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Personnel: Are Such States Helpful?***

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Spontaneous and Deliberate Dissociative States in Military Personnel: Are Such States Helpful?

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This study explored distinctions between spontaneous and deliberate dissociative states in 335 military personnel exposed to stressful survival training. Participants completed the Clinician-Administered Dissociative States Scale (CADSS) after a stressful mock-captivity event. They were also asked to indicate whether the dissociative experiences just happened (i.e., spontaneous), or whether they chose to have them happen (i.e., deliberate); and whether they appraised the dissociative experience as helpful (i.e., facilitative) or hurtful (i.e., debilitating) to their ability to cope with the stressful event. A majority (95.4%) endorsed dissociative states during stress. More than half (57.4%) described dissociative experiences as spontaneous, 13.0% as deliberate, and 29.5% endorsed neither. In Special Forces soldiers only, those who endorsed facilitative dissociation exhibited higher total CADSS scores than those who endorsed debilitating dissociation. Seventy-three percent of spontaneous dissociators described the experience as debilitating to coping with stress; conversely, 76% of deliberate dissociators said these experiences facilitated coping with stress. Individuals with prior trauma exposure tended to appraise dissociative states as more debilitating to coping. This research may enhance the fidelity of studies of dissociation constructs and may offer pivot points for prevention and treatment of stress-related disorders.

Peritraumatic dissociation is a situationally bound disruption in integrated functions of consciousness, memory, identity, and/or perception of environment in response to extreme stress or trauma (American Psychiatric Association [APA], 1994; Eisen & Lynn, 2001). Many consider it a prognosticator of vulnerability to posttraumatic stress disorder (PTSD); it is deemed a critical element in defining traumatic stress (Bovin & Marx, 2011). Although numerous studies of healthy military personnel exposed to acute stress have provided evidence that dissocia-

tive states are quite common (Eid & Morgan, 2006; Morgan, Hazlett, et al., 2001; Morgan, Southwick, Hazlett, & Dial-Ward, 2008; Morgan et al., 2004; Taylor et al., 2011), these studies have also provided evidence that such states are associated with poorer military performance (Eid & Morgan, 2006; Morgan, Hazlett, et al., 2001; Morgan et al., 2004, 2008) as well as neurocognitive impairment (Morgan, Doran, Steffian, Hazlett, & Southwick, 2006), suggesting that such states are not entirely benign.

Notwithstanding these advances in current understanding of dissociation, a great deal remains to be learned about its nature and impact. For example, although dissociative states are generally presumed to occur spontaneously, it is at times the case that some individuals may deliberately attempt to induce dissociative states as a way to cope with intense stress. Indeed, the literature concerning coping strategies in victims of trauma and that of competitive athletes suggests that many individuals attempt to mentally disengage from their immediate physical environment to cope with stress (Gill & Strom, 1985; Pacella et al., 2011; Scott, Scott, Bedic, & Dowd, 1999). Additionally, it is known that prior trauma exposure is a risk factor for PTSD (Breslau, Chilcoat, Kessler, & Davis, 1999; Duncan, Saunders, Kilpatrick, Hanson, & Resnick, 1996), and also influences peritraumatic dissociative responses (Morgan, Hazlett et al., 2001), cognitive impairment (Morgan et al., 2006), and poststress health symptoms in healthy individuals (Dimoulas

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et al., 2007). Its relationship to style and usefulness of dissociative states, however, has never been examined.

The present study was designed to assess the presence of, and distinctions between, spontaneous and deliberate dissociative states in military personnel exposed to acute stress. In addition, it was our aim to explore whether dissociative states experienced in this context were appraised as facilitative (i.e., helpful) or debilitating (i.e., hurtful). Finally, we wished to determine whether an individual's history of prior exposure to trauma was related to style and usefulness of dissociative states. In concert with existing literature, we hypothesized that (a) most participants in survival school training would endorse dissociative states, and (b) the majority of participants would describe dissociative states as spontaneous and debilitating. Given the novelty of the research question, assessment of relationships of prior trauma exposure to style and usefulness of dissociative states was considered exploratory. We hoped that empirical evidence regarding the presence and prevalence of spontaneous–deliberate and facilitative–debilitating distinctions might lead to more rigorous conceptualizations and appreciation for specific taxonomies or subdimensions of dissociation (Holmes et al., 2005).

