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Is the concept of “repression” useful for the understanding chronic PTSD?

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Abstract

Theories concerning the value of avoiding versus attending to trauma-related thoughts provide mixed support for specific coping strategies such as repression. The goal of this study is to examine the usefulness of the concept of repression in understanding chronic Posttraumatic Stress Disorder (PTSD). One hundred and fifty individuals who had been in a motor vehicle accident were included. Participants were classified into four groups (repressors, low anxious, high anxious, and defensively high anxious) based on methodology introduced by Weinberger et al. [J. Abnormal Psychol. 88 (1979) 369]. These four groups were compared on measures of PTSD symptomatology, anxiety, depression, and where appropriate, perceived pain and disability. Results revealed a fairly consistent pattern of group differences such that repressors reported fewer PTSD symptoms, fewer additional anxiety disorders, less depression, and less physical disability due to pain relative to the high anxious and defensively high anxious groups. Regression analyses examining the separate and interactive effects of anxiety and social desirability to predict PTSD symptomatology showed that the majority of the variance was explained by anxiety. In many respects, these data suggest that repression may not be a useful concept for understanding chronic PTSD.

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1. Introduction

The role of coping following distressing life events has received considerable research attention over the years (Lazarus & Folkman, 1984). Evidence from studies in both clinical and

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social psychology has been used to examine the impact of coping styles in the aftermath of difficult events. Some studies have pointed to the positive value of emotion-focused coping (Amir, Kaplan, Efroni, Levine, Benjamin, & Kotler, 1997; Reynolds & Brewin, 1998), while others have noted the opposite, namely that avoidance of affect is more beneficial following stressful experiences such as the death of a spouse (Bonanno, Keltner, Holen, & Horowitz, 1995). Although such findings are relevant in understanding coping in the aftermath of distressing experiences, it is difficult to ascertain whether these findings are useful for understanding Post-traumatic Stress Disorder (PTSD) as defined within the current nosological system. It is possible that life stressors, such as the death of one's spouse or retirement, evoke different coping skills, relative to traumatic events, which are defined within the current diagnostic framework as situations that involve actual or threatened death, serious injury, or threat to the integrity of oneself or others (American Psychiatric Association, 2000). The goal of this paper is to examine the usefulness of one form of coping, specifically "repression", in understanding chronic PTSD.

There are a variety of ways to define the concept of repression. Holmes (1990) provides an in-depth historical overview of the conceptualization of repression and research on this topic, which began with Freud's (1915) proposal that repression is the act of "forgetting" those thoughts or emotions that cause conflict or anxiety. More recently, social psychologists have focused on repression as an individual difference factor (Bryne, Barry, & Nelson, 1963; Davis & Schwartz, 1987; Weinberger, Schwartz, & Davidson, 1979). A number of definitions have been used to identify "repressors", or individuals who use a repressive coping style (Bryne et al., 1963; Coopersmith, 1960; Weiner, 1965). The most commonly used definition was introduced by Weinberger et al. and describes repressors as individuals who have an elevated threshold for detecting anxiety-provoking cues. Based on this perspective, identifying repressors involves the creation of four groups using self-report measures of anxiety and defensiveness. By using median splits on both measures, four categories of individuals can be derived: repressors (low anxiety, high defensiveness), low anxious (low anxiety, low defensiveness), high anxious (high anxiety, low defensiveness), and defensively high anxious (high anxiety, high defensiveness). Although studies differ in their choice of anxiety measure (e.g., the Taylor Manifest Anxiety Scale, Taylor, 1953; the State Trait Anxiety Inventory, Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), most studies have used the Marlowe–Crowne Social Desirability Scale (M–C; Crowne & Marlowe, 1960) as a measure of defensiveness.

The characteristics of these four groups have been examined in non-clinical samples (Weinberger, 1990). These studies indicate that the low anxious group shows a tendency to be flexible in their coping style and to benefit from interpersonal relationships. The high anxious group readily reports the occurrence of anxiety. Very little is known about the defensively high anxious group because previous studies have not identified many participants in this category. In contrast, repressors have received a great deal of research attention (e.g., Furnham & Traynar, 1999). Weinberger et al. (1979) found that repressors show more physiological reactivity during a word association task relative to the low anxious group although this arousal was not accompanied by elevated anxiety. Relatedly, Brosschot and Janssen (1998) suggest that repressors experience dissociation between affective and autonomic responses when they are exposed to threatening material, which leads them to misinterpret autonomic information as somatic complaints. Moreover, research has suggested that repressors have more health problems (Schwartz, 1990) and endorse more chronic pain complaints (Burns, 2000). Additionally, studies have

revealed that repressors not only refrain from reporting negative affect but they also endorse high emotional intelligence, high self-esteem, and greater levels of life satisfaction (Furnham, Petrides, & Spencer-Bowdage, 2002), suggesting the positive benefits of this coping style.

