

# Trait Self-Enhancement as a Buffer Against Potentially Traumatic Events: A Prospective Study

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Longitudinal research has associated the disposition toward self-enhancing biases with better adjustment following potentially traumatic events (PTEs). However, self-enhancement was always measured in these studies *after* the PTE, thus confounding it with exposure. This study used a prospective design that tracked PTEs in college students over a 4-year period using an online checklist ( $n = 69$ ). Most participants experienced at least 1 PTE, and the mean number of PTEs was 4.40. Trait self-enhancement, measured at the beginning of the study and prior to the PTEs, was associated with reduced distress in both the first and fourth year of college. Participants with greater exposure to PTEs had greater distress in their fourth year; however, individuals high in self-enhancement were relatively unaffected by PTE exposure. High self-enhancement participants were also rated as better copers in anonymous ratings obtained from participants' close friends. Overall, these results offer the first prospective evidence demonstrating that self-enhancement serves as a buffer against the potentially harmful effects of trauma.

*Keywords:* self-enhancement, trauma, resilience

Almost everyone is exposed to highly aversive life events (i.e., events that involve death, serious injury, or threat to physical integrity) at some point in their lives (Ozer, Best, Lipsey, & Weiss, 2003). Yet, it is well established that whereas some people suffer greatly after such potentially traumatic events (PTEs) and may develop chronic symptoms of psychopathology, most people do not (Bonanno, 2004). Some people endure temporary elevations in symptoms and distress for several months before gradually returning to their baseline levels of functioning, whereas many people exhibit psychological resilience and experience little or no disruption in functioning at any point after such an event (Bonanno, 2004, 2005). At least some of the variance in these outcomes appears to be attributable to individual differences in personality. One personality variable consistently linked to positive adjustment following PTEs is *trait self-enhancement*, a disposition to extremely positive self-evaluations (Paulhus, 1998).

Historically, it was widely assumed that positive self-regard and self-esteem are health promoting but only insofar as they are balanced with realistic awareness of personal limitations and negative characteristics (Allport, 1937; Erikson, 1950; Maslow, 1950; Vaillant, 1977). More recently, however, a considerable body of research has shown that self-enhancing biases are common to everyday human cognition and contribute independently to psychological adjustment and healthy coping (Taylor & Brown, 1988, 1994). For example, research has shown that most people tend to evaluate themselves more favorably than they evaluate others. This

“better than average” effect has been demonstrated in a variety of contexts, including driving ability (Svenson, 1981), health (Larwood, 1978; Weinstein, 1980, 1982), leadership and athletic abilities (College Board, 1976–1977), and teaching ability (Cross, 1977).

Although self-enhancing biases are common, some people tend to use such biases more than others. Such trait self-enhancers, by definition, have a disposition toward extremely positive, and possibly unrealistic, self-illusions. Trait self-enhancement is most commonly measured using self-report questionnaires (Paulhus, 1984, 1991a, 1998) or by comparisons of self- and peer ratings of personal attributes (Lewinsohn, Mischel, Chaplin, & Barton, 1980).

As an individual differences variable, trait self-enhancement has been associated with a number of adaptive benefits. For example, self-enhancers tend to enjoy greater self-esteem and positive affect (Bonanno, Rennie, & Dekel, 2005; Robins & Beer, 2001). However, trait self-enhancement is not free of costs. Although there is some evidence that self-enhancers are viewed favorably by close friends (Taylor, Lerner, Sherman, Sage, & McDowell, 2003b), the disposition toward self-enhancement has been associated with narcissism (John & Robins, 1994) and with social liabilities (Colvin, Block, & Funder, 1995). For example, although self-enhancers may be viewed favorably on initial impressions (Paulhus, 1998), with repeated contact, unfamiliar peers tend to view them more negatively (John & Robins, 1994; Paulhus, 1998).

Despite these mixed findings, there is growing evidence that trait self-enhancers are particularly well suited for coping with adverse events (Bonanno, 2004, 2005). Presumably, this occurs because when people experience a highly aversive or threatening event, the normally positive views they may hold of themselves or the world around them are seriously challenged, often leaving people feeling weak and vulnerable (Janoff-Bulman, 1992). Subsequent efforts to protect or restore a positive sense of self (Taylor,

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1983) may come more easily to self-enhancers, thereby facilitating adaptation to the adverse event.

Similarly, terror management theory also describes how some people may be better positioned to cope with adverse events. According to terror management theory, when confronted with the awareness of mortality and vulnerability, humans protect themselves by clinging to strong cultural worldviews (e.g., Greenberg, Solomon, & Pyszczynski, 1997). Self-esteem is an integral part of such worldviews, and those with higher self-esteem tend to experience less anxiety when faced with reminders of their own mortality (e.g., Harmon-Jones et al., 1997; Solomon, Greenberg, & Pyszczynski, 2002). Thus, it follows that self-enhancers, who tend to have particularly favorable attitudes about the self, may be better able to cope when faced with potentially traumatic events that could serve as reminders of their own mortality and vulnerability.

Empirical evidence for self-enhancers' ability to cope effectively comes from several sources. In a laboratory stress-challenge paradigm, for example, self-enhancers had lower baseline cortisol levels, lower cardiovascular responses to stress, and a more rapid cardiovascular recovery, each suggestive of a healthy coping response (Taylor, Lerner, Sherman, Sage, & McDowell, 2003a). There is also a growing body of evidence demonstrating that self-enhancers cope effectively with actual real-world PTEs. Trait self-enhancement has been associated with better adjustment in samples of both Bosnian civilians exposed to urban combat during wartime and bereaved people who lost their spouses to violent deaths (Bonanno, Field, Kovacevic, & Kaltman, 2002). More recently, self-enhancement was found to predict resilience among high-exposure survivors of the September 11th terrorist attacks in New York City (Bonanno et al., 2005). Moreover, in each of these studies, the association between self-enhancement and positive adjustment was observed using relatively objective indices, such as ratings from mental health professionals or anonymous ratings obtained from close friends and relatives.