The structure and focus of military survival school training (also known as Survival, Evasion, Resistance, and Escape [SERE] training) has been described in great detail in our previous publications (Morgan et al., 2000, 2002, 2004, 2006, 2007, 2011; Morgan, Rasmusson, Pietrzak, Coric, & Southwick, 2009; Taylor et al., 2009, 2012). To assist the reader who is unfamiliar with this literature, a brief description will be provided here. Survival school training is U.S. Code of Conduct training and designed for U.S. military members who are deemed to be at high risk for capture due to their military work. The course consists of didactic and experiential phases. The didactic phase is classroom based: during this phase, students learn the U.S. Code of Conduct and basic survival skills. The experiential phase is one that permits students to put into practice what they have learned. In this phase, they have the opportunity to demonstrate their field survival skills after which they are placed in mock captivity where they are able to demonstrate their skills. As noted in our previous publications, the captivity phase of the training offers a unique and valid venue for scientific studies on the impact of highly realistic stress on human cognition and functioning. Recent studies confirm its validity as a sustained stressor, as evidenced by substantial alterations in both physiological and self-report indices (Morgan et al., 2000, 2004; Taylor et al., 2012).

Method

Participants

Participants were 335 healthy, male active-duty military members. All participants underwent medical and psychological screening by the SERE medical officer prior to enrollment in survival training. Examples of criteria for exclusion from

SERE training include endocrine, renal, cardiovascular, psychological, or musculoskeletal disorders. Participants who were deemed medically fit to undergo SERE training and were enrolled in the SERE course were thus considered eligible for the current study. Those who expressed an interest in participating attended an in-person meeting to review the details of the study and provide written informed consent. This protocol was approved by the Institutional Review Board of Yale University and VA Connecticut Healthcare System.

Measures

Dissociative states. During the mock-captivity phase of training (after the evasion exercise), participants were escorted to a secure area by the SERE staff directly after a standardized, stressful mock-captivity event. At this time, the 19 self-report items from the Clinician-Administered Dissociative States Scale (CADSS; Bremner et al., 1998) were used to assess the frequency and intensity of dissociative states with respect to the stressful mock-captivity event. Although the CADSS includes additional items used for clinical observation, the set of 19 self-report items is a valid, reliable, and independent indicator of dissociative states (Morgan et al., 2004; Taylor et al., 2009). This scale is designed to assess how perceptually connected or disconnected an individual is relative to his or her environment. Although some items measure one's sense of physical self (e.g., "Did you feel as if you were watching the situation as an observer or spectator?"), other items address cognitive or perceptual distortions (e.g., "Did you space out or in some way lose track of what is going on?"). The self-report items are rated on a Likert scale of 0 = *not at all* to 4 = *extremely*, with a maximum possible score of 76.

In this study, each participant was asked two additional questions. First, he was asked to indicate whether the reported experiences just happened (i.e., spontaneous), or whether he chose to have them happen (i.e., deliberate). This item was rank-ordered on a scale of $-2 = \textit{totally spontaneous; I made no conscious choice to have them}$ to $+2 = \textit{not spontaneous at all; I chose to have them}$. A score of zero corresponded to neither. Second, participants were asked to indicate the degree to which these experiences did or did not help him cope with the stress he was experiencing. This item was rank-ordered on a scale of $-2 = \textit{made it worse/did not help}$ to $+2 = \textit{helped a great deal}$. For this item, a score of zero corresponded to *didn't help but didn't make things worse*. Cronbach's α reliability for the original 19 CADSS items was .91.

