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Narrating life in the military: Links between veterans' narrative processing of service experiences and their posttraumatic stress symptoms and well-being

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Abstract

Military veterans frequently experience traumatic, highly stressful events; thus, it is especially important for them to find positive ways of making meaning from these experiences. The present study used the methods of narrative personality psychology to investigate the associations between veterans' narrative processing of highly stressful and significant events from their military service and postdischarge functioning, including posttraumatic stress symptoms (PTSS). United States military veterans ($N = 154$; M age = 64.28 years, 86.4% men, 57.8% deployed) completed an online survey in which they wrote narratives about one "highly stressful" and one "key scene" military service memory and completed questionnaires to assess PTSS, symptoms of depression and anxiety, functional impairment, and well-being. Narratives were coded for personal growth from the experience, themes of agency and interpersonal communion, affective tone, and coherence. In the highly stressful narratives, small-to-moderate negative associations emerged between both growth and agency and PTSS, depression and anxiety, and functional impairment; growth was also modestly positively associated with well-being. In contrast, affective tone and communion were each only associated modestly with one outcome, and coherence with none, and narrative processing of the key scene narrative was not linked with any mental health outcomes. These findings suggest that (1) the theory and methods of narrative identity research are relevant for studying trauma narratives, and (2) veterans who narrate themselves as growing from and exerting control over their most stressful service experiences may achieve better mental health and day-to-day functioning.

Military veterans are more likely than civilians to have experienced traumatic events (Morgan et al., 2017), and, for some veterans, these experiences may lead to symptoms of posttraumatic stress disorder (PTSD). One potentially important factor that affects whether veterans go on to develop PTSD may be the narratives that they develop about their most stressful and significant experiences from their time in the military. Over the past 25 years, researchers have investigated what features of trauma narratives are associated with PTSD (Crespo & Fernández-Lansac, 2016; O'Kearney & Perrott, 2006); unfortunately, previous studies have yielded largely inconclusive findings, in part because of the inconsistencies in the measurement of narrative features across studies.

Over that same timeframe, a separate body of literature has emerged—largely in the personality domain—examining individual differences in the processing of life narratives (Adler & Clark, 2019; McAdams & McLean, 2013); this literature has established some of the key dimensions that characterize narrative processing and has demonstrated that individual differences in narrative processing have important implications for mental health and well-being (Adler et al., 2016). The goal of the present study was to apply the theories and methods from this narrative research tradition to the study of posttraumatic stress symptoms (PTSS) in military veterans. We investigated whether veterans' PTSS, depression and anxiety, functional impairment, and well-being were associated with their narrative processing of their most stressful and significant military experiences. The application of the narrative research tradition to the study of veterans' life narratives may shed new light on which narratives about traumatic and stressful experiences promote one's risk of or resilience to PTSD.

Narrative processing and its potential relevance to PTSD

Individuals suffering from PTSD recall their traumatic experiences in a manner that is intrusive and distressing and that may lead to avoidance and negative ways of interpreting the world (American Psychiatric Association [APA], 2013). Cognitive models of PTSD suggest that disturbances in trauma memories may create and maintain PTSD symptoms. According to these models, if the anxiety one experiences during a traumatic event causes their memories of the events to become disorganized, dominated by sensory material, and poorly integrated with other memories in their life, the individual will be more likely to suffer from PTSD (Brewin et al., 1996; Foa et al., 1995). These cognitive models have been tested by investigating whether various features of trauma narratives are associated with PTSD. Two important reviews have summarized the results of these studies: O'Kearney and Perrott (2006) examined studies from 1995 to 2004, and Crespo and Fernández-Lansac (2016) reviewed studies published since 2004. In both reviews, the authors concluded that trauma narratives are dominated by sensory, perceptual, and emotional material; however, the findings for other proposed narrative features, such as fragmentation and disorganization and references to the self, were less consistent, in part because of inconsistencies in the methods used across studies.

The narrative tradition in the personality literature offers a different but complementary perspective on the possible role of disturbed narratives in PTSD. In this tradition, differences in the way individuals reflect on and draw meaning from their most important memories is a core aspect of their personalities. Adolescents and adults craft their individual sense of identity through the development of a narrative—a life story—that integrates their past experiences with their present selves and imagined futures (McAdams & McLean, 2013). The interpretation and integration process involved in weaving these life events together is known as narrative processing. Life narratives are considered an important element of personality that is distinct from personality traits; indeed, individual differences in narrative processing add incrementally to the prediction of mental health and well-being beyond personality traits (Adler et al., 2016).

Individuals vary widely in the ways they narrate the key stories of their lives, and their life narratives differ along several dimensions (McLean et al., 2020). First, narratives vary in autobiographical reasoning, or the extent to which narrators explore, reflect upon, and make meaning out of experiences. Second, narratives vary regarding the motivational and affective themes on which the narrators focus. For example, narratives vary in how much narrators express striving for agency—or mastery over their lives—and communion—or close connections with others. Third, narratives vary in their structure, meaning the extent to which narrators present a coherent story in terms of context, time, and facts.