Although there has been considerable research on repression in non-clinical samples, this concept has received very little attention in clinical samples, particularly in reference to how certain types of coping after a traumatic event are associated with PTSD. Theories addressing the development of PTSD espouse contradictory opinions about the importance of attending to versus avoiding trauma-related thoughts. Horowitz (1976) argues that following a traumatic event, the individual attempts to integrate information associated with the trauma into their preexisting view of the world. Avoidance of trauma-related thoughts and feelings may hinder this integration process and result in the development and maintenance of PTSD symptoms. Similarly, Brewin, Joseph, and Dalgleish (1996) propose a dual representation theory of the development of PTSD, which suggests that the way in which traumatic information is processed into verbal and situationally accessible memories plays an important role in post-trauma functioning. This theory posits that individuals who prematurely inhibit the processing of a trauma have a tendency to exhibit a repressive coping style. Other theories argue that some avoidance of trauma-related thoughts can be adaptive, particularly if this is implemented in a flexible manner and not taken to an extreme (Erdelyi, 1990; Lazarus, 1983; Roth & Cohen, 1986). This perspective suggests that when trauma-related thoughts and feelings are too overwhelming, disengaging from one's thoughts and emotions might allow an individual to gradually approach these cues. Thus, the field has yet to come to a consensus at the conceptual level about the function and impact of avoiding versus attending to trauma-related thoughts and feelings. As such, it is difficult to tell whether constructs such as "repression" are useful in the study of PTSD.

To date, there are no studies on repression (operationalized using the Weinberger et al. (1979) definition) that involve samples of individuals who have been exposed to a trauma. In work with non-clinical samples, repression has shown to be associated with decreased negative affect, increased physiological arousal, more somatic complaints, and greater life satisfaction. However, these results may not generalize to traumatized populations because they have been derived from unselected samples of undergraduate volunteers who may share few similarities with traumatized community samples. Conceptually, there are reasons to expect that repressors who have experienced a traumatic event might report more severe emotional problems relative to non-repressors. On the other hand, traumatized repressors might not differ in their emotional responses or might report less severe emotional difficulties relative to non-repressors who have experienced a trauma. Given the lack of evidence about the interrelationship between a repressive coping style and post-trauma functioning, the current study is exploratory in nature. Thus, the goal of this paper is to examine the question of whether the concept of "repression" is useful for understanding chronic PTSD, using a sample of individuals who had been involved in a serious motor vehicle accident (MVA). Using the methodology described by Weinberger et al., participants were classified as repressors, low anxious, high anxious, or defensively high anxious and were examined on measures of PTSD. Additional measures of mood and anxiety were included, in order to explore broader dimensions of affect in the four sub-samples. For those participants, reporting chronic pain from injuries sustained during the MVA, measures of perceived pain severity and disability also were included.

2. Method

2.1. Participants

Participants volunteered as part of a larger study of the assessment and treatment of PTSD following a MVA. All participants had experienced or witnessed a MVA at least 6 months prior to assessment and met Criterion A for PTSD according to the DSM-IV (APA, 2000) by endorsing feelings of fear, helplessness, or horror in response to the MVA. Because considerable variation exists in symptomatology during the first 6 months after a trauma (Rothbaum, Foa, Riggs, Murdock, & Walsh, 1992), this study focused on individuals whose MVAs occurred at least 6 months prior to assessment. Participants were excluded from the current study if they were over the age of 65, had a severe head injury, or endorsed current substance abuse or dependence. One hundred and fifty participants (108 females, 42 males) were included in the study. The sample had a mean age of 40.24 ($SD = 10.80$) and the majority (86%) was Caucasian. Fifty percent had at least a college degree and 47% were married. The majority of the sample (55%) reported working full- or part-time. Seventy-five percent reported that they were taking psychotropic medication for anxiety or depression and 71% ($n = 107$) of the sample reported continued pain as a result of injuries sustained in the MVA.