Trauma history. The Brief Trauma Questionnaire (BTQ; Schnurr, Vieilhauer, Weathers, & Findler, 1999) assessed history of exposure to potentially traumatic events. The BTQ was administered to a subset of the total sample ($n = 228$); this subset did not differ from the remaining participants on age, years of military service, or Special Forces versus general soldier status (all *ns*). The questionnaire consists of 10 questions regarding exposure to types of trauma

(e.g., natural disasters, child physical abuse, sexual abuse, muggings, assaults). The BTQ is structured such that participants responding in the affirmative to one of the questions are then given the opportunity to respond to two additional questions: Did you fear for your life? Were you seriously injured physically? These additional prompts are designed to assess whether the potentially traumatic event may meet criteria as a traumatic event according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM-IV*; APA, 1994). Endorsement of “serious physical injury” and/or “fearing for one’s life” is interpreted as fulfilling *DSM-IV* criteria as a traumatic event. The BTQ indicates the total number and types of trauma exposure as well as whether the criteria for traumatic stress exposure have likely been met.

Data Analysis

Data were analyzed using SPSS software version 19. Characteristics of the distributions were examined to ensure assumptions of normality were met (Leech, Barrett, & Morgan, 2005). Descriptive analyses characterized the distribution of spontaneous and deliberate dissociative states, as well as whether dissociative states were appraised as facilitative or debilitating to stress coping. Participants were then grouped into spontaneous and deliberate dissociation groups, as well as facilitative versus debilitating groups for subsequent comparisons (individuals endorsing “neither” for each of these questions were logically excluded from corresponding analyses). Separate independent *t* tests compared spontaneous versus deliberate groups and facilitative versus debilitating groups on total CADSS scores. Next, a χ^2 analysis determined whether spontaneous and deliberate groups differed on perceived helpfulness (facilitative) or hurtfulness (debilitative) with respect to coping. Finally, Spearman’s rank correlation coefficients quantified relationships of trauma history to type (spontaneous vs. deliberate) as well as perceived helpfulness (facilitative vs. debilitating) of the dissociative experience. All hypothesis tests were two-sided and the probability of committing a Type I error was set at 0.05, although it was reported when more stringent probabilities were achieved ($p < .01$ or $p < .001$).

Results

Participant characteristics are shown in Table 1. The majority of participants (95.4%) endorsed dissociative states during military stress, and the mean CADSS score was 18.5 ($SD = 14.2$). Dissociation scores for Special Forces soldiers ($n = 138$, $M = 11.8$, $SD = 11.9$) were lower than general soldiers ($n = 191$, $M = 23.3$, $SD = 13.8$), $t(317) = -8.1$, $p < .001$.

Special Forces and general soldiers did not differ in their endorsement of spontaneous versus deliberate dissociation, $\chi^2(1, N = 232) = 0.04$, *ns*; therefore, these analyses were performed in the total sample. More than half of the participants (57.4%; $n = 189$) described the dissociative experience as spontaneous, 13.0% ($n = 43$) as deliberate, and 29.5% ($n = 97$) endorsed

Table 1
Subject Characteristics

Characteristic	<i>N</i>	%	<i>M</i>	<i>SD</i>
Age, years	335		25.0	6.0
Marital status				
Married	104	31.0		
Single	231	69.0		
Years of military service	335		5.2	5.0
Special Forces	138	41.3		
General soldiers	191	57.2		
Warzone experience	37	15.9		
Life-threatening accident	60	25.9		
Natural disaster	114	49.1		
Life-threatening illness	1	0.4		
Physical abuse as a child	41	17.7		
Mugging/sexual assault as an adult	70	30.6		
Sexual abuse as a child	17	7.4		
Other type of fearful event	59	17.5		
Family illness or death	49	21.3		
Witnessed threat or injury	83	36.2		
Experienced fear for life	102	43.8		
Experienced physical injury	44	18.9		
Traumas endorsed (total mean number)			1.8	1.8

neither. Spontaneous and deliberate dissociators did not differ on total CADSS scores, $t(230) = -1.6$, *ns*.