Similar to the cognitive models of PTSD, narrative personality models point to the possibility that PTSD may involve a fundamental breakdown in aspects of narrative identity (McAdams, 2020) because PTSD is tied to the problematic processing of memories. Narrative processing of negative and stressful experiences is particularly important for well-being (Pals, 2006). When individuals face negative, disruptive, and highly stressful life events, their narratives may be particularly threatened. Narrative processing of memories of these negative events is important in coping with and recovering from these memories (Pals, 2006). Consistent with these ideas, PTSD symptom severity is associated with the centrality of traumatic memories to the person's identity (Wamser-Nanney, 2019). PTSD may result from disturbed self-processes such that individuals who have a long history of experiencing multiple threats and losses may develop PTSD when they are unable to integrate their traumatic experiences into an overarching healthy sense of self (Hobfoll et al., 2020).

In the present study, we focused on five variables representing the three different narrative dimensions from the narrative identity tradition and their associations with PTSS: (a) narrative growth, which largely reflects autobiographical reasoning; three key motivational or affective themes of (b) agency, (c) communion, and (d) affective tone; and (e) coherence, the structure of the narrative.

Table 1 presents two sample narratives from the present study and the relevant participant scores on these dimensions. We now describe each of these narrative dimensions in turn and review research suggesting their possible relevance for PTSS and well-being in veterans.

Narrative processing variables and PTSD

Narrative growth

There is a general misconception that happy people are a "well-defended fortress, invulnerable to the vicissitudes of life" (King, 2001, p. 509). This is not the case: All lives contain hardships, regrets, and negative events that must be processed. However, many individuals remain resilient and happy in the face of such events. A narrative processing dimension that is particularly important for effective coping with negative experiences is the dimension of growth (Adler et al., 2016). Growth refers to the extent to which individuals tell their life stories with regard to positive changes they experienced as a result of past life events, including the development of new self-insights, positive goals, or life lessons. Narrative growth largely reflects individual differences in autobiographical reasoning (i.e., the ways that people think about and make meaning out of their experiences), but it also contains affective elements because it reflects differences in how positively individuals interpret the significance of past experiences (McLean et al., 2020).

Narrative growth is associated with numerous positive outcomes, including subjective well-being and ego development (Adler et al., 2016). Narrative growth has also been linked with sobriety maintenance in recovering alcoholics (Dunlop & Tracy, 2013); in a sample of recovering alcoholics, narratives that were positive but stability-oriented rather than growth-oriented were associated with negative recovery outcomes. Similarly, in a sample of therapy clients, narrative features closely related to growth were predictive of sudden gains in mental health (Adler et al., 2013), and, in a community sample, trauma narratives that were focused on growth were associated with a stronger sense of trauma resolution and higher levels of well-being (Mansfield et al., 2010).

Narrative communion

Narrators vary in the extent to which they focus on particular motivational themes when they tell the stories of their lives. The two most important motivational themes studied in the narrative research tradition are agency and communion. Agency reflects the extent to which narrators

can affect their lives by developing a sense of initiative, mastery, or control over their life experiences (McLean et al., 2020). Narratives that convey communion describe the connection, intimacy, love, belonging, union, friendship, and/or caring of the narrator (McLean et al., 2020). Multiple studies have demonstrated that narratives characterized by higher levels of narrative agency and communion are associated with higher levels of mental health and well-being (Adler et al., 2016). For example, in a sample of late-midlife adults who had been diagnosed with a serious physical illness, both narrative themes predicted participants' mental health trajectories (Adler et al., 2015). However, the evidence for the positive benefits of higher narrative agency is more robust and consistent than that for communion, particularly among individuals who have faced challenging life events (Adler et al., 2016). In addition, the theme of agency may be more relevant for veterans' narratives about traumatic experiences than the theme of communion. Military personnel often encounter traumatic circumstances that are difficult for them to master, predict, or control (Morgan et al., 2017); variations in how veterans narrate those experiences with respect to their agentic control may shape their current mental health. In contrast, veterans' most stressful previous experiences in the military may not always involve intimate or close connections with others, and, therefore, variations in narrative communion in describing those events may not be as important for mental health.

Another narrative dimension that is often correlated with the themes of agency and communion is the overall affective tone of the narrative (McLean et al., 2020). The overall affective tone of narratives ranges from highly negative to mixed (i.e., both negative and positive) to highly positive. Interestingly, overall affective tone is typically only modestly related or unrelated to well-being; rather, changes in affective tone within narratives, from positive to negative or negative to positive, are more predictive of well-being (Adler et al., 2016). Although we did not expect affective tone to be correlated with the mental health indicators in the present study, we assessed this dimension to make sure that the overall affective tone of the narratives could not account for the findings related to other narrative dimensions and the outcome measures.

Narrative coherence

A coherent narrative is understandable for someone who has not yet heard or read about the event; this dimension reflects the underlying structure of a narrative (McLean et al., 2020). In a widely used system for assessing coherence in narratives (Reese et al., 2011), coherence has three underlying components: (a) clear indications of time and

TABLE 1 Sample veterans' narratives and their coding on narrative processing variables