Although previous studies suggest that self-enhancement is related to better adjustment after adverse events, the evidence is far from definitive. A serious limitation of such studies is that both self-enhancement and adjustment were always measured *after* the target event had already occurred. This design is not uncommon in trauma studies for the simple reason that PTEs are typically unexpected, which makes it extremely difficult to obtain preevent data. Nonetheless, this limitation casts serious ambiguities on the association of self-enhancement and adjustment. Because self-enhancement is conceptualized as a trait variable and presumed to be stable prior to the PTE, it is easy to assume that self-enhancement must have also played a causal role in the positive outcome. However, the 5-week test-retest reliability of questionnaire measures of self-enhancement indicates only a relatively modest level of stability (e.g., .69; Paulhus, 1991b). It is plausible that the casual relationship between self-enhancement and adjustment might be bidirectional; that is, either the experience of a PTE or a person's reaction to it might cause people to become more or less self-enhancing. People often report experiencing personal changes after a traumatic event, including posttraumatic growth (Linley & Joseph, 2004). It is possible then that experiencing a traumatic event might lead some people to become more self-enhancing.

The current investigation addressed this limitation by using a prospective longitudinal design to examine the relationship between trait self-enhancement and adjustment after PTEs; to the best of our knowledge, our study is the first to do so. Specifically, we obtained measures of trait self-enhancement and distress in a sample of undergraduates within months after their arrival at college, and then repeated the distress measure in students' fourth year of college. In addition, we obtained ratings of participants' functioning in the fourth year using anonymous reports provided by participants' close friends. To maximize our ability to capture PTEs that might occur after the initial assessment but before the final assessment, we asked participants to record life events weekly throughout each academic year using a secure Internet checklist.

The use of a repeated Web-based measure of life events offered an especially reliable means of assessing exposure to PTEs. Empirical studies have suggested that the majority of undergraduate students are exposed to at least one PTE in their lifetime (Bernat, Ronfeldt, Calhoun, & Arias, 1998; Lauterbach & Vrana, 2001; Vrana & Lauterbach, 1994). One study indicated that more than one third of students experienced four or more lifetime PTEs (Vrana & Lauterbach, 1994). The most common PTEs experienced include accidents, natural disasters, life-threatening situations, and witnessing serious injury or death (Bernat et al., 1998; Vrana & Lauterbach, 1994). Compared with undergraduates who had not experienced PTEs, undergraduates who had experienced PTEs reported significantly more depressive symptoms, higher levels of anxiety, and increased posttraumatic stress disorder (PTSD) symptoms (Vrana & Lauterbach, 1994). None of the above studies, however, assessed PTE prevalence during college, but rather examined lifetime prevalence of PTEs through retrospective reports.

Based on this literature, we hypothesized that (a) self-enhancers would have less distress at both the first and fourth years of college; (b) experiencing greater exposure to PTEs during the period of this study would predict greater distress in the fourth year of college, over and above initial levels of distress; and (c) self-enhancement would moderate the impact of PTEs on fourth-year distress, such that PTEs would predict greater distress for participants low in trait self-enhancement. We expected that for participants high in trait self-enhancement, PTEs would have relatively less impact on distress levels. In other words, we anticipated that trait self-enhancement would buffer the negative effects of PTEs on distress.

In addition, we explored the possible role that threat appraisal of PTEs may play in self-enhancers' reduced levels of overall, long-term, psychological distress. Trauma theorists have speculated that healthy adjustment following exposure to PTEs may be due in part to the reduced appraisal of distress related to the PTE, which minimizes the initial impact of the event (Shalev, 2002). Two meta-analyses of predictors of PTSD after trauma suggested that psychological factors at play during the trauma, including the in-the-moment appraisal of distress (Ozer et al., 2003), may be as predictive of psychopathological distress as other, more stable, pretrauma variables (Brewin, Andrews, & Valentine, 2000). Trait self-enhancement has been associated with both reframing of threatening events (i.e., threat reappraisal) and other more distal coping mechanisms that may occur well after the onset of the stressor event (e.g., downward social comparison; Taylor & Armor, 1996). To examine whether self-enhancers' ability to endure PTEs involved

threat reappraisal, we investigated adjustment following those PTEs appraised as highly threatening.

Furthermore, we included measures of other personality variables that have been shown to be correlated with positive adjustment following PTEs, specifically optimism (e.g., Ai, Evans-Campbell, Santangelo, & Cascio, 2006; Riolli, Savicki, & Cepani, 2002) and neuroticism (Casella & Motta, 1990; Lauterbach & Vrana, 2001), measured during the students' third and fourth years. Also, because our primary outcome measure, distress, was based on participants' self-reports, we included a measure of social desirability to control for possible self-presentation effects. Finally, we relied on the friend ratings of participant adjustment, measured in the fourth year, to provide a further index of adjustment beyond self-report. We hypothesized that friend ratings of participants' mental health and coping ability would be positively correlated with high self-enhancement. Also, because self-enhancers tend to suffer social liabilities (Colvin et al., 1995; Paulhus, 1998), we hypothesized that the friend ratings of participants' social adjustment would be inversely correlated with self-enhancement.

## Method

### Participants and Procedure

Letters describing the nature of the study were mailed to all first-year undergraduates. As a result, 101 undergraduates were initially recruited to participate in an intensive 4-year longitudinal study. Seventy-three participants (25 men, 48 women) remained in the study for the duration and regularly completed life event logs. There were no meaningful demographic differences between the participants included in this study and the original 101 recruited to participate. Participants were paid in intervals throughout the 4 years. The mean age at the beginning of the study was 18.08 years ( $SD = 0.55$ ). Among the participants, 50.00% identified themselves as Caucasian, 26.39% as Asian or Asian American, 6.94% as African American, 4.17% as Hispanic or Hispanic American, 1.39% as Native American, and 11.11% identified themselves as another racial/ethnic background.

The participants completed several self-report measures in the first and fourth years of this study, including measures of distress, self-enhancement, and social desirability. The measures were administered in group testing sessions in large classrooms. The group testing took place as close as possible to the beginning of the fall term and the end of the spring term. Between each group testing session, participants were sent weekly e-mail notices reminding them to complete the online life events measure. They logged onto a secure Web site to report whether or not they had experienced a given set of potentially traumatic events and to report their threat appraisal at the time of those events. This type of diary method allowed for an ongoing and relatively immediate monitoring of PTEs in a more robust manner than one-time reports (Almeida, 2005). At the start of each new academic year, participants also completed retrospective recalls of PTEs experienced during the summer. In addition, during their fourth year, participants were asked to recall all PTEs experienced while in college. Finally, participants' friends completed a self-report measure rating participants on five dimensions.