The participants were classified into four groups according to their scores on the Trait Anxiety Scale of the State-Trait Anxiety Inventory (STAI-T; Spielberger et al., 1983) and the M-C (Crowne & Marlowe, 1960). Traditionally, median splits on these two measures would constitute the parameters for group membership. However, an examination of the sample mean for the STAI-T revealed a notably higher mean compared to normative means for adult samples (Spielberger et al.). To remain consistent with previous research on repression (e.g., Fox, 1994; Myers & Derakshan, 2000), a cutoff of 40 was selected for the STAI-T. The median for the M-C in this sample was 18, which was similar to past research (e.g., Weinberger et al., 1979). Using these cutoff scores, the four groups included 31 in the repressors group, 24 in the low anxious group, 59 in the high anxious group, and 36 in the defensively high anxious group.

The groups did not differ with respect to gender ($\chi^2(3, n = 150) = 2.57$, ns), number of months post-MVA ($F(3, 146) = 1.56$, ns), race ($\chi^2(3, n = 150) = 4.04$, ns), marital status ($\chi^2(3, n = 150) = 0.46$, ns), and education level ($\chi^2(3, n = 150) = 9.38$, ns; see Table 1). In addition, the groups did not differ with respect to the percentage endorsing pain complaints as a result of the MVA ($\chi^2(3, n = 150) = 5.46$, ns). The groups did differ on employment status ($\chi^2(3, n = 150) = 14.95$, $p = 0.002$), with the low anxious group being more likely to be employed relative to the high anxious group and the defensively high anxious group. The repressors were more likely to be employed relative to the defensively high anxious group. Also, the groups differed with respect to percentage taking psychotropic medication ($\chi^2(3, n = 150) = 15.42$, $p = 0.001$), such that the low anxious group was less likely to be taking medication relative to the repressor, high anxious, and defensively high anxious groups. When the groups were compared with respect to age, a significant difference was found ($F(3, 146) = 4.07$, $p = 0.008$). Specifically, the low anxious group was younger than the defensively high anxious group (see Table 1).

Table 1
Comparisons of the groups on demographic variables

	Repressors (<i>n</i> = 31)	Low anxious (<i>n</i> = 24)	High anxious (<i>n</i> = 59)	Defensive high anxious (<i>n</i> = 36)	<i>p</i>
Percent female	80.65%	62.50%	69.49%	75.00%	ns
Number of months post-MVA	54.29 (62.23)	61.00 (75.81)	36.97 (61.02)	33.25 (46.99)	ns
Percent Caucasian	83.87%	91.67%	86.44%	83.33%	ns
Percent married	51.61%	58.33%	54.24%	50.00%	ns
Percent with a college degree or higher	35.48%	66.67%	49.15%	36.11%	ns
Percent with chronic pain	67.74%	54.17%	74.58%	80.56%	ns
Percent employed full- or part-time	67.74% ^{a,b}	82.61% ^a	47.37% ^{c,b}	37.14% ^c	0.002
Percent taking medication	75.19% ^a	45.83% ^b	79.66% ^a	80.89% ^a	0.001
Age	39.55 (10.01) ^{a,b}	35.13 (11.43) ^a	40.08 (10.73) ^{a,b}	44.64 (9.77) ^b	0.008

Note: Means with the same superscript are not statistically different. Numbers in parentheses are standard deviations.

2.2. Measures

2.2.1. Group classification measures

As outlined in Weinberger et al. (1979), self-report measures of defensiveness (the M–C) and anxiety (the STAI-T) were administered. The M–C is a well-recognized questionnaire used to assess the tendency to self-report in a socially desirable manner (Crowne & Marlowe, 1960). The M–C is a 33-item questionnaire in which higher scores indicate increased defensiveness. In a sample of 39 undergraduates, the M–C was found to have 1-month test–retest reliability of 0.89 and an internal consistency coefficient of 0.88 (Crowne & Marlowe, 1960). The STAI-T was created to measure trait anxiety, a relatively stable tendency for an individual to react anxiously to stress (Spielberger et al., 1983). The STAI-T is a 20-item measure in which participants indicate how generally true each statement is of them on a 4-point scale labeled “almost never”, “sometimes”, “often”, and “almost always”. The STAI-T has a 20-day test–retest reliability between 0.76 and 0.86 for college students and a median alpha coefficient of 0.90 in sample of working adults, students, and military recruits (Spielberger et al.). Higher scores on this subscale indicate greater trait anxiety.