Sample narrative	Growth score (0–3)	Agency score (0–3)	Communion score (0–3)	Affective tone score (0–4)	Coherence score (3–9)
Highly stressful scene					
In the summer of 1978, we were making a 3-month "shakedown" cruise in the Caribbean…it was the first flight that morning, so it was somewhere around 7 a.m. As the pilots ran up the engine, we heard something odd. Suddenly we heard a high-pitched scream from one of the engines. Almost immediately, I saw the helicopter lurch violently and watched the helicopter begin to come apart. I was absolutely terrified, but I sprinted to the helicopter and pulled one of the pilots from the cockpit before running with him to take cover. After only a few seconds, the blades released and hit the crew boat, the viewing tower, the hanger and ordinance locker, the missile launcher. I looked myself and the pilot over, then quickly ran to the flight deck to start helping the sailors who were not able to take cover in time. No one was killed, but a few were hit and hurt by fragments… I helped pull injured sailors to a safer location on the ship so their wounds could be treated. I think I chose this experience because it reminds me how slender the thread of life is and how suddenly life can be ended… I have had numerous brushes with death, and it reminds me to live life daily. Enjoy the simple things. Don't be so hung up on and sweat the small things. It has helped me keep a positive mental attitude about life. I know I can get thru [expletive] because I've already lived thru this.	3	3	2	2	9
Key scene					
While I was stationed, I was fortunate enough to see the Bob Hope Christmas show on the base. The joy and comfort and memories of home that this unselfish entertainer and his troupe provided for the troops on Christmas was unmeasureable [sic]. The feeling of togetherness with my fellow service members was immense during the show. It really brought us together. It is easy to understand why he was one of the most beloved entertainers in history because of his unflagging loyalty to the boys and girls in uniform.	1	1	3	4	5

place of the event (i.e., context), (b) clear temporal ordering of happenings within the event (i.e., chronology), and (c) focus and elaboration on a single topic and attempt at drawing meaning from the event (i.e., theme). For the present study, we chose to use this model of coherence because of its similarities with existing models of coherence in the literature on trauma narratives in PTSD. Narrative structure is less consistently linked with well-being than are growth and communion (Adler et al., 2016; McLean et al., 2020). However, we wanted to examine possible associations between narrative coherence and PTSS and well-being for two key reasons. First, although coherence is less often associated with well-being, previous studies have demonstrated lower narrative coherence in clinical samples, such as individuals with schizophrenia or borderline personality disorder (Adler et al., 2016). Second, as noted previously, the traditional cognitive model of PTSD suggests that trauma memories that are less coherent should be associated with more severe PTSD, but findings regarding this claim have been inconsistent (Crespo & Fernández-Lansac, 2016; O'Kearney & Perrott, 2006).

Present study

As we have argued, PTSD may reflect a breakdown in an individual's ability to integrate traumatic experiences into their sense of identity, and this breakdown may occur, in part, because they cannot create positive meanings out of their experiences or describe those experiences in a coherent manner. Thus, we examined the links between military veterans' narrative processing of highly stressful and important memories from their military service and their PTSS, depression and anxiety, and well-being. Very few previous studies of trauma narratives have included samples of military veterans (Crespo & Fernández-Lansac, 2016; O'Kearney & Perrott, 2006); thus, the present research adds to the limited literature on narratives in this population.

In this online study, United States military veterans wrote narratives about two experiences from their time in the military: one "highly stressful" service event and one "key scene" service event. We chose these two narrative prompts to evaluate the ways in which the veterans processed both a highly negative event and an event they saw as important. By collecting narratives about veterans' key memories in addition to their most stressful memories, we were able to examine whether the correlates of narrative processing varied across the two narratives. The narratives were coded for levels of growth, agency, communion, affective tone, and coherence. Participants completed questionnaire measures of PTSS, anxiety and depressive symptoms, functional impairment, and subjective well-being.

Although our primary interest was in PTSS, we chose to include other indicators of mental health and well-being because PTSD in military veterans is often associated with other negative outcomes. Indeed, it is common for both depression and anxiety to be comorbid with PTSD in veterans (Ginzburg et al., 2010). Functional impairment is high among U.S. military veterans more generally—these individuals often struggle with readjustment after returning home from service (Disner et al., 2017). As noted previously, PTSD is often associated with lower ratings of well-being as well.

We predicted that growth and agency in the veterans' narratives about highly stressful events would be negatively associated with PTSS, depression and anxiety, and functional impairment and positively associated with well-being, given the existing literature showing consistent links between these two narrative dimensions and mental health, especially for narratives about challenging experiences. We did not expect affective tone to be related to the outcome measures. We examined the associations between both communion and coherence and the outcome measures as well, but we did not have clear predictions for these dimensions given the less robust literature linking communion with mental health and the inconsistent literature on coherence and mental health. Finally, we expected any links between the narrative dimensions and the outcome variables to be stronger in the narratives about highly stressful events than in the narratives about key scenes.

METHOD

Participants and procedure

United States military veterans ($N = 187$) were recruited via an anonymous online survey distributed by Qualtrics Panel (Provo, UT) to panels of individuals 18 years of age and older who had served in the U.S. military. At the beginning of the survey, respondents were asked whether they had served in the U.S. military, and those who selected "I have not served in the U.S. military" were excluded from further participation. We excluded 33 participants who did not write any narratives or did not write at least one narrative that described a particular event or experience. Included and excluded participants differed on two demographic and military status variables: Compared to excluded participants, included participants were more often White (88.3% vs. 63.3%), $\chi^2(5, N = 187) = 24.06$, $p < .001$, and older ($M = 64.28$ years vs. 57.76 years), $F(1, 186) = 6.70$, $p = .010$. All other comparisons on demographic or military status variables were nonsignificant, ps = .364−.819.