### Self-Report Measures

**Distress.** Self-reported distress from psychological symptoms was measured using a combination of 29 items from the Depression, Anxiety, and Hostility scales of the Symptom Checklist-90-R (Derogatis, 1983). The items from these scales were summed and averaged to form a Global Severity Index (GSI). Items are rated on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The GSI has shown adequate internal consistency (.77 to .86) and good 1-week test-retest reliability (.78 to .90; Derogatis, 1983; Derogatis & Melisaratos, 1983). In the current study, the coefficient alpha for this measure was .93.

**Self-enhancement.** Self-enhancement was measured using the Self-Deceptive Enhancement scale (SDE; see the Appendix), which measures unrealistic or overly positive self-descriptions and is a subscale of the Balanced Inventory for Desirable Responding (Paulhus, 1984, 1991a, 1998). The scale consists of 20 self-descriptive statements (e.g., "I am very confident of my judgments," "I never regret my decisions") endorsed on a scale of 1 (*not true*) to 7 (*very true*). As per the original design of the scale, only extreme responses (e.g., 6s or 7s) were scored as self-enhancing. Specifically, responses were dichotomously coded such that responses below 6 were recoded as 0 and responses of 6s and 7s were recoded as 1. The SDE scale is comparable with other measures of self-enhancement (Bonanno et al., 2002; Paulhus, 1998; Taylor et al., 2003b). Factor analyses have established the independence of the SDE from the general tendency to deliberately present the self in a favorable or socially desirable light (i.e., impression management; Paulhus & Reid, 1991). The test-retest reliability of the SDE scale across a 5-week span was .69, and its coefficient alpha has ranged from .68 to .80 (Paulhus, 1991b). In the current study, the coefficient alpha for this measure was .70.

**Social desirability.** Social desirability was measured using the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), which is a widely used 33-item, true-false scale of social desirability unrelated to pathology. It has been shown to have good reliability, with an internal consistency coefficient of .88 and a test-retest correlation (1-month interval) of .89 (Crowne & Marlowe, 1960). In the current study, the coefficient alpha for this measure was .72.

**Optimism.** Dispositional optimism was measured using the Revised Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994). The LOT-R contains six items (as well as four filler items) rated on a 5-point Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). The LOT-R is a brief, modified version of the original LOT (Scheier & Carver, 1985). Both measures are highly correlated ( $r = .95$ ) and produce an overall score representing positive expectancies. The internal consistency of the LOT-R is adequate ( $\alpha = .78$ ), and there is acceptable test-retest reliability across 4, 12, 24, and 28 months ( $r$ s ranging between .56 and .79; Scheier et al., 1994). In the current study, the coefficient alpha for this measure was .81.

**Neuroticism.** Neuroticism was measured using a subscale of the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992), which is a shortened version of the revised NEO Personality Inventory (NEO PI-R). The Neuroticism subscale comprises 11 items rated on a 5-point Likert scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*). Internal consistency reliability for the Neuroticism subscale of the NEO-FFI is .86 and the test-retest

reliability is .89 (Costa & McCrae, 1992). In this study, the coefficient alpha for this measure was .85.

### Web-Based Measures

PTEs were assessed using a secure Internet questionnaire. The questionnaire was based on and adapted from the Social Readjustment Scale, which measures the occurrence and magnitude of stressful life events (Holmes & Rahe, 1967). Items were removed or amended to make the inventory more appropriate for a university-age sample. For example, events concerning children or career were not included. The nine events retained could be considered traumatic according to *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; American Psychiatric Association, 2000) criteria for PTSD in that they included experiencing or witnessing an event that involved death, serious injury, or threat to physical integrity, or having a close relationship with someone who experienced such an event. One exception was parental divorce, which we included because our sample comprised college students. In addition, although the Holmes and Rahe (1967) inventory was designed to capture events that happened within the past year, the inventory in this study was administered on a weekly basis.

During the academic school year, participants were sent weekly e-mail notices reminding them to log onto a Web site via an anonymous ID and password and report each PTE experienced. In addition, we measured threat appraisal by asking them to report how distressing each event was on a scale of 0 to 4. Participants were asked to indicate, by marking "yes," which events they had experienced during the past week; the default setting for each event was "no." The PTEs were composed of nine items, including the death of someone close to you or important in your life, parents' divorce, serious physical injury or illness, serious physical injury or illness of someone close to you or important in your life, personal hospitalization, hospitalization of someone close to you or important in your life, suicide attempt or serious suicide contemplation, suicide or attempted suicide of someone close to you or important in your life, and being robbed or mugged. In addition, at the beginning of a new academic year, participants were asked to consider PTEs since the last time they completed the questionnaire. Participants who completed at least 10 weekly Web tasks per year were included in this study ( $M = 22.30$  entries per year,  $SD = 2.84$ ).

### Anonymous Friend Ratings of Participant Adjustment

Participants' friends completed a questionnaire during the fourth year in which they rated their friends on five dimensions (Bonanno et al., 2005). The participants were provided with consent forms and a questionnaire to be given to three friends who they felt knew them well and with whom they had relatively consistent contact. To ensure confidentiality, the friends returned materials in self-addressed, stamped envelopes sent directly to the researchers. The questionnaire comprised five items rated on a 7-point Likert scale. The friends rated participants on their mental health, physical health, social adjustment, achievement, and coping ability. At least two friends returned ratings for 54 participants and their ratings were averaged. In this study, the coefficient alpha for averaged friend ratings was .85.

## Results

Most undergraduates in this sample experienced at least one PTE (89.04%), and the mean number of PTEs experienced over the length of the study was 4.40 ( $SD = 3.84$ ). The most commonly reported events were a personal illness or injury, hospitalization of someone close to you or important in your life, and illness or injury to someone close to you or important in your life. The mean distress score was 0.54 ( $SD = 0.53$ ) for first-year students and 0.73 ( $SD = 0.55$ ) for fourth-year students. The mean self-enhancement score was 4.37 ( $SD = 1.04$ ). Frequency of PTEs over the 4 years of the study was not meaningfully correlated with first-year distress, social desirability, or self-enhancement, suggesting that reporting of PTEs was relatively objective and free of self-presentation concerns. However, as expected, frequency of PTEs and mean PTE threat appraisal ( $M = 1.14$ ,  $SD = 0.95$ ) were significantly correlated with elevated distress in the fourth year ( $r = .30$ ,  $p < .05$ ).