2.2.2. PTSD measures

PTSD symptomatology was assessed with both clinician and self-report measures. The Clinician Administered PTSD Scale (CAPS) is a structured interview designed to assess the frequency and intensity of the 17 symptoms of PTSD in the past month (Blake et al., 1990). The frequency and intensity of each symptom are rated on a 5-point Likert-type scale, where 0 indicates that the symptom has not occurred or is not distressing to the individual and 4 indicates that the symptom occurs nearly every day or is severely distressing. The CAPS was used to create several different variables: whether the participant met DSM-IV diagnostic criteria for PTSD and PTSD symptom cluster scores (frequency × intensity score, summed within each cluster). As reviewed by Weathers, Keane and Davidson (2001), the CAPS has excellent support for its reliability, with alpha coefficients generally ranging from 0.73 to 0.98. Two to 3 day test–retest reliability was found to range from 0.78 to 0.87 (Weathers et al.). Additionally, Blanchard, Hickling, Taylor, Loos, and Forneris (1996) demonstrated sensitivity of the CAPS to the detec-

tion of PTSD in MVA survivors. In the current study, the CAPS was administered by trained doctoral students in clinical and counseling psychology. All interviews were videotaped and 28% ($n = 42$) were randomly selected and rated by an independent reviewer to establish inter-diagnostic reliability, which was strong ($k = 0.91$).

Participants completed two self-report scales of PTSD-related distress, the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979) and the PTSD Symptom Scale—Self Report (PSS-SR; Foa, Riggs, Dancu, & Rothbaum, 1993). The IES consists of 15 items that form two subscales: the avoidance subscale and the intrusion subscale (Horowitz et al.). The IES has been shown to have high internal consistency with alpha coefficients of 0.78 for the intrusion subscale and 0.82 for the avoidance subscale in a sample of 66 outpatients being treated for stress-related syndromes (Horowitz et al.). The 1-week test–retest reliability was 0.89 for the intrusion subscale and 0.79 for the avoidance subscale (Horowitz et al.). The PSS-SR contains 17 items, reflecting the DSM-IV symptoms of PTSD, which are rated on a 3-point Likert scale and summed to yield a total score. Foa et al. evaluated the psychometric properties of the PSS-SR with a sample of 46 female recent rape victims and 72 female recent non-sexual assault victims. In this sample, the PSS-SR showed high internal consistency ($\alpha = 0.91$) and good 1-month test–retest reliability ($r = 0.74$). Higher scores on both the IES and PSS-SR indicate the presence of more PTSD symptoms.

2.2.3. *Measures of mood and additional anxiety disorders*

Presence of mood and additional anxiety disorders was assessed using the Anxiety Disorders Interview Schedule (ADIS-IV; DiNardo, Brown, & Barlow, 1994). The ADIS-IV was administered by trained clinical and counseling doctoral students and 28% of the interviews ($n = 42$) were reviewed by an independent diagnostician to establish reliability. Agreement between diagnosticians was strong for Panic Disorder ($k = 1.0$), Bipolar I Disorder ($k = 1.0$), Generalized Anxiety Disorder ($k = 0.93$), Specific Phobia ($k = 0.92$), and Social Phobia ($k = 0.80$), moderate for Major Depressive Disorder ($k = 0.78$), and Panic Disorder with Agoraphobia ($k = 0.77$), and marginal for Obsessive Compulsive Disorder ($k = 0.54$). Previous research has found the ADIS-IV to be a reliable and valid instrument for diagnosing anxiety and mood disorders (Brown, DiNardo, Lehman, & Campbell, 2001).

The Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961), a 21-item self-report measure of depression, also was administered. The BDI is a widely used measure of depression, which has been shown to be highly valid and reliable (Beck, Steer, & Garbin, 1988).