A total of 154 participants wrote at least one useable narrative and were included in the final sample (M age = 64.28

years, $SD = 12.65$, range: 22−87; 86.4% men, 13.6% women). Most participants were White (88.3%), followed by African American (3.2%) and White Hispanic (2.6%); 2.6% of participants selected "other," and 3.2% selected "prefer not to answer." For military service branch, Army (38.3%) was the most common, followed by Air Force (28.6%), Navy (18.8%), Marines (9.1%), Coast Guard (2.6%), and "other" (2.6%). Just over half (57.8%) of the participants had been deployed, whereas 44.2% had not. For participants' highest rank attained, 12.3% of the veterans were nonofficers, 66.9% were noncommissioned officers (NCOs), and 18.2% were officers; data for this variable were missing for 2.6% of the sample. Among participants who had been deployed, the total time deployed ranged from 4 months to 144 months ($M = 22.40$ months, $SD = 21.37$).

During the online survey administration process, participants first completed an informed consent clarifying that the study was examining their life narratives from military service and their current functioning; participants gave consent for both Qualtrics and local institution procedures. After completing background questions about their military service, participants were asked to write two narratives about their time in the military (see Measures) and then completed four questionnaire measures. Participants were compensated for their participation with points that could be redeemed for various products. The study was approved by the Colgate University Institutional Review Board (IRB FR-F17-05).

Measures

PTSS

We assessed PTSS, based on the PTSD criteria outlined in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5;* APA, 2013), using the 20-item PTSD Checklist for *DSM-5* (PCL-5; Weathers et al., 2013), a reliable, well-validated, and widely used self-report measure. Because we were not permitted by the IRB to ask participants to name a specific traumatic experience for completion, we used the standard introduction, "Below is a list of problems that people sometimes have in response to a very stressful experience." Items on the PCL-5 address four *DSM-5* symptom clusters: reexperiencing of the stressful experience; avoidance of memories, thoughts, or feelings related to the stressful experience; negative alterations in cognitions and mood; and alterations in arousal and reactivity. Participants rated how much they were bothered by each symptom, scoring their responses on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). The measure was scored by summing all 20 items (possible range: 0−80). Only 16.9% of participants scored 33 or above, which has

been established as a cutoff score for probable PTSD (Bovin et al., 2016). In the current sample, Cronbach's alpha was .98.

Depression and anxiety

The Hopkins Symptom Checklist-10 (HSCL-10; Derogatis et al., 1974; Schmalbach et al., 2021) is a 10-item, well-validated self-report measure of depression (six items; e.g., "feeling blue") and anxiety (four items; e.g., "feeling tense or keyed up"). Participants rated how much they were bothered or distressed by the symptoms over the last week on a 4-point scale ranging from 1 (*not at all*) to 4 (*extremely*). Total scores were computed by summing participant ratings on all 10 items (possible range: 10−40). In the present sample, Cronbach's alpha was .95.

Functional impairment

The World Health Organization (WHO) Disability Assessment Schedule 2.0 (WHODAS 2.0; Üstün & WHO, 2010) is a 12-item measure of functional impairment. The measure includes two items each for six domains: cognition, mobility, self-care, getting along with others, life activities, and participation in the community. For each item, participants were asked to rate how much related difficulty they experienced in their daily life over the past 30 days, scoring responses on a 5-point scale ranging from 1 (*none*) to 5 (*extreme or cannot do*). Scores were calculated as the sum of all 12 items (possible range: 12−60). In the present sample, Cronbach's alpha was .93.

Well-being

The Ryff Psychological Well-being Scale (Ryff, 1989) is one of the most frequently used multidimensional assessments of psychological well-being. The scale consists of four subscales, each of which contains three items: Personal Growth, Purpose in Life, Self-Acceptance, and Positive Relations with Others. Participants were asked to score items on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). An overarching well-being score was created by summing all 12 items (possible range: 12−84). In the present sample, Cronbach's alpha was .93.

Narrative processing

Participants were asked to write two narratives about their military service: one about a highly stressful event and one

about a key scene. We were not permitted by the IRB to ask for a narrative specifically about a traumatic event; thus, we asked for a narrative about a highly stressful event instead. Both narrative prompts were adapted from those used by Mansfield et al. (2010) and followed a common format for written narratives (Adler et al., 2017). The highly stressful narrative prompt began like this:

> In looking back at your military service, it is often possible to identify certain highly stressful memories. Thinking back over your military service, please describe a moment that stands out as highly stressful. This does not have to be the most stressful experience of your deployment or military service, but merely an event that stands out for a particular reason, perhaps because it was particularly vivid, important, or memorable. If you were ever deployed, this experience should be from some time during your deployment. If you were never deployed, this memory should be from your time in the military.

Participants were asked to describe what happened, where and when the event took place, who was involved, what they were thinking and feeling, why the experience was stressful, and what the experience meant for them as a person. The key scene narrative prompt was parallel, except it asked participants to "describe a scene from your time in the military that shaped you in an especially significant way. Please tell us something about your military experience that shaped who you have become today."

Participants were included in the study if they wrote at least one codable narrative, meaning a narrative describing a single event. Of the 154 participants included in the main study, 114 wrote both narratives (74%), 28 wrote only the highly stressful event narrative (18.2%), and 12 wrote only the key scene narrative (7.8%). We ran a series of tests comparing demographic and military characteristics of participants with highly stressful narratives ($n = 142$) with those without ($n = 12$); individuals who provided highly stressful event narratives had more often been deployed (60.6%) than those without a highly stressful event narrative (16.3%) but otherwise did not differ. Most likely, participants who had been deployed were more easily able to remember a highly stressful experience than those who had not been deployed. We ran a parallel set of tests to compare participants who provided a key scene narrative ($n = 126$) with those who did not ($n = 28$), and the two groups did not differ on any demographic or military experience variables.