Consistent with the generally positive adjustment reported by self-enhancers, trait self-enhancement was significantly inversely correlated with distress in both the first-year ( $r = -.37$ ,  $p < .01$ ) and fourth-year ( $r = -.27$ ,  $p < .05$ ). However, self-enhancement was also inversely correlated with PTE threat appraisal ( $r = -.25$ ,  $p < .05$ ), indicating that self-enhancers experienced PTEs as less threatening than other participants. In addition, gender, but not age or race, was meaningfully correlated with self-enhancement such that men tended to be self-enhancers ( $r = -.29$ ,  $p < .05$ ). There were no other meaningful correlations between demographic variables and key study variables. In addition, social desirability and average PTE Web entries per year were not meaningfully correlated with any key study variables.

We also explored whether the timing of PTEs was related to any key study variables. We created variables to identify the proportion of PTEs occurring in each year. Participants experienced the greatest proportion of PTEs in their first year ( $M = 0.44$ ,  $SD = 0.35$ ) and the lowest proportion in their third year ( $M = 0.25$ ,  $SD = 0.26$ ). Next, we correlated our PTE proportion variables with the other key variables in the study. The proportion of PTEs occurring in the second year was significantly inversely correlated with self-enhancement ( $r = -.26$ ). There were no other meaningful correlations with the PTE proportion variables and other study variables. The lack of a meaningful relationship between distress in the fourth year and proportion of PTEs in the year prior (or any other year) suggests that the timing of PTEs did not affect long-term distress.

Finally, we explored whether PTE event type was related to any other key study variables. We created nine variables to identify the total number of each of the PTEs over the course of the study. Fourth-year distress was meaningfully correlated with suicide ( $r = .28$ ) and with illness or injury ( $r = .25$ ). There were no other meaningful correlations between PTE event type and any other key study variables, including self-enhancement. We conducted paired  $t$  tests comparing high and low self-enhancers (based on a mean split) for the frequency of each PTE. None of the comparisons approached significance ( $p > .15$  for all tests; see Table 1).

### Predicting Fourth-Year Distress

To more precisely examine the predicted buffering effect of self-enhancement on long-term adjustment, we conducted a hier-

archical linear regression (summarized in Table 2). The dependent measure in this analysis was fourth-year distress. After determining that the PTE variable violated assumptions of normality, we normalized the variable using a log transformation. Then, we standardized all control variables by subtracting the mean and then dividing by the standard deviation (Aiken & West, 1991). On the first step of the regression analysis, we entered gender as a covariate. This step was not significant,  $F(1, 68) = .33, p > .05$ . On the second step, we entered first-year distress. This step was not significant,  $F(2, 68) = 2.80, p > .05$ . On the third step, we entered the main effects of PTEs and self-enhancement. This step was significant,  $F(4, 68) = 3.48, p = .01$ , and accounted for 18% of the variance in fourth-year distress. Finally, on the fourth step, we forced in the interaction of self-enhancement with PTE, which was computed from the standardized variables. This step was also significant,  $F(5, 68) = 4.38, p < .01$ . With all control variables in the model, the interaction of self-enhancement with PTE accounted for an additional 8% of the variance in fourth-year distress. The interaction entered significantly into the model as a predictor of fourth-year distress.

To further examine the interaction of self-enhancement and PTEs, following Aiken and West (1991), we graphed fourth-year distress scores for participants either low or high in PTEs and either 1 standard deviation above or 1 standard deviation below the mean on self-enhancement (see Figure 1). As predicted, for participants low in self-enhancement, high trauma exposure was associated with considerably greater fourth-year distress. By contrast, for participants with high self-enhancement, distress levels at the fourth-year assessments were essentially unrelated to trauma exposure. Calculation of simple slopes (Aiken & West, 1991) confirmed this impression. For participants 1 standard deviation below the mean on self-enhancement, the slope from low to high PTEs was associated with a significant positive increase in fourth-year distress. By contrast, for participants 1 standard deviation above the mean on self-enhancement, the slope of low to high PTEs against fourth-year distress was flat and nonsignificant. In other words, self-enhancement appeared to buffer the effects of high trauma exposure.

To explore the role of PTE threat appraisal in predicting adjustment, we repeated the original regression using only high-distress PTEs (PTEs with distress ratings of 3 or higher at the time they

Table 2  
Summary of Hierarchical Regression Analysis for Standardized Variables Predicting Fourth-Year Distress ( $N = 69$ )

Variable	<i>B</i>	<i>SE B</i>	$\beta$
Step 1			
Gender	-.07	.13	-.07
Step 2			
First-year distress	.13	.06	.28
Step 3			
Potentially traumatic event (PTE)	.12	.06	.04*
Self-enhancement	-.09	.06	-.15
Step 4			
PTE $\times$ Self-Enhancement	-.13	.05	-.29*

Note.  $R^2 = .01$  for Step 1;  $R^2 = .08$  for Step 2;  $R^2 = .18$  for Step 3;  $R^2 = .26$  for Step 4.  $\Delta R^2 = .07$  for Step 2;  $\Delta R^2 = .10$  for Step 3;  $\Delta R^2 = .08$  for Step 4.

\*  $p < .05$ .

were reported). This analysis (see Table 3) produced essentially the same result as the previous regression. The interaction of self-enhancement with high-distress PTEs significantly predicted reduced fourth-year distress. In other words, although self-enhancers on average appraised PTEs as less distressing, self-enhancement still buffered the long-term impact of the PTEs that they did find distressing.<sup>1</sup>

### Other Personality Variables

To explore the extent that other personality variables may have also informed participants' long-term adjustment and possibly overlapped with self-enhancement, we conducted additional analyses with measures of optimism and neuroticism. Neuroticism was meaningfully correlated with first- and fourth-year distress ( $r = .37, r = .61$ , respectively,  $p < .01$ ), and optimism was meaningfully, inversely correlated with fourth-year distress ( $r = -.37, p < .01$ ). Optimism and neuroticism were also meaningfully correlated with each other ( $r = -.43, p < .01$ ). However, neither personality variable correlated with self-enhancement, supporting the assumption

<sup>1</sup> To further examine the role of PTE threat appraisal in predicting self-enhancers' favorable adjustment, we tested whether threat appraisal at the time of PTEs mediated self-enhancers' long-term distress levels. Using the four steps outlined by Baron and Kenny (1986), we conducted four separate regression analyses to test for mediation. For the final test, we used a bootstrapping approach (Preacher & Hayes, 2004). The conditions for mediation were not met as the final test, which used 5,000 samples, indicated that the total indirect effect of self-enhancement on fourth-year distress through mean PTE threat appraisal was not significant (point estimate =  $-.01$ , 95% CI [ $-.0303, .0004$ ]). Thus, PTE threat appraisal did not mediate the relationship between self-enhancement and later distress.