Nearly one third of the total sample (31.7%; $n = 104$) described the dissociative experience as facilitative to stress coping, more than one third (38.3%; $n = 126$) described it as debilitating, and 30.1% ($n = 99$) endorsed neither. Because fewer Special Forces soldiers (37 of 103; 36.0%) reported a facilitative impact of dissociative states compared with general soldiers (67 of 127; 52.8%), $\chi^2(1, N = 230) = 6.5$, $p = .011$, the subsequent comparison was performed separately for each group. Among Special Forces soldiers, those who endorsed facilitative dissociation exhibited higher total CADSS scores ($M = 14.8$, $SD = 14.3$) than those who endorsed debilitating dissociation ($M = 8.7$, $SD = 8.7$), $t(51.2) = -2.4$, $p = .023$. Among general soldiers, facilitative ($M = 23.9$, $SD = 13.1$) and debilitating dissociators ($M = 21.1$, $SD = 13.1$) did not differ with respect to total CADSS scores, $t(125) = -1.2$, *ns*.

As hypothesized, spontaneous and deliberate dissociators differed in how they perceived the impact of dissociative states. That is, the majority of spontaneous dissociators (101 of 139; 72.7%) described the dissociative experience as debilitating to coping with stress. The majority of deliberate dissociators (28 of 37; 75.7%) found it facilitative to stress coping, $\chi^2(1, N = 176) = 29.1$, $p < .001$.

No significant relationships were observed between trauma history reports and the type of dissociation (spontaneous vs. deliberate) endorsed by participants, $\rho(163) = -0.11$, *ns*. However, greater trauma history was associated with higher

likelihood of perceiving dissociative states as debilitating to coping with stress, $\rho(161) = -0.18, p = .025$.

Discussion

The majority of military personnel in this study endorsed experiencing dissociative states under stress, which is consistent with previous research showing that approximately 88%–96% of military personnel undergoing survival school training experience such states (Dimoulas et al., 2007; Morgan, Hazlett, et al., 2001; Taylor et al., 2011). Further, although more than half reported that their dissociative states were spontaneous, a noteworthy subset endorsed deliberate dissociative states. Spontaneous dissociators tended to report a debilitating impact on coping with stress, while deliberate dissociators tended to report facilitative coping.

To our knowledge, this is the first empirical evidence that many military personnel intentionally dissociate under stress. These findings may relate to current literature whereby distinctions have been drawn between pathological dissociation (characterized by disturbing symptoms of depersonalization, derealization, and identity confusion with long-term personal repercussions; Putnam, 1995) and nonpathological dissociation (characterized by a state in which attention is deeply absorbed or focused; Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005; and/or where there is loss of awareness). Nonpathological states have also been described as those in which there is degradation of monitoring of internal states and external activities (Eisen & Lynn, 2001). Some authors have suggested that pathological and nonpathological dissociation exist as opposite ends of a single continuum (Sandberg & Lynn, 1992), while others identify pathological and nonpathological dissociation as distinct types of dissociative tendencies. Pathological dissociation may be seen more as a trait, and nonpathological as a state phenomenon. Peritraumatic dissociation, however has generally been considered to be a state-like manifestation induced by exposure to an acute stressor (Bremner et al., 1998). Thus, it is somewhat similar to states described by sport scientists who have examined differences between so-called dissociative and associative cognitive strategies in athletes experiencing stress. In the sports framework, a dissociative strategy involves a focus on external cues to restrict sensory input, whereas an associative strategy involves a focus on the body's internal cues (Morgan & Pollock, 1977). Although some research suggests that associative strategies may be superior to dissociative strategies in certain performance situations (Masters & Ogles, 1998; Morgan & Pollock, 1977; Scott et al., 1999), evidence to the contrary has also been obtained (Gill & Strom, 1985). A plausible reconciliation of these seemingly disparate findings is that the effectiveness of deliberate dissociative strategies varies not only as a function of individual characteristics, but also of unique task demands.