Following data collection, two researchers (i.e., the first author and either the third author or a research assistant)

coded both narratives on five dimensions—growth, agency, communion, affective tone, and coherence. Coders also assessed in a "yes" or "no" fashion whether the event met *DSM-5* Criterion A (i.e., direct or indirect exposure to actual or threatened death, serious injury, or sexual violence) for PTSD (APA, 2013). The coders initially met to review the coding manuals and practice using the manuals to code a subset of narratives. The coders then coded the remaining narratives independently, checking in regularly, after approximately 50 narratives, to discuss divergent codes and ensure reliability for the subsequent codes. Table 1 presents sample highly stressful event and key scene narratives that are composites of several narratives to illustrate the coding dimensions. Intraclass correlation coefficients (ICCs) for the scores across pairs of coders for each dimension indicated excellent interrater reliability, growth: ICC = .90 highly stressful, ICC = .93 key scene; agency: ICC = .97 highly stressful, ICC = .96 key scene; communion: ICC = .91 highly stressful, ICC = .94 key scene; affective tone: ICC = .96 highly stressful, ICC = .98 key scene; coherence: ICC = .94 highly stressful, ICC = .96 key scene; *DSM-5* PTSD Criterion A: ICC = .96 highly stressful, ICC = .92 key scene. Final scores for each coded narrative dimension were calculated by obtaining the mean score across the two coders.

Growth. Growth is the extent to which narrators described positive changes in themselves or their lives because of their experience. The manual was adapted from Mansfield et al. (2010) as well as from a widely used system for coding growth (McLean et al., 2020). Growth involved changes in positive self-insight and awareness, active and intentional self-enhancement or development, positive new goals, or learning a positive lesson. Growth was coded on a 4 point-scale (range: 0−3), wherein 0 indicated negative growth (i.e., the narrator became worse in some way), 1 indicated the absence of growth (i.e., the narrator did not describe any significant change for worse or better), 2 indicated moderate growth (i.e., the narrator hinted at personal growth but did so in a vague and unspecific manner), and 3 indicated a high level of growth (i.e., the narrator clearly stated one of the possible forms of growth).

Agency. Agency reflects how much narrators can affect their lives by developing a sense of initiative, mastery, or control. Coding was adapted from a widely used manual (McLean et al., 2020). Agency was coded on a 4-point scale ranging from 0 to 3, with 0 representing low agency (i.e., the narrator was at the mercy of external circumstances), 1 representing the absence of or mixed agency (i.e., the narrator did not offer material relevant to agency or described both agentic and nonagentic experiences), 2 representing moderate agency (i.e., the narrator was minimally at the mercy of external circumstances and was largely in

control of the plot), and 3 representing high agency (i.e., the narrator was able to affect his or her life, initiate changes, and exert significant control).

Communion. Communion reflects the theme of "connection, intimacy, love, belonging, union, friendship, and caring of the protagonist" (McLean et al., 2020, p. 9). Coding of communion was adapted from a widely used manual (McLean et al., 2020). Communion was coded on a 4 point-scale (range: 0−3), with 0 indicating negative communion (i.e., the narrator conveyed disconnection or poor relationships), 1 indicating the absence of communion material (i.e., the narrator did not offer any material relevant to communion), 2 indicating moderate communion (i.e., the narrator addressed communion but did so in a vague and unspecific manner or indicated that relationship desires went unfulfilled), and 3 indicating high communion (i.e., the narrator clearly conveyed one of the possible forms of communion and indicated communion fulfillment).

Coherence. Coherence refers to the extent to which a narrator included enough contextual and chronological details and an overarching theme for the story to be clear or "make sense" to a naïve reader. The coherence manual was adapted from both Reese et al. (2011) and Waters and Fivush (2014). Total coherence comprised of three components, each coded on a 3-point scale ranging from 1 to 3. Included components were context (i.e., clarity about the time and place of the event), chronology (i.e., clarity about the temporal ordering of events), and theme (i.e., focus on a single topic, elaboration on that topic, and attempt at drawing meaning from the event). The total coherence score was created by summing the three component scores (range: 3−9).

Affective tone. Affective tone reflects the overall emotional tone of the narrative; we used a commonly used coding scheme for this dimension (McLean et al., 2020). Affective tone was coded on a 5-point scale (range: 0−4), with 0 indicating the affective tone was very negative or pessimistic, 1 indicating the tone was negative or somewhat negative, 2 indicating a lack of emotion or a neutral tone, 3 representing a positive or somewhat positive tone, and 4 indicating a very positive or optimistic affective tone.

Data analysis

We conducted analyses using all available narratives for each analysis ($N = 142$ for highly stressful event narratives, $N = 126$ for key scene narratives) and all available self-report questionnaire measures; one participant did not complete the Ryff Psychological Well-Being Scale. There were no missing data in the questionnaires aside from two items; we imputed the mean of the other items for those. We examined the associations between the five narrative

processing dimensions in the veterans' two narratives and a set of mental health and well-being indicators: PTSD symptoms, depression and anxiety, functional impairment, and well-being. We conducted all analyses in SPSS (Version 27). First, we used correlations to determine whether the coded dimensions were consistent across the two narratives, and we used paired within-subjects t tests to determine whether the two narratives exhibited mean differences in the levels of the narrative processing dimensions. Second, we examined the correlations between the five coded narrative dimensions and the four mental health and well-being variables.