Next, we tested for mediated moderation. Specifically, we tested whether reduced PTE threat appraisal mediated the relationship between fourth-year distress and the interaction of self-enhancement and PTEs. Based on Baron and Kenny's (1986) mediated moderation test, the first condition was not met as the interaction of self-enhancement and PTEs did not enter significantly in the first equation ( $p > .05$ ). Thus, although PTE threat appraisal was significantly correlated with self-enhancement and fourth-year distress, it did not mediate the interaction of self-enhancement and PTEs in predicting fourth-year distress.

Table 1  
Mean Frequency of Potentially Traumatic Events (PTEs) by Type for High and Low Self-Enhancers

PTE	High self-enhancers ( $n = 34$ )	Low self-enhancers ( $n = 31$ )
Death	0.64	0.45
Parent divorce	0.12	0.06
Illness or injury	1.18	1.48
Illness/injury of close other	0.62	1.00
Hospitalization	0.06	0.23
Hospitalization of close other	1.03	1.23
Suicide attempt	0.21	0.52
Suicide of close other	0.09	0.26
Robbed or mugged	0.15	0.25

Note. High and low self-enhancers were determined based on a mean split. Paired  $t$  tests comparing high and low self-enhancers did not approach significance ( $p > .15$ ).

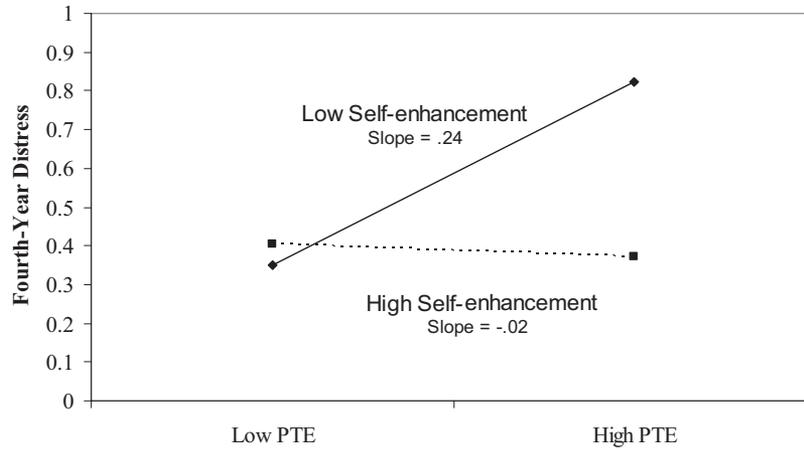


Figure 1. Interaction of potentially traumatic event (PTE) frequency and self-enhancement (Self-Deceptive Enhancement scale).

tion that trait self-enhancement captures a unique dimension of personality.

To further explore this issue, we repeated our original regression but included neuroticism and optimism on the second step (summarized in Table 4). We considered this to be an exploratory analysis, as inclusion of these two additional personality variables complicated the model by soaking variance and reducing power. Nevertheless, even with the additional personality factors in the equation, entering the interaction of self-enhancement and PTEs on the final step again proved significant,  $F(7, 49) = 8.48, p < .01$ , and accounted for 59% of the variance in fourth-year distress. In addition, we also conducted a similar analysis but included the interactions of PTEs with both optimism and neuroticism. However, these two interactions did not enter significantly into the model ( $p > .05$ ).

**Modified List of PTEs**

In a final set of analyses, we explored whether the types of events included in our list of PTEs may have influenced outcome.

Table 3  
Summary of Hierarchical Regression Analysis for High-Distress Potentially Traumatic Events (PTEs) and Other Variables Predicting Fourth-Year Distress (N = 69)

Variable	B	SE B	β
Step 1			
Gender	-.07	.13	-.07
Step 2			
First year-distress	.13	.06	.28
Step 3			
High-distress PTEs	.16	.06	.32**
Self-enhancement	-.08	.06	-.17
Step 4			
High-Distress PTE × Self-Enhancement	-.14	.05	-.30**

Note.  $R^2 = .01$  for Step 1;  $R^2 = .08$  for Step 2;  $R^2 = .22$  for Step 3;  $R^2 = .30$  for Step 4.  $\Delta R^2 = .07$  for Step 2;  $\Delta R^2 = .14$  for Step 3;  $\Delta R^2 = .08$  for Step 4. PTE = Potentially traumatic events.  
\*  $p < .05$ . \*\*  $p < .01$ .

First, we explored the possibility that some of the items we included as PTEs may have been confounded with our primary distress outcome measure. This concern was prominent for two items: personal hospitalization and suicide attempt or serious suicide contemplation. Eleven participants in the study endorsed these events. Accordingly, we created a revised PTE total variable in which hospitalization and suicide attempt or serious suicide contemplation were removed. Then, we repeated our original regression using the revised PTE variable. The resulting regression yielded similar results as in the previous model. Second, we explored the possibility that students may have occasionally endorsed the same event for two or more concurrent weeks. Inspection of the data indicated that this occurred for less than 2% of the responses. Nevertheless, we created an additional, revised PTE total score in which repeated events were removed, and then we repeated our original regression with this variable. Again, the resulting regression yielded similar results to the previous analyses.

