worst events at T1 that are perceived as intentional will be associated with greater impairment (e.g., greater distress, PTSD, physical symptoms, and substance use, and less life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) compared to events that are perceived as unintentional.

Because I used a continuous measure for intentional harm (not at all intentional, a little intentional, mostly intentional, completely intentional, and not applicable – coded as missing), I ran a correlation between intentionality and the outcomes. See below for results.

Correlations between Extent of Intention and Outcomes at T1

Outcome	Extent of Intention
PTSD	.08**

Distress	.14**
Life Satisfaction	-.04
SF-12-MCS	-.08*
SF-12- PCS	-.09*
WAQ – Trust	-.06*
WAQ – Safety	-.01
WAQ – CPP	-.02
WAQ – Control	.02
Participant Reported GPA	-.06

* $p < .05$, ** $p < .01$. N's range from 913-975 because of missing data

Extent of intention was weakly related to PTSD, distress, mental and physical health functioning and the Trust subscale of the WAQ.

If all of the outcomes variables are moderately correlated, I will run four Multivariate Analysis of Variance (MANOVA) analyses, one for each independent variables (Criterion A or not, relational or not, direct/indirect, intentional/unintentional) to assess these group differences. Separate MANOVA's will be run because the independent variables are highly correlated (e.g., most of the relational events are non-Criterion A), and this multi-collinearity would prevent me from getting valid results about each individual predictor. If the positive outcome variables (life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) are not moderately correlated with the negative outcome variables (distress, PTSD, physical symptoms, and substance use), then I will run eight

MANOVA's, separating the positive and negative outcomes for each independent variable.

Please refer to Table 3 and associated text for these results. At a conference we attended and at which we presented some pilot data, it was argued that all events could be relational in nature. Upon further reflection, and after much discussion, coding and debate, we decided that this distinction was too unclear to include. Because I used a continuous measure for intentional harm (not at all intentional, a little intentional, mostly intentional, completely intentional, and not applicable – coded as missing), I could not run a MANOVA for intentionality and the outcomes (see above for results).

Prospective Data

Hypothesis 1: For the trauma group, I expect that the pre-trauma variables at T1 (neuroticism, number of lifetime traumas at T1) and post-trauma variables at T2 (peri-traumatic emotions and dissociation, perceived present control, social support) will be associated with changes in outcomes from T1 to T2 in similar ways to those found in previous research (see prospectus literature review). Specifically, higher levels of neuroticism, greater numbers of lifetime traumas, more peri-traumatic emotions and dissociation and negative social support will be associated with poorer outcomes and greater present control and positive social support will be associated with better outcomes at T2. Change scores from T1 to T2 will be calculated for all outcome measures and used as the dependent variables.

Bivariate correlations will be run among these variables to determine these associations using change scores in the outcomes from T1 to T2.

Please see the following table for the results.

Associations between Pre- and Post-PTE T2 Variables and Change in Outcomes from T1 to T2

Outcome	Pre-PTE Variables		Post-PTE Variables				
	# Lifetime events	Neuroticism	T2 Peri-traumatic Emotions	T2 Dissociation	T2 Unhelpful Social Support	T2 Positive Social Support	T2 Present Control
Δ PTSD	-.05	-.05	.24**	.18*	-.07	-.02	-.02
Δ Distress	-.09	.06	.26**	.22**	.08	-.03	-.27**
Δ Life Satisfaction	.01	-.11	-.07	-.07	-.11	-.04	.29**
Δ SF-12-MCS	.19*	-.01	-.21**	-.15	-.18	.03	.17
Δ SF-12-PCS	-.04	-.06	-.06	-.06	-.21**	.12	-.09
Δ WAQ - Trust	.24**	-.02	-.06	-.12	-.19*	.06	.19*
Δ WAQ - Safety	.08	.02	-.06	-.05	-.02	-.1	-.05
Δ WAQ -	-.03	-.01	-.02	.07	.03	.08	-.05

CPP							
Δ WAQ - Control	-.12	-.10	.02	-.12	.01	.03	.04

* $p < .05$, ** $p < .01$, *** $p < .001$. N's range from 145-153 because of missing data

Contrary to my expectations, neuroticism and positive social support were unrelated to changes in outcomes, and number of lifetime events was significantly related to improved mental health functioning and an increase in trust beliefs as measured by the WAQ subscale. In line with my hypotheses, more peritraumatic emotion and dissociation at T2 were significantly related to an increase in distress and PTSD and more emotion was significantly related to a decrease in mental health functioning from T1 to T2. The strongest relationships in these analyses were that stronger presented control at T2 was significantly related to a decrease in distress and an increase in life satisfaction and trust beliefs.