RESULTS

Descriptive statistics for the two narratives

Tables 2 and 3 present the descriptive statistics for the five narrative processing dimensions (i.e., growth, agency, communion, affective tone, and coherence) and the four mental health and well-being indicators. We obtained the word count for the narratives: For the highly stressful narratives, participants used an average of 151.63 words ($SD = 154.32$, range: 16−786), and key scene narratives included an average of 130.33 words ($SD = 135.31$, range: 17−721). We also examined whether the narratives described traumatic experiences that met *DSM-5* PTSD Criterion A. There were six participants whose key scene narrative met Criterion A but whose highly stressful narrative did not, and one participant whose key scene narrative met Criterion A but who did not write a highly stressful narrative; for these participants, we used the key scene narrative as the highly stressful narrative given our interest in studying traumatic experiences in the highly stressful narratives. After making these changes, 54.9% of the highly stressful narratives met Criterion A and 45.1% did not, whereas only 10.3% of the key scene narratives met Criterion A and 89.7% did not. Thus, a little over half of the highly stressful narratives described experiences that involved direct or indirect exposure to actual or threatened death, serious injury, or sexual violence.

Associations between narrative dimensions in the highly stressful and key scene narratives

Before turning to the main study analyses, we examined correlations among the coded dimensions across the two narratives. Across the two narratives, levels of coherence were highly consistent, $r = .66$, $p < .001$, and levels of communion were modestly related, $r = .22$, $p = .019$. Growth,

TABLE 2 Descriptive statistics and correlations for narrative processing in the highly stressful narrative, mental health, and well-being variables

Variable	1	2	3	4	5	6	7	8	9	n	M	SD
1. HS growth	–	.40***	.23**	.42***	.18*	−.37***	−.32***	−.27**	.26**	142	1.01	0.58
2. HS agency		–	.40***	.52***	.24**	−.23**	−.20*	−.24**	.14	142	1.11	0.86
3. HS communion			–	.48***	.19*	−.13	.00	−.05	.02	142	1.06	0.78
4. HS affective tone				–	.01	−.24**	−.16	−.06	.02	142	1.36	0.95
5. HS coherence					–	.01	−.04	−.02	−.01	142	5.67	1.37
6. PTSD (PCL-5)						–	.86***	.65***	−.52***	154	13.84	18.89
7. Depression/anxiety (HSCL)							–	.68***	−.61***	154	14.74	6.51
8. Impairment (WHODAS)								–	−.54***	154	18.90	8.52
9. Well-being (RYFF)									–	153	64.99	12.21

Note: HS = highly stressful event narrative; PTSD = posttraumatic stress disorder; PCL-5 = PTSD Checklist for *DSM-5*; HSCL = Hopkins Symptoms Checklist; WHODAS = WHODAS 2.0 Disability Measure; RYFF = Ryff Psychological Well-Being Scale.
*p < .05, **p < .01, ***p< .001.

TABLE 3 Descriptive statistics and correlations for narrative processing in the key scene narrative, mental health, and well-being variables

Variable	1	2	3	4	5	6	7	8	9	n	M	SD
1. KS growth	–	.59***	.31***	.37***	.48***	−.16	−.09	−.09	.05	126	1.57	0.84
2. KS agency		–	.32***	.49***	.29**	−.03	−.02	.00	.02	126	1.64	0.91
3. KS communion			–	.49***	.20*	−.02	−.04	.04	.18*	126	1.61	0.99
4. KS affective tone				–	.02	−.08	−.11	−.03	.11	126	2.39	1.08
5. KS coherence					–	−.07	−.10	−.01	.05	126	5.43	1.61
6. PTSD (PCL-5)						–	.86***	.65***	−.52***	154	13.84	18.89
7. Depression/anxiety (HSCL)							–	.68***	−.61***	154	14.74	6.51
8. Impairment (WHODAS)								–	−.54***	154	18.90	8.52
9. Well-being (RYFF)									–	153	64.99	12.21

Note: KS = key scene narrative; PTSD = posttraumatic stress disorder; PCL-5 = PTSD Checklist for *DSM-5*; HSCL = Hopkins Symptoms Checklist; WHODAS = WHODAS 2.0 Disability Measure; RYFF = Ryff Psychological Well-Being Scale.
*p < .05, **p < .01, ***p < .001.

$r = .11$, $p = .155$; agency, $r = .13$, $p = .175$; and affective tone, $r = .00$, $p = .987$, were not significantly related across the two narratives. These results suggest that it would not be surprising if the mental health and well-being correlates of most of the narrative processing dimensions differed across the two narratives as well.

Second, we conducted five within-subjects t tests to compare the average scores on the narrative dimensions across the two narratives for participants who completed both. We found that the two narratives showed mean-level differences for every narrative dimension. Key scene narratives expressed higher levels of growth (key scene: $M = 1.57$, $SD = 0.84$, highly stressful: $M = 1.01$, $SD = 0.58$), $t(113) = 6.10$, $p < .001$; agency (key scene: $M = 1.64$, $SD = 0.91$, highly stressful: $M = 1.11$, $SD = 0.86$), $t(113) = 4.86$, $p < .001$; and communion (key scene: $M = 1.61$, $SD = 0.99$, highly stressful: $M = 1.06$, $SD = 0.78$),

$t(113) = 5.31$, $p < .001$); and more positive affective tone (key scene: $M = 2.39$, $SD = 1.08$, highly stressful: $M = 1.36$, $SD = 0.95$), $t(113) = 7.67$, $p < .001$. However, highly stressful narratives were more coherent (highly stressful: $M = 5.67$, $SD = 1.37$, key scene: $M = 5.43$, $SD = 1.61$), $t(113) = 2.05$, $p = .043$. Thus, on average, the key scene narratives displayed higher degrees of growth, agency, and communion, as well as a more positive affective tone, but demonstrated lower coherence than the highly stressful narratives.