Table 4  
Summary of Hierarchical Regression Analysis for Optimism, Neuroticism, and Other Variables Predicting Fourth-Year Distress (n = 50)

Variable	B	SE B	β
Step 1			
Gender	-.07	.14	-.07
Step 2			
First-year distress	-.00	.06	-.01
Neuroticism	.29	.07	.58**
Optimism	-.05	.07	-.11
Step 3			
Potentially traumatic event (PTE)	.15	.05	.30**
Self-enhancement	-.09	.05	-.20
Step 4			
PTE × Self-Enhancement	-.11	.04	-.27*

Note.  $R^2 = .01$  for Step 1;  $R^2 = .40$  for Step 2;  $R^2 = .52$  for Step 3;  $R^2 = .59$  for Step 4.  $\Delta R^2 = .39$  for Step 2;  $\Delta R^2 = .12$  for Step 3;  $\Delta R^2 = .07$  for Step 4. PTE = Potentially traumatic events.  
\*  $p < .05$ . \*\*  $p < .01$ .

### Retrospective PTEs

The use of online event capture represents a methodological advance over previous attempts to capture potentially traumatic life events. However, we were able to use the online weekly PTEs measure only during the academic year. PTEs occurring over the summer months were recorded retrospectively. The mix of online and retrospective recall may have been confusing or may have missed some life events, thus suggesting more precise event capture than was actually obtained. For this reason, we explored whether our results would replicate using only retrospective recall. Accordingly, we repeated our original regression using the fourth-year retrospective recall of all PTEs, which retrospectively assessed events experienced throughout college. An important finding was that this analysis yielded similar results to the original model.

### Friend Ratings of Participant Adjustment in Their Fourth Year

To further explore the association between self-enhancement and fourth-year adjustment, we examined correlations with anonymous ratings of participants' adjustment obtained from friends during the fourth year (summarized in Table 5). We examined averaged friend ratings of participants' mental health, physical health, social adjustment, coping ability, and achievement. Self-enhancement was significantly correlated with only one variable, coping ability ( $r = .35, p < .05$ ). This finding is consistent with the observed buffering effect, suggesting that trait self-enhancers cope well with stressful life events. In contrast to our hypotheses, self-enhancement was not significantly correlated with mental health ( $r = -.01, p > .05$ ) and social adjustment ( $r = -.09, p > .05$ ).

### Discussion

To the best of our knowledge, our study is the first to demonstrate self-enhancement as a buffer against distress following exposure to real-world PTEs using a prospective research design. By testing our hypotheses using three different types of measures (self-report questionnaires, weekly online logs, and friends' ratings) and collecting data over a 4-year period, we found that self-enhancement predicts fourth-year distress over and above initial distress and number of PTEs. This finding follows previous longitudinal research correlating self-enhancement with better adjustment after adverse events (Bonanno et al., 2002, 2005).

Our results also suggest that self-enhancement buffers against the potentially destabilizing impact of trauma (Bonanno, 2005). These results are especially compelling given that we had measured PTEs using a proximal Web-based measure that assessed life events over the 4-year period of the study. For the sample on the whole, greater exposure to PTEs over the course of the study predicted increased distress by the fourth year of college. However, trait self-enhancers did not show this effect. Among trait self-enhancers, fourth-year distress was essentially the same regardless of their levels of PTE exposure. As such, our results provide compelling evidence for a directional relationship between self-enhancement and positive adjustment. Previous research could not rule out the possibility that positively adjusted people may have developed self-enhancing tendencies *after* the experience of a PTE (e.g., Bonanno et al., 2005). In contrast our study measured self-enhancement *prior* to the experience of a PTE, clearly demonstrating a link between self-enhancing tendencies and long-term adjustment.

These results are consistent with theoretical accounts of self-enhancement and adverse events. When people experience highly aversive or threatening events, they are potentially faced with competing views of the self as weak and ineffective (Janoff-Bulman, 1992) and may need to expend considerable efforts to protect or restore a positive sense of self (Taylor, 1983). Trait self-enhancers seem to be especially facile at using psychological mechanisms that could aid or even obviate this process, such as downward social comparisons to even less fortunate others (Helgeson & Taylor, 1993; Taylor, Kemeny, Reed, & Aspinwall, 1991; Taylor, Wood, & Lichtman, 1983) or reframing the aversive event as providing unexpected benefits (Petrie, Buick, Weinman, & Booth, 1999; Taylor, Lichtman, & Wood, 1984).

The anonymous ratings of participants' adjustment that we obtained from their close friends offered additional, albeit modest, support for the coping abilities of self-enhancers. The ratings were based on single items in a questionnaire completed by a subset of the sample. Based on previous findings, we expected that self-enhancers would be rated by their friends as having better mental health and better coping ability but also poorer social adjustment relative to other participants. Consistent with the finding that self-enhancers report low distress regardless of exposure to PTEs, self-enhancement was positively correlated with friends' ratings of coping ability. There was no meaningful association between self-enhancement and friend ratings of mental health, but we also failed to find an association between self-enhancement and poor social adjustment. The lack of association with mental health

Table 5  
Correlations Between Self-Enhancement and Fourth-Year Friends' Ratings ( $n = 32$ )

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Self-enhancement	5.66	2.92	—					
2. Mental health	4.99	1.01	-.01	—				
3. Physical health	4.97	0.90	-.01	.49**	—			
4. Social adjustment	5.83	6.61	-.09	.57**	.46**	—		
5. Achievement	5.63	1.12	.09	.61**	.38**	.48**	—	
6. Coping ability	5.03	0.98	.35*	.67**	.37**	.62**	.63**	—

\*  $p < .05$ . \*\*  $p < .01$ .

ratings may be due to the general tendency of people to interpret mental health as a broad construct composed of various factors such as maintaining realistic perceptions of the self (Taylor & Brown, 1988), a quality that tends to be uncharacteristic of self-enhancers. The absence of negative ratings on social adjustment may have been due, in part, to the close relationship between self-enhancers and their selected friends. Unlike other studies that employed ratings by unfamiliar peers in a laboratory setting (John & Robins, 1994; Paulhus, 1998), self-enhancers in this study selected close friends to complete ratings of adjustment. The overall friend ratings also may have been influenced by the types of people self-enhancers chose to befriend. Specifically, they may have tended to befriend individuals who would verify their own self-enhancing dispositions (Swann & Read, 1981).

Another methodological advantage to our study was that we assessed trauma exposure during college. Most previous studies of college students assessed lifetime trauma prevalence retrospectively. An independent analysis using data from our sample found that college students tend to recall fewer PTEs than they actually experienced (Lalande & Bonanno, 2009). In fact, the average number of PTEs reported weekly over the length of this study was 4.4, which is greater than the average number of *lifetime* PTEs retrospectively reported by college students in other studies (Bernat et al., 1998; Lauterbach & Vrana, 2001; Vrana & Lauterbach, 1994).