Hypothesis 2a: For the trauma group, I anticipate that individuals whose worst event between T1 and T2 is a non-Criterion A1 will report as much impairment (e.g., similar levels of changes in distress, PTSD, physical symptoms, substance use, life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning from pre-to post-trauma) as those whose worst event is a Criterion A1 event.

Please see the following table for the results.

MANOVA's Comparing Criterion A1 and non-A1 Events at T2 on Changes in Outcomes from T1 to T2 with Neuroticism and Number of Lifetime Traumas as Covariates

	Overall mean(SE) N=142-143	Neuroticism	Number of Traumas at T1	Univariate F	Non-A1 N=121	Criterion A1 N=21-22
1. Multivariate F	(5, 134)	0.30	1.32		1.70	
		Univariate				
Δ PTSD	.03 (.04)	0.01	0.30	1.69	0.15 (.16)	-0.08 (.07)
Δ Distress	.08 (.07)	0.43	1.35	1.34	0.00 (.13)	0.17 (.05)
Δ Life Satisfaction	-.03 (.14)	0.99	0.08	2.56	0.20 (.26)	-0.26 (.11)
Δ SF-12 – MCS	-5.90 (2.57)	0.01	6.20*	0.87	3.47 (4.8)	-8.33 (1.95)
Δ SF-12 – PCS	-1.81 (2.02)	0.05	0.05	3.00	1.73 (3.76)	-5.36 (1.53)
2. Multivariate F	(4,136)	0.43	3.67**		1.18	
		Univariate				
Δ WAQ - Trust	-.01 (.07)	0.99	10.41**	0.63	0.05 (.06)	-0.07 (.14)
Δ WAQ - Safety	-.06 (.07)	0.06	1.09	2.50	0.04 (.05)	-0.17 (.12)
Δ WAQ - CPP	-.01 (.08)	0.11	1.04	0.69	-.07 (.06)	0.06 (.14)

Δ WAQ - Control	-.16 (.07)	0.71	1.33	0.13	-0.19 (.06)	-0.13 (.14)
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In line with my hypotheses, Criterion A1 status was not related to changes in mental and physical health outcomes and world assumptions from T1 to T2.

Hypothesis 2b: For the trauma group, I anticipate that individuals whose worst event between T1 and T2 is a relational event will report as much impairment (e.g., similar levels of changes in distress, PTSD, physical symptoms, substance use, life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning from pre-to post-trauma) as those whose worst event is a non-relational event.

At a conference we attended and at which we presented some pilot data, it was argued that all events could be relational in nature. Upon further reflection, and after much discussion, coding and debate, we decided that this distinction was too unclear to include.

Hypothesis 2c: For the trauma group, I anticipate that worst events that are directly experienced will be associated with greater increases in impairment (e.g., greater increases in distress, PTSD, physical symptoms, substance use, less life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning from pre-to post-trauma) compared to events that are indirectly experienced.

Please see the following table for the results.

MANOVA's Comparing Direct and Indirect Events at T2 on Changes in Outcomes from T1 to T2 with Neuroticism and Number of Lifetime Traumas as Covariates

	Overall mean(SE) N=144	Neuroticism	Number of Traumas at T1	Univariate F	Indirect N=42	Direct N=102
1. Multivariate F	(5, 136)	0.54	1.43		1.91	
		Univariate				
Δ PTSD	-.08 (.07)	0.32	0.18	0.21	-0.11 (.11)	-0.04 (.07)
Δ Distress	.09 (.05)	0.34	1.45	4.81*	-0.03 (.09)	0.21 (.06)
Δ Life Satisfaction	-.17 (.11)	1.53	0.07	0.14	-0.12 (.19)	-0.21 (.12)
Δ SF-12 – MCS	-5.68 (1.93)	0.01	6.57*	7.32**	-0.39 (3.28)	-10.97 (2.09)
Δ SF-12 – PCS	-3.61 (1.55)	0.01	0.13	1.77	-1.52 (2.64)	-5.70 (1.68)
2. Multivariate F	(4,137)	0.43	3.69**		0.81	
		Univariate				
Δ WAQ - Trust	.04 (.06)	0.53	10.37**	0.19	0.07 (.10)	0.02 (.06)
Δ WAQ - Safety	-.02 (.05)	0.01	1.18	2.32	-0.10 (.08)	0.06 (.05)
Δ WAQ - CPP	-.04 (.06)	0.08	0.12	0.01	-0.04 (.10)	-0.04 (.06)