Associations between narrative processing and mental health and well-being

Turning to our main study analyses, we probed the associations between the five narrative processing

dimensions and the mental health and well-being variables by obtaining correlation coefficients between the two sets of variables; see Table 2 for the highly stressful narrative correlations and Table 3 for the key scene narrative correlations. First, for growth in the highly stressful narratives, consistent with predictions, we found moderate negative correlations between narrative growth and PTSS, $r = -.37$, $p < .001$; depression and anxiety, $r = -.32$, $p < .001$; and functional impairment, $r = -.27$, $p = .001$, and a modest positive correlation with well-being, $r = .26$, $p = .002$. In contrast, growth in the key scene narrative was not related to any of the outcome measures, ps = .082−.573.

Second, for agency, we obtained a similar pattern of findings. Agency in the highly stressful narratives was modestly negatively correlated with PTSS, $r = -.23$, $p = .005$; depression and anxiety, $r = -.20$, $p = .018$; and functional impairment, $r = -.24$, $p = .004$; although it was not associated with well-being, $r = .14$, $p = .109$. Agency in the key scene narratives was not associated with any of the mental health or well-being measures, ps = .710−.979.

Third, communion in the highly stressful narratives was not related to any of the mental health or well-being indicators, ps = .111−.996. In the key scene narratives, communion was significantly related to well-being, $r = .18$, $p = .045$, but it was not related to any of the other outcome measures, all other ps = .664−.812 Thus, narrative communion did not show the same broad associations with the mental health indicators that growth and agency did; rather, it had a narrower association only with well-being and only in the key scene narratives.

Fourth, the overall affective tone of the highly stressful narrative was modestly correlated with PTSS, $r = -.24$, $p = .004$, but affective tone in the two narratives was not otherwise associated with any other outcome variables, ps = .057−.780 for highly stressful nrratives; ps = .228−.750 for key scene narratives. These findings were largely consistent with our prediction that overall affective tone would not be associated with the mental health and well-being variables.

Fifth, we examined the correlations between narrative coherence and the mental health and well-being indicators; these analyses were exploratory given previous contradictory results on narrative coherence and well-being. Coherence for both the highly stressful and key scene narratives was not significantly correlated with any of the outcome measures, highly stressful narratives: ps = .664−.931, key scene narratives, ps = .259−.898. We examined the correlations between the three components of coherence (i.e., context, chronology, theme) and the outcome variables, and none of these correlations were significant either, all ps = .128−.925.

DISCUSSION

In this sample of United States military veterans, we examined written narratives about a highly stressful experience and a key scene from their time in the military and investigated the associations between dimensions coded from those narratives and the veterans' PTSS, depression and anxiety symptoms, functional impairment, and well-being. Our methods were unusual in two ways: Few studies of trauma narratives have included samples of veterans, and, thus far, no studies of which we are aware have used the models and methods of narrative personality psychology. The findings indicate that, for veterans' narratives about their highly stressful and often traumatic military experiences, growth and agency are particularly robust predictors of postdischarge functioning.

Our most noteworthy finding was that growth and agency conveyed in the veterans' narratives about their most stressful military service experiences were modestly to moderately negatively associated with PTSS, depression and anxiety symptoms, and functional impairment; growth was also positively associated with well-being. These findings demonstrate the importance for veterans of reflecting on distressing events in productive ways that highlight avenues for self-growth as well as for mastery, control, and initiative. Narratives characterized by high levels of growth and agency may serve as a protective force against common maladaptive behaviors associated with PTSS, such as ruminating about how the event could have gone differently; avoiding thoughts of the event entirely; or developing negative views about the self, others, or the world. The first veteran narrative in Table 1 demonstrates how a distressing situation can be interpreted as kindling for growth and a means of achieving agency. After acknowledging the stress and negativity of the memory, the narrator finds several pathways for positive transformation from the event, noting, "I think I chose this experience because it reminds me how slender the thread of life is and how suddenly life can be ended… I have had numerous brushes with death and it reminds me to live life daily."

It is notable that participants expressed higher levels of growth and agency in their narratives about key scenes than in their narratives about highly stressful experiences; it may be easier to experience and see growth and agency in less stressful and traumatic military experiences. However, the growth and agency scores in the highly stressful narratives were robustly related to a broad range of mental health and well-being measures, whereas growth and agency scores in the key scene narratives were not. In other words, although participants overall conveyed less growth and agency in their narratives about stressful experiences,

the veterans' tendencies to perceive growth and agency in stressful military experiences may have had more substantial implications for their mental health and day-to-day functioning. Stressful experiences have a higher potential to derail individuals' lives than other kinds of significant experiences, and, thus, the ability to create more positive, growth-oriented, and agentic narratives about that kind of experience may be especially important.