Although the current study advances previous research on self-enhancement and adjustment in several key ways, specifically the use of a prospective design and online, repeated assessments of life events over time, there were also limiting factors that warrant discussion. First, our primary outcome variable was a self-report measure, with the obvious limitation being that self-enhancers may have simply *reported* less distress (Colvin & Block, 1994) rather than experienced less distress. We attempted to minimize this problem in several ways. First, we found no meaningful correlation between self-enhancement and social desirability. In addition, self-enhancement was not meaningfully correlated with self-reported frequency of PTEs, which is consistent with the idea that PTE responses did not differ on the basis of self-enhancement level. Finally, we found modest support for self-enhancers' coping abilities from anonymous friend ratings. Nonetheless, the best way to rule out the response bias issue will be to replicate the same prospective design using more varied measures of long-term outcome.

A related limitation is that the outcome measure was limited to distress and general aspects of adjustment. Although we measured PTEs, these measures say little about possible traumatic stress participants may have experienced. In the same vein, although the use of undergraduates made it relatively easy to track participants' experiences over a 4-year period, this convenience also limits the generalizability of the findings. In addition, although we collected PTE data as close to real time as possible, we did so during the academic school year, leaving a gap over the summer break. Thus, we relied on a retrospective recall of PTE immediately following the summer break. Although we were able to capture events as they occurred for the majority of the time period studied, representing a significant move forward in the PTE literature, future studies should make an effort to track PTEs even more comprehensively.

Within the context of these limitations, our findings suggest that trait self-enhancement is especially beneficial in coping with a variety of potentially traumatic events. In fact, our results offer preliminary evidence to support high self-enhancement as protect-

ing some people from experiencing severe distress after adverse events. Although self-enhancement comes with its social costs in everyday life, it carries real advantages in helping people cope with extreme life events.

## References

- Ai, A., Evans-Cambell, T., Santangelo, L. K., & Cascio, T. (2006). The traumatic impact of the September 11th, 2001, terrorist attacks and the potential protection of optimism. *Journal of Interpersonal Violence, 21*, 689–700.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Allport, G. W. (1937). *Personality: A psychological interpretation*. New York: Holt, Rinehart & Winston.
- Almeida, D. M. (2005). Resilience and vulnerability to daily stressors assessed via diary methods. *Current Directions in Psychological Science, 14*, 64–68.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.
- Bernat, J. A., Ronfeldt, H. M., Calhoun, K. S., & Arias, I. (1998). Prevalence of traumatic events and peritraumatic predictors of posttraumatic stress symptoms in a nonclinical sample of college students. *Journal of Traumatic Stress, 11*, 645–664.
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*, 20–28.
- Bonanno, G. A. (2005). Resilience in the face of potential trauma. *Current Directions in Psychological Science, 14*, 135–138.
- Bonanno, G. A., Field, N. P., Kovacevic, A., & Kaltman, S. (2002). Self-enhancement as a buffer against extreme adversity: Civil War in Bosnia and traumatic loss in the United States. *Personality and Social Psychology Bulletin, 28*, 184–196.
- Bonanno, G. A., Rennike, C., & Dekel, S. (2005). Self-enhancement among high exposure survivors of the September 11th terrorist attack: Resilience or social maladjustment. *Journal of Personality and Social Psychology, 88*, 984–998.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68*(5), 748–766.
- Casella, L., & Mona, R. W. (1990). Comparison of characteristics of Vietnam veterans with and without posttraumatic stress disorder. *Psychological Reports, 67*, 595–605.
- College Board. (1976–1977). *Student descriptive questionnaire*. Princeton, NJ: Educational Testing Service.
- Colvin, C. R., & Block, J. (1994). Do positive illusions foster mental health? An examination of the Taylor & Brown formulation. *Psychological Bulletin, 116*, 3–20.
- Colvin, C. R., Block, J., & Funder, D. C. (1995). Overly positive self-evaluations and personality: Negative implications for mental health. *Journal of Personality and Social Psychology, 68*(6), 1152–1162.
- Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and the NEO Five-Factor Inventory (NEO-FFI): Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Cross, P. (1977). Not *can* but *will* college teachers be improved? *New Directions for Higher Education, 17*, 1–15.
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of pathology. *Journal of Consulting Psychology, 24*, 349–354.
- Derogatis, L. R. (1983). *Manual-II: Administration, scoring and procedure for the SCL-90-R*. Towson, MD: Clinical Psychometric Research.