Δ WAQ - Control	-.19 (.06)	1.11	1.26	0.16	-0.21 (.10)	-0.17 (.06)
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Contrary to my hypotheses, whether an event was directly or indirectly experienced was not associated with differential increases in impairment or changes in world assumptions. Number of lifetime events was significantly related to changes in the WAQ subscales overall and for the trust subscale in particular.

Hypothesis 2d: For the trauma group, I anticipate that worst events that are perceived as intentional will be associated with greater increases in impairment (e.g., greater increases in distress, PTSD, physical symptoms, substance use, less life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning from pre-to post-trauma) compared to events that are perceived as unintentional.

Because I used a continuous measure for intentional harm (not at all intentional, a little intentional, mostly intentional, completely intentional, and not applicable – coded as missing), I ran a correlation between intentionality and the outcomes. See below for results.

Correlations between Extent of Intention at T2 and Changes in Outcomes from T1 to T2

Outcome	Extent Intention
Δ PTSD	-.05
Δ Distress	.02
Δ Life Satisfaction	.01
Δ SF-12-MCS	-.04
Δ SF-12- PCS	-.06

Δ WAQ – Trust	.22**
Δ WAQ – Safety	-.14
Δ WAQ – CPP	-.24**
Δ WAQ – Control	-.09

* $p < .05$, ** $p < .01$. N's range from 133-137 because of missing data

Few of the correlations between extent of intention and change in outcomes from T1 to T2 were significant and only one fell in line with my hypotheses in that a higher perception of intention was significantly related to decreases in comprehensibility beliefs. One relationship was in the opposite direction of my hypotheses as increases in trust beliefs were associated the perception of greater intent by the perpetrator.

Multivariate Analysis of Variance (MANOVA) analyses for each independent variables (Criterion A or not, relational or not, direct/indirect, intentional/unintentional) will be used to assess these group differences. Separate MANOVA's will be run because the independent variables are highly correlated (e.g., most of the relational events or non-Criterion A), and this multi-collinearity would prevent me from getting valid results about each individual predictor. Hypothesis 3a: I expect that the trauma group will have significantly greater increases in impairment (e.g., increases in distress, PTSD, physical symptoms, and substance use from pre to post-trauma) and decreases in positive outcomes (life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) compared to the no-trauma group.

Please see Table 5 and related text for these results.

Hypothesis 3b: I anticipate that the trauma group will experience significant decreases in world assumptions from T1 to T2, whereas the no-trauma group will not. I expect that these decreases in world assumptions will be significantly greater than any observed decreases in world assumptions for the no-trauma group.

Please see Table 5 and related text for these results.

Multivariate Analysis of Variance (MANOVA) analyses will be used to assess differences between the trauma and no-trauma groups using their change scores from T1 to T2 on positive (life satisfaction, positive health behaviors, positive world assumptions and positive mental and physical health functioning) and negative outcomes (PTSD symptoms, distress, negative health behaviors). Paired t-tests (separately for the trauma group and the no-trauma group) will be run for each of the WAQ subscales to assess for change in WAQ scores from T1 to T2. A MANOVA will then be run to examine differences in change scores for each of the WAQ subscales between the trauma and no-trauma group.

Hypothesis 4: I anticipate that T2 worst events that are classified as non-relational will be associated with changes in the WAQ subscales. If changes in world assumptions from T1 to T2 are established, I will see if these changes are associated with changes in physical and mental health outcomes.