In the current study, we did not contrast associative with dissociative cognitive strategies *per se*; however, it is reasonable

to speculate that the individuals who deliberately induced dissociative states under the stress of mock captivity may have employed a dissociative strategy. In previous research, we have found that individuals who dissociated under stress also exhibited a subsequent reduction in hypothalamic–pituitary–adrenal activation as measured by cortisol (Morgan, Wang, et al., 2001). Thus, it is possible that in some people dissociative states may be facilitative by reducing physiologic arousal and a disengagement from the stress. Future investigations exploring both neurohormonal responses to stress and specific types of dissociative strategies will be useful in testing this hypothesis. If deliberate dissociation is beneficial, it would be important to next explore whether it is a teachable skill and whether this approach may buffer or mitigate the long-term impact of acute stress exposure.

Although no relationships were observed between trauma history and the type of dissociation (spontaneous vs. deliberate), greater trauma history was associated with higher likelihood of perceiving dissociative experiences as debilitating to coping with stress. To our knowledge, prior trauma has not been examined in relation to style or usefulness of dissociative states. As discussed earlier, trauma exposure is a recognized risk factor for PTSD (Breslau et al., 1999; Duncan et al., 1996). Additionally, prior research on healthy military members in the survival training context suggests that prior trauma influences peritraumatic dissociative responses (Morgan, Hazlett, et al., 2001), cognitive impairment (Morgan et al., 2006) and post-stress health symptoms (Dimoulas et al., 2007). Therefore, the present findings may further our understanding of the influence of prior trauma upon peritraumatic dissociative responses, and thus may enhance the prevention and treatment of stress-related disorders.

Intuitively, it seems compelling to assume that deliberate dissociation may have protective characteristics while spontaneous dissociation may represent risk. It is tempting to assume that the deliberate dissociator is taking direct action when exposed to uncontrollable stress, thereby experiencing a greater sense of control than the individual who dissociates spontaneously. Although this may be subjectively reassuring to the individual, at present we do not know whether dissociation is in fact facilitative. Future studies using these distinctions when assessing dissociation in multiple military venues will be needed to help resolve the issue as to whether there is a demonstrable beneficial impact of dissociation.

In summary, this study was designed to explore distinctions between spontaneous and deliberate dissociative states in military personnel exposed to acute stress. Most spontaneous dissociators described the experience as debilitating to stress coping, while the majority of deliberate dissociators appraised the experience as facilitative (i.e., helpful) to stress coping. The spontaneous–deliberate and facilitative–debilitating distinctions may enhance the fidelity of studies of dissociation constructs and may offer pivot points for prevention and treatment of stress-related disorders.

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14. ABSTRACT
<p>Objective: This study was designed to explore distinctions between spontaneous and deliberate dissociative states in military personnel exposed to stressful survival training. Method: Three hundred thirty-four military members completed the Clinician-Administered Dissociative States Scale (CADSS) after a stressful mock-captivity event during survival training. They were also asked to indicate whether the dissociative experiences “just happened,” (i.e., spontaneous) or whether they “chose” to have them happen (i.e., deliberate); and whether they appraised the dissociative experience as helpful (i.e., facilitative) or hurtful (i.e., debilitating) to their ability to cope with the stressful event. Results: The majority of subjects (95.4%) endorsed dissociative symptoms during military stress. Fifty-six percent described dissociative experiences as spontaneous, 13.8% as deliberate, and 29.6% endorsed neither. Spontaneous and deliberate dissociators did not differ on military performance. Among Special Forces soldiers only, those who endorsed facilitative dissociation exhibited higher total CADSS scores than those who endorsed debilitating dissociation, but no differences in military performance were observed. Seventy-two percent of spontaneous dissociators described the experience as debilitating to coping with stress; conversely, 77% of deliberate dissociators said their symptoms facilitated coping with stress. Conclusion: The spontaneous-deliberate and facilitative-debilitating distinctions may enhance the fidelity of studies of dissociation constructs and may offer pivot points for prevention and treatment of stress-related disorders.</p>

15. SUBJECT TERMS dissociation, military, survival, stress
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