2.2.4. *Physical functioning measures*

Two self-report measures, the Sickness Impact Profile (SIP; Bergner et al., 1976) and the Multidimensional Pain Inventory (MPI; Kerns, Turk, & Rudy, 1985), were used to assess pain severity and disability. The SIP is a 136-item measure divided into two subscales, which assess physical and psychosocial functioning (Bergner et al.). The physical subscale includes items that refer to body care and management, mobility, and ambulation. The psychosocial subscale includes items that refer to emotional behavior, social interaction, alertness behavior, and communication. Higher scores on the subscales indicate greater physical and psychosocial dysfunction.

tion. The alpha coefficient was found to be 0.81 (Bergner, Bobbitt, Carter, & Gilson, 1981) and the test–retest reliability was found to be greater than 0.80 for chronic pain patients (Deyo, 1986).

The MPI is a self-report measure developed to address multiple facets of the pain experience (Kerns et al., 1985). Five subscales of the MPI were used in the current study, which were selected because they most directly assess pain and disability. These subscales included pain severity, perceptions of pain interference, perceived life control, affective distress, and general activity level. The internal consistency for each of the subscales ranged between 0.70 and 0.90 in a sample of 120 chronic pain patients and the 2-week test–retest reliability for the subscales ranged between 0.62 and 0.91 in a sample of 60 chronic pain patients (Kerns et al., 1985).

2.3. Procedure

After providing informed consent, participants were administered the two structured interviews followed by the self-report questionnaires. Feedback was not provided to participants until after all measures were completed.

3. Results

3.1. Between-group comparisons

In order to examine between-group differences on measures of PTSD symptomatology, mood and additional anxiety disorders, and physical functioning, χ^2 and ANOVAs were conducted using a family-wise Bonferroni correction procedure to control for the number of analyses within family. The p -value was set at 0.007 (0.05/7) for PTSD-related analyses and physical functioning analyses. For analyses focusing on mood and other anxiety disorders, the p -value was set at 0.017 (0.05/3).

3.1.1. PTSD-related measures

With respect to PTSD diagnostic status, the groups differed significantly ($\chi^2(3, n = 149) = 38.13, p < 0.001$), such that the repressors and the low anxious group were less likely to be diagnosed with PTSD relative to the high anxious and defensively high anxious groups. Additionally, significant group differences were noted with respect to the CAPS re-experiencing symptom cluster score ($F(3, 145) = 10.40, p < 0.001$), the CAPS avoidance and numbing symptom cluster score ($F(3, 145) = 19.88, p < 0.001$), the CAPS hyperarousal symptom cluster score ($F(3, 145) = 16.96, p < 0.001$), PSS-SR total score ($F(3, 146) = 26.88, p < 0.001$), the IES intrusion subscale ($F(3, 146) = 14.73, p < 0.001$), and the IES avoidance subscale ($F(3, 146) = 17.25, p < 0.001$). Follow-up analyses revealed a consistent pattern of differences between the groups on PTSD symptomatology, which indicated that repressors and the low anxious group reported fewer symptoms of PTSD as compared to the high anxious and defensively high anxious groups (see Table 2).

Table 2

Summary of between-group comparisons on PTSD-related measures and mood and additional anxiety disorders

	Repressors (<i>n</i> = 31)	Low anxious (<i>n</i> = 24)	High anxious (<i>n</i> = 59)	Defensive high anxious (<i>n</i> = 36)	<i>p</i>
<i>PTSD-related measures</i>					
Percentage with PTSD	12.90% ^a	12.5% ^a	63.79% ^b	66.67% ^b	0.001
CAPS re-experiencing	10.90 (8.14) ^a	6.83 (7.15) ^a	16.19 (8.35) ^b	17.69 (9.87) ^b	0.001
CAPS avoidance and numbing	8.19 (8.14) ^a	6.38 (7.22) ^a	19.91 (11.24) ^b	22.17 (12.06) ^b	0.001
CAPS hyperarousal	8.87 (8.18) ^a	6.75 (5.60) ^a	18.57 (8.77) ^b	17.81 (10.22) ^b	0.001
PSS-SR	10.58 (8.74) ^a	6.67 (8.84) ^a	25.32 (11.79) ^b	26.42 (13.32) ^b	0.001
IES intrusion	8.52 (7.91) ^a	4.54 (8.22) ^a	16.95 (10.00) ^b	18.28 (11.06) ^b	0.001
IES avoidance	8.84 (10.05) ^a	5.50 (8.39) ^a	19.92 (10.58) ^b	19.36 (10.99) ^b	0.001
<i>Mood and additional anxiety disorders</i>					
Number of mood disorders	0.03 (0.18) ^a	0.00 (0.00) ^a	0.58 (0.56) ^b	0.75 (0.51) ^b	0.001
Number of additional anxiety disorders	0.39 (0.67) ^a	0.29 (0.62) ^a	1.31 (1.18) ^b	1.11 (0.98) ^b	0.001
BDI	7.81(5.24) ^a	4.13 (2.98) ^a	23.24 (10.87) ^b	22.56 (9.58) ^b	0.001