A Multivariate Analysis of Variance (MANOVA) analysis will be run for the independent variable (relational and non-relational worst events) in the trauma group to assess these group differences in changes in assumptions from T1 to T2. Finally, if

changes are established, bivariate correlations between changes in WAQ scores from T1 to T2 will be run with both positive and negative outcomes at T2.

At a conference we attended and at which we presented some pilot data, it was argued that all events could be relational in nature. Upon further reflection, and after much discussion, coding and debate, we decided that this distinction was too unclear to include.

Hypothesis 5: I expect that whether an event is perceived as intentional or directly experienced at T2 will predict distress and PTSD symptoms beyond the pre-trauma variables (neuroticism, number of lifetime traumas) and post-trauma variables (peri-traumatic emotions and dissociation, perceived present control, social support). However, I anticipate that Criterion A status and whether an event is classified as relational or not will not predict distress and PTSD beyond the measured pre- and post-trauma variables.

Four separate stepwise regression will be used with the pre- and post-trauma variables entered at Step 1, the event dimension (each of which will be examined in separate regression analyses; Criterion A1 status, direct/indirect, intentional/unintentional, relational or not) entered at Step 2, and distress and PTSD serving as the outcome variables in the PTE group.

At a conference we attended and at which we presented some pilot data, it was argued that all events could be relational in nature. Upon further reflection, and after much discussion, coding and debate, I decided that this distinction was too

unclear to include. Thus I did not include relational as a dimension in these analyses.

Regressions in the PTE group for T2 PTSD with Pre- and Post-Trauma Variables

Entered at Step 1 and Event Dimensions Entered at Step 2

Step 1 - Predictors	Step 2 - Criterion A1/Non-A1			Step 2 - Direct vs. Indirect			Step 2 - Intentionality		
	B	SE B	β	B	SE B	β	B	SE B	β
T2 PTSD									
# Lifetime events	.01	.01	.02	.01	.01	.06	.01	.01	.06
Neuroticism	.04	.07	.07	.05	.06	.09	.04	.07	.06
T2 Emotions	.54	.23	.34**	.43	.23	.27*	.60	.23	.36**
T2 Dissociation	.20	.16	.17	.25	.16	.22	.15	.19	.11
T2 Unhelpful Social Support	.31	.12	.29***	.25	.11	.23**	.34	.12	.30***
T2 Positive Social Support	.04	.09	.05	.06	.09	.07	.03	.09	.03
T2 Present Control	-.34	.14	-.26**	-.32	.13	-.24**	-.35	.14	-.27**
Event Dimension	-.13	.19	-.07	.29	.16	.18*	-.06	.07	-.08
R ²			.55			.57			.58
Adjusted R ²			.49			.52			.51

p* <.07, *p* <.05, *** *p* <.01.

Regressions in the PTE group for T2 Distress with Pre- and Post-Trauma Variables

Entered at Step 1 and Event Dimensions Entered at Step 2

Step 1 - Predictors	Step 2 - Criterion A1/Non-A1			Step 2 - Direct vs. Indirect			Step 2 - Intentionality		
	B	SE B	β	B	SE B	β	B	SE B	β
# Lifetime events	.01	.01	.06	.01	.01	.11	.01	.01	.07
Neuroticism	.12	.06	.21*	.13	.06	.23**	.13	.06	.22**
T2 Emotions	.33	.21	.22	.20	.21	.13	.40	.20	.25*
T2 Dissociation	.11	.15	.10	.18	.15	.17	.24	.17	.19
T2 Unhelpful Social Support	.23	.11	.23**	.15	.10	.15	.18	.11	.17
T2 Positive Social Support	-.01	.08	-.01	.02	.08	.02	-.04	.08	-.05
T2 Present Control	-.42	.13	-.35***	-.39	.12	-.33***	-.43	.13	-.35***
Event Dimension	-.12	.18	-.07	.36	.14	.24**	-.01	.07	-.01
R ²			.54			.58			.63
Adjusted R ²			.48			.52			.58

* $p < .07$, ** $p < .05$, *** $p < .01$.

As predicted Criterion A1 status did not predict PTSD and distress at T2 above and beyond the pre and post-trauma predictors. Contrary to my hypotheses, neither did perceived intentionality. In line with my hypotheses, directness of event was marginally significant in predicting PTSD and was significant in predicting distress above and beyond the predictors.