- Derogatis, L. R., & Melisaratos, N. (1983). The Brief Symptom Inventory: An introductory report. *Psychological Medicine*, *13*, 595–605.
- Erikson, E. H. (1950). *Childhood and society* (2nd ed.). New York: Norton.
- Greenberg, J., Solomon, S., & Pyszczynski, T. (1997). Terror management theory of self-esteem and cultural worldviews: Empirical assessments and conceptual refinements. *Advances in Experimental Social Psychology*, *29*, 61–139.
- Harmon-Jones, E., Simon, L., Greenberg, J., Pyszczynski, T., Solomon, S., & McGregor, H. (1997). Terror management theory and self-esteem: Evidence that increased self-esteem reduces mortality salience effects. *Journal of Personality and Social Psychology*, *72*, 24–36.
- Helgeson, V. S., & Taylor, S. E. (1993). Social comparisons and adjustment among cardiac patients. *Journal of Applied Social Psychology*, *23*, 1171–1195.
- Holmes, T., & Rahe, R. (1967). The Social Readjustment Scale. *Journal of Psychosomatic Research*, *11*, 213–218.
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: Free Press.
- John, O. P., & Robins, R. W. (1994). Accuracy and bias in self-perception: Individual differences in self-enhancement and role of narcissism. *Journal of Personality and Social Psychology*, *66*, 206–219.
- Lalande, K., & Bonanno, G. A. (2009). *Lightening the memory load: Retrospective memory bias for potentially traumatic events*. Manuscript submitted for publication.
- Larwood, L. (1978). Swine flu: A field study of self-serving biases. *Journal of Applied Social Psychology*, *18*, 283–289.
- Lauterbach, D., & Vrana, S. (2001). The relationship among personality variables, exposure to traumatic events, and severity of posttraumatic stress symptoms. *Journal of Traumatic Stress*, *14*, 29–45.
- Lewinsohn, P. M., Mischel, W., Chaplin, W., & Barton, R. (1980). Social competence and depression: The role of illusory self-perceptions. *Journal of Abnormal Psychology*, *89*, 203–212.
- Linley, A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress*, *17*, 11–21.
- Maslow, A. H. (1950). Self-actualizing people: A study of psychological health. In *Personality: Symposium No. 1* (pp. 11–34). New York: Grune & Stratton.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, *129*, 52–71.
- Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology*, *46*, 598–609.
- Paulhus, D. L. (1991a). *Assessing self-deception and impression management in self-reports: The Balanced Inventory of Desirable Responding, Version 6*. Unpublished manual, University of British Columbia.
- Paulhus, D. L. (1991b). Measurement and control of response bias. In J. P. Robinson, P. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (pp. 17–59). San Diego, CA: Academic Press.
- Paulhus, D. L. (1998). Interpersonal and intrapsychic adaptiveness of trait self-enhancement: A mixed blessing? *Journal of Personality and Social Psychology*, *74*, 1197–1208.
- Paulhus, D. L., & Reid, D. B. (1991). Enhancement and denial in socially desirable responding. *Journal of Personality and Social Psychology*, *60*, 307–317.
- Petrie, K. J., Buick, D. L., Weinman, J., & Booth, R. J. (1999). Positive effects of illness reported by myocardial infarction and breast cancer patients. *Journal of Psychosomatic Research*, *47*, 537–543.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*, 717–731.
- Rioli, L., Savicki, V., & Cepani, A. (2002). Resilience in the face of catastrophe: Optimism, personality and coping in the Kosovo crisis. *Journal of Applied Social Psychology*, *32*, 1604–1627.
- Robins, R. W., & Beer, J. S. (2001). Positive illusions about the self: Short-term benefits and long-term costs. *Journal of Personality and Social Psychology*, *80*, 340–352.
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, *4*(3), 219–247.
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. *Journal of Personality and Social Psychology*, *67*(6), 1063–1078.
- Shalev, A. Y. (2002). Acute stress reactions in adults. *Biological Psychiatry*, *51*(7), 532–543.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (2002). Pride and prejudice: Fear of death and social behavior. *Current Directions in Psychological Science*, *9*, 200–204.
- Svenson, O. (1981). Are we all less risky and more skillful than our fellow driver? *Acta Psychologica*, *47*, 143–148.
- Swann, W. B., Jr., & Read, S. J. (1981). Self-verification processes: How we sustain our self-conceptions. *Journal of Experimental Social Psychology*, *17*, 351–372.
- Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *38*, 1162–1173.
- Taylor, S. E., & Armor, D. A. (1996). Positive illusions and coping with adversity. *Journal of Personality*, *64*, 873–898.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*, 193–210.
- Taylor, S. E., & Brown, J. D. (1994). Positive illusions and well-being revisited: Separating fact from fiction. *Psychological Bulletin*, *116*, 21–27.
- Taylor, S. E., Kemeny, M. E., Reed, G. M., & Aspinwall, L. G. (1991). Assault on the self: Positive illusions and adjustment to threatening events. In J. Strauss & G. R. Goethals (Eds.), *The self: Interdisciplinary approaches* (pp. 239–254). New York: Springer-Verlag.
- Taylor, S. E., Lerner, J. S., Sherman, D. K., Sage, R. M., & McDowell, N. K. (2003a). Are self-enhancing cognitions associated with healthy or unhealthy biological profiles? *Journal of Personality and Social Psychology*, *85*, 605–615.
- Taylor, S. E., Lerner, J. S., Sherman, D. K., Sage, R. M., & McDowell, N. K. (2003b). Portrait of the self-enhancer: Well adjusted and well liked or maladjusted and friendless? *Journal of Personality and Social Psychology*, *84*, 165–176.
- Taylor, S. E., Lichtman, R. R., & Wood, J. V. (1984). Attributions, beliefs about control, and adjustment to breast cancer. *Journal of Personality and Social Psychology*, *46*, 489–502.
- Taylor, S. E., Wood, J. V., & Lichtman, R. R. (1983). It could be worse: Selective evaluation as a response to victimization. *Journal of Social Issues*, *39*, 19–40.
- Vaillant, G. (1977). *Adaptation to life*. Boston: Little, Brown.
- Vrana, S., & Lauterbach, D. (1994). Prevalence of traumatic events and posttraumatic psychological symptoms in a nonclinical sample of college students. *Journal of Traumatic Stress*, *7*, 289–302.
- Weinstein, N. D. (1980). Unrealistic optimism about future life events. *Journal of Personality and Social Psychology*, *39*, 806–820.
- Weinstein, N. D. (1982). Unrealistic optimism about susceptibility to health problems. *Journal of Behavioral Medicine*, *5*, 441–460.

(Appendix follows)

### Appendix

#### Self-Deceptive Enhancement Scale Items (Paulhus, 1984, 1991a, 1998)

Even items are reverse scored

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. My first impressions of people usually turn out to be right.</li> <li>2. It would be hard for me to break any of my bad habits.</li> <li>3. I don't care to know what other people really think of me.</li> <li>4. I have not always been honest with myself.</li> <li>5. I always know why I like things.</li> <li>6. When my emotions are aroused, it biases my thinking.</li> <li>7. Once I've made up my mind, other people can seldom change my opinion.</li> <li>8. I am not a safe driver when I exceed the speed limit.</li> <li>9. I am fully in control of my own fate.</li> <li>10. It's hard for me to shut off a disturbing thought.</li> <li>11. I never regret my decisions.</li> </ol> | <ol style="list-style-type: none"> <li>12. I sometimes lose out on things because I can't make up my mind soon enough.</li> <li>13. The reason I vote is that my vote can make a difference.</li> <li>14. My parents were not always fair when they punished me.</li> <li>15. I am a completely rational person.</li> <li>16. I rarely appreciate criticism.</li> <li>17. I am very confident of my judgments.</li> <li>18. I have sometimes doubted my ability as a lover.</li> <li>19. It's all right with me if some people happen to dislike me.</li> <li>20. I don't always know the reasons why I do the things I do.</li> </ol> |
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