Note: Means with the same superscript are not statistically different at $p < 0.05$. Numbers in parentheses are standard deviations. PTSD, Posttraumatic Stress Disorder; CAPS, Clinician Administered PTSD Scale; PSS-SR, PTSD Symptom Scale—Self Report; IES, Impact of Event Scale; BDI, Beck Depression Inventory.

3.1.2. Mood and other anxiety disorders

Significant between-group differences were noted for the number of additional anxiety disorders ($F(3, 146) = 10.11, p < 0.001$), number of mood disorders ($F(3, 146) = 16.53, p < 0.001$), and BDI score ($F(3, 145) = 43.85, p < 0.001$). Follow-up analyses revealed that the low anxious group and the repressors were diagnosed with significantly fewer additional anxiety and mood disorders and reported lower BDI scores relative to the high anxious and defensively high anxious groups (see Table 2).

3.1.3. Physical functioning

The groups differed with respect to the physical ($F(3, 100) = 6.03, p < 0.001$) and psychosocial ($F(3, 100) = 23.64, p < 0.001$) subscales of the SIP, the pain severity subscale of the MPI ($F(3, 92) = 4.48, p < 0.006$), the pain interference subscale of the MPI ($F(3, 92) = 12.79, p < 0.001$), the life control subscale of the MPI ($F(3, 92) = 17.80, p < 0.001$), the affective distress subscale of the MPI ($F(3, 92) = 18.65, p < 0.001$), and the general activity level subscale of the MPI ($F(3, 92) = 5.07, p < 0.003$). Follow-up analyses of the psychosocial subscale of the SIP, pain interference subscale of the MPI, life control subscale of the MPI, and affective distress subscale of the MPI found that the low anxious group and the repressors endorsed less psychosocial difficulties due to pain relative to the high anxious and defensively high anxious groups. A slightly different pattern of differences was observed with respect to the physical subscale of the SIP, pain severity subscale of the MPI, and the general activity level subscale of the MPI, such that the low anxious group reported less physical disability, less pain, and greater involvement in physical activities compared to the high anxious and defensively high anxious

Table 3
Between-groups comparisons on physical functioning measures

	Repressors (<i>n</i> = 21)	Low anxious (<i>n</i> = 13)	High anxious (<i>n</i> = 44)	Defensive high anxious (<i>n</i> = 29)	<i>p</i>
SIP physical	10.58 (8.67) ^{a,b}	4.04 (4.71) ^a	14.32 (11.63) ^b	18.52 (12.24) ^b	0.001
SIP psychosocial	9.48 (8.54) ^a	3.05 (3.68) ^a	33.29 (17.11) ^b	32.54 (17.92) ^b	0.001
MPI pain severity	44.44 (12.43) ^{a,b}	32.12 (14.50) ^a	47.83 (10.58) ^b	48.10 (13.64) ^b	0.006
MPI pain interference	43.54 (10.39) ^a	34.71 (12.52) ^a	52.32 (7.11) ^b	52.53 (9.56) ^{a,b}	0.001
MPI life control	54.12 (4.41) ^a	58.35 (3.53) ^a	46.42 (6.84) ^b	44.82 (6.89) ^b	0.001
MPI affective distress	38.53 (7.82) ^a	36.05 (8.74) ^a	52.15 (8.94) ^b	52.77 (9.44) ^b	0.001
MPI general activity level	52.32 (9.85) ^{a,b}	58.72 (8.26) ^a	48.85 (8.86) ^b	46.04 (9.16) ^b	0.003

Note: Means with the same superscript are not statistically different at $p < 0.05$. Numbers in parentheses are standard deviations. SIP, Sickness Impact Profile; MPI, Multidimensional Pain Inventory.

groups. However, the repressors did not differ from the other groups on these measures (see Table 3).

3.2. What are the respective contributions of anxiety and social desirability in predicting PTSD-related measures?

Given the fairly consistent pattern of the low anxious and repressor groups reporting less dysfunction relative to the high anxious and defensively high anxious groups, additional analyses were undertaken to further examine the construct of repression as it was operationalized in this study (i.e. the interaction of anxiety and defensiveness). In particular, we were interested in exploring the separate and interactive contributions of anxiety and social desirability in predicting PTSD symptomatology. To pursue this question, separate regression analyses using the STAI-T, the M–C, and the multiplicative interaction term of STAI-T and M–C as predictors were conducted with the sum of the CAPS symptom cluster scores (CAPS total), PSS-SR, and the IES intrusion and avoidance subscales as criterion variables. Regression models were found to be significant for each of the criterion variables: CAPS total ($F(3, 145) = 31.20, p < 0.001$), PSS-SR ($F(3, 146) = 61.76, p < 0.001$), the IES intrusion subscale ($F(3, 146) = 31.05, p < 0.001$), and the IES avoidance subscale ($F(3, 146) = 29.01, p < 0.001$). Examination of the predictors in these regression models revealed that both the M–C and the STAI-T were significant predictors of each of the criterion variables, except in the case of the avoidance subscale of the IES, in which only the STAI-T was a significant predictor. The interaction of the STAI-T and M–C was not a significant predictor in any regression model. To compare the amount of variance attributable to each of the predictor variables, squared semipartial correlations (sr^2) were calculated for the STAI-T, M–C, and the interaction term for each regression analysis (see Table 4). Results showed that the STAI-T accounted for a notably larger proportion of variance as compared to the M–C and the interaction term (see Table 4). These results suggest that when the individual components of repression are examined, anxiety alone contributes the most in the prediction of PTSD symptomatology.

Table 4

Standardized regression coefficients and squared semipartial correlations for regression analyses

Criterion variable	Interaction of STAI-T and M–C		STAI-T		M–C	
	β	sr ²	β	sr ²	β	sr ²
CAPS total	–0.062	0.003	0.636*	0.384	0.153*	0.021
IES intrusion	–0.024	0.0005	0.635*	0.383	0.201*	0.037
IES avoidance	–0.015	0.0002	0.625*	0.370	0.112	0.011
PSS-SR	0.004	0.00001	0.767*	0.558	0.170*	0.027

Note: STAI-T, State Trait Anxiety Inventory-Trait subscale, M–C, Marlowe–Crowne Social Desirability Scale, CAPS, Clinician Administered PTSD Scale, IES, Impact of Event Scale, PSS-SR, Posttraumatic Symptom Scale—Self Report.

* $p < 0.001$.

4. Discussion

This study examined whether the concept of “repression” is useful for understanding chronic PTSD. Between-group comparisons on psychological and physical functioning variables revealed a fairly consistent pattern of differences between the groups. Repressors did not significantly differ in their levels of PTSD symptomatology, depression, and additional anxiety disorders, relative to the low anxious group. The high anxious and defensively high anxious groups appeared to experience significantly greater psychological distress compared to repressors and the low anxious group. With only a few exceptions, the same pattern of differences was observed when participants reporting pain were compared on physical functioning measures. Specifically, the repressor and the low anxious groups reported less disability due to pain, greater perceived control of their lives, and less affective distress due to pain relative to the high anxious and defensively high anxious groups. When the components of repression (i.e. anxiety and social desirability) were examined for their ability to predict PTSD symptomatology, anxiety appeared to account for the largest proportion of the variance. Interestingly, the interaction of anxiety and social desirability, which is the operational definition of repression, was not a significant predictor of PTSD symptomatology in any of these analyses.

Three interpretations can be proposed to explain these results. First, these data might indicate that repression is an adaptive coping strategy in the aftermath of a traumatic event. In particular, individuals in the repressive coping group reported fewer emotional and physical problems, relative to individuals in the high anxiety groups. This interpretation would be in line with select research, which suggests that repressors possess high emotional intelligence, high self-esteem, and greater life satisfaction (e.g., Furnham et al., 2002). Additionally, Bonanno et al. (1995) found that avoidance of emotion during bereavement was related to fewer grief symptoms. At a conceptual level, this interpretation would support the notion that avoiding trauma-related material might be an adaptive form of coping (Erdelyi, 1990; Lazarus, 1983; Roth & Cohen, 1986). However, given numerous studies documenting the importance of exposure to trauma-related thoughts in the treatment of PTSD (Rothbaum, Meadows, Resick, & Foy,

2000), this is an unlikely interpretation. Additionally, several other interpretations seem more plausible.

Second, because the repression group was formed, in part, based on scores on the Marlowe–Crowne, the impact of social desirability is salient. As noted in the regression analyses, social desirability exerted a significant influence in the prediction of PTSD-related distress, measured via the CAPS, the PSS-SR, and the intrusion subscale of the IES. Thus, the effects of a socially desirable reporting style appear to be a contributor to these results. The third (and more likely) interpretation is that the concept of repression is not useful for understanding PTSD in this sample. The pattern of results suggests that individuals reporting low anxiety (the repressor and the low anxious groups) endorse less PTSD symptomatology, other psychological distress, and disability, whereas individuals reporting high anxiety (the high anxious and defensively high anxious groups) indicated that they experience greater psychological and physical functioning difficulties. This conclusion is echoed in the results of the regression analyses.

It is important to note that the findings concerning pain and disability are in contrast with the previous report by Burns (2000), which found that repressors report considerable chronic pain complaints. Why then did the repressors in the current sample report relatively low levels of pain-related problems? One possible explanation is related to the fact that pain complaints in this sample were the result of injuries sustained during the MVA. Given the common origin of both emotional (PTSD) and physical (pain) problems, it is possible that these two types of difficulties influence the maintenance of one another (Sharp & Harvey, 2001). Thus, the observation that repressors report fewer pain complaints is consistent with the observation that this group reported less PTSD, anxiety, and depression, relative to the two high anxiety groups. This finding suggests that repressors who experience chronic pain as result of injuries sustained in a trauma may cope with their pain in the same way that they cope with their emotional reactions.

In considering the general topic of repression, it is important to remain mindful that a number of related constructs appear conceptually similar. For example, Freyd (1996) has discussed the role of “forgetting” among survivors of childhood sexual abuse, with particular emphasis on the social utility of remaining unaware of this traumatic experience. Likewise, related research has noted that deliberate thought suppression might play a role in the maintenance of PTSD symptoms (Harvey & Bryant, 1998; Shipherd & Beck, 1999). The construct of dissociation has also been discussed within the trauma literature (Bremner & Marmar, 1998), with particular relevance to the development of PTSD (Shalev, Peri, Canetti, & Schreiber, 1996; Tichenor, Marmar, Weiss, Metzler, & Ronfeldt, 1996). Although each of these constructs refers to one aspect of avoidance of trauma-related thoughts and affects, their conceptual roots are different. Each of these constructs seems to differ according to how volitional, controlled, or deliberate they are, according to specific writers (Freyd, 1996; Holmes, 1990; Weinberger, 1990). Additionally, it is salient to note that repression, as operationalized in this report, represents a static process that presumably is an individual difference variable. This may differ in important ways from conceptualizing repression as a process that one utilizes following a negative event. Clearly, there is a lack of theoretical clarity concerning these issues, which may cloud our understanding of coping and avoidance in the aftermath of a traumatic event.

Although this study is the first to examine the usefulness of repression in understanding chronic PTSD, it has limitations. First, the current study relied heavily on self-report measures. This is a potential problem given the role that social desirability is thought to play in repression.

Thus, it is difficult to ascertain from the current study if repressors' reports of very little psychological distress and physical pain are reflective of a tendency to deny symptoms that are socially undesirable. Ideally, it would be beneficial to use multiple measurement methods to address the issue of reporting bias that repressors may exhibit. Future research should consider using information processing paradigms (e.g., dot probe task, stroop task, etc.) as unbiased measurements of avoidance of trauma-related cues. As well, the findings may not generalize to individuals who have experienced other types of traumatic events, particularly events that involve social betrayal (e.g., spousal violence; Freyd, 1996). Ideally, future work can be expanded to include a broader range of trauma survivors. Because this study used a cross-sectional design, it is not possible to determine how different coping styles might influence the development of PTSD.

In conclusion, this study addressed the usefulness of the concept of repression in understanding chronic PTSD. Results suggested that repressors experience relatively few PTSD symptoms, very little psychological distress, and limited disability due to injuries. Given the proportion of variance accounted for by anxiety in the prediction of post-trauma symptoms, it appears that the concept of repression is not useful in understanding chronic PTSD in this context.

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