We explored the links between narrative communion and coherence and the mental health and well-being outcomes but did not have clear predictions for these dimensions because of the more limited research on narrative communion and well-being and the previous inconsistencies in the literature on coherence in trauma narratives. Narrative communion was only significantly associated with well-being and only for the key scene narrative. This finding demonstrates that veterans who emphasize connections with others when reflecting on important events from their military service are more likely to experience higher subjective well-being in the present than those who do not. It is striking that a thematic focus on communion was not related to any of the mental health outcomes, given the consistent negative associations between actual social support and PTSD symptom levels found in previous studies (Charuvastra & Cloitre, 2008). This may indicate that social support following a traumatic event is more important for veterans' mental health outcomes than perceived connections with others during the event itself. However, it is also possible that the theme of narrative communion may be more important for mental health following trauma in people who have experienced interpersonal trauma, such as victims of intimate partner violence or parental abuse.

There were no significant associations between narrative coherence (i.e., clarity regarding time and place, the temporal ordering of events, and an overarching theme) and the outcome measures for either of the narrative types. This finding is not entirely surprising for two reasons. First, the personality narrative literature demonstrates that narrative coherence is less robustly associated with mental health and well-being than are motivational and affective themes (Adler et al., 2016). Second, research testing the cognitive model of PTSD has yielded inconsistent findings for whether trauma narratives tend to be fragmented and disorganized (Crespo & Fernández-Lansac, 2016; O'Kearney & Perrott, 2006). A recent intervention study for chronic PTSD found that treatment with sertraline or prolonged exposure therapy (PE) did not result in reductions in fragmentation in trauma narratives (Bedard-Gilligan et al., 2017). Interestingly, in the present study, the veterans' narratives about their highly stressful military experiences were slightly more coherent than their narratives about other significant military experiences—

the opposite of what traditional cognitive models would predict. In other words, this nonclinical sample of veterans offered modestly more clarity in terms of context, chronology, and theme when they wrote about their most stressful military experiences than when they wrote about other highly significant memories. It is possible that research in a clinical sample would yield different results. Nonetheless, this study adds further evidence to the conclusion that incoherence of trauma memories may not be a cause of PTSD symptoms.

The final narrative processing dimension we examined was the overall affective tone of the narratives, from very negative to very positive. As expected, this dimension was not associated with the mental health and well-being indicators, except for a single modest association between the affective tone of the highly stressful narrative and PTSS. This finding was important because it suggests that the affective tone in the highly stressful narratives could not account for the more robust links between growth and agency in those narratives and the mental health variables.

The present study had several methodological limitations that should be addressed in future research on narrative processing and PTSD. The sample was not a clinical sample of veterans diagnosed with PTSD but rather a sample of veterans with a range of PTSS. Only 16.9% of the participants scored in the range of probable PTSD on the PCL-5. Nonetheless, the present study offers insights into which aspects of life narratives may predict the full range of PTSD symptoms. It is worth noting that this sample included a large proportion of veterans who had served many years ago (e.g., in the Vietnam War), so it is striking that their PTSS many years postdeployment were still predicted by growth and agency in their narratives. Future research could compare veterans who meet the criteria for PTSD with those who do not in terms of narrative processing of highly stressful military experiences.

The cross-sectional nature of this study makes it difficult to pinpoint the direction of causality. It may be the case that finding avenues for growth from highly stressful events yields better postdeployment outcomes, but it could also be that individuals with more favorable postdeployment outcomes are more likely to retrospectively interpret their military experiences as a source of growth. A longitudinal study is needed to test the direction of causality. Future researchers could obtain narratives of highly stressful events from patients before and after therapy for PTSD to evaluate if the narratives change and whether those changes predict changes in PTSD symptoms. Longitudinal research could also test whether higher levels of narrative growth and agency reduce PTSD over time.

Three other limitations resulted from the online study administration. First, for ethical reasons, we could not require that the highly stressful events the veterans wrote

about be traumatic experiences; although these events involved stressful experiences, we did not explicitly ask participants to write about traumatic experiences because that might have produced undue stress. Just over half of the veterans' narratives about their highly stressful military experiences involved traumatic events as defined by PTSD Criterion A in the *DSM-5*. We did not have enough power to examine the narratives about traumatic events separately from those about highly stressful, but not traumatic, events. Our findings point to some of the narrative processing dimensions that should be examined in future studies that focus only on narratives about traumatic experiences. Second, after obtaining unduly short narratives from our first 20 participants, we discovered that we needed to provide explicit instructions to write at least a paragraph for the narratives. Even with strong attempts to elicit narratives of sufficient length, written narratives on the internet will likely be shorter than those collected from phone or in-person interviews. Because the narratives we obtained were relatively short, we had to use coding systems with fewer points than would be ideal or that combined dimensions that would optimally be assessed separately (e.g., negative change could be assessed separately from positive growth). It may be especially helpful for future researchers to use a longer life story interview administered in person to ensure more complete narratives from all participants. Third, the sample of veterans who produced useable narratives was not as racially or ethnically diverse as the total sample and, thus, was not a representative sample of the United States military population.

The present findings offer two new possibilities for studying trauma narratives in PTSD. First, they provide early evidence for PTSD researchers of the value of adopting a narrative identity perspective. To the best of our knowledge, the existing research on trauma narratives has not drawn from the personality research tradition, yet this tradition offers both theoretical insights and rich methods for studying for narratives and their associations with mental health (Adler et al., 2017; Adler & Clark, 2019). As noted previously, PTSD may involve a profound disturbance in an individuals' narrative identity (McAdams, 2020). Thus, well-established methods of studying narrative identity may prove useful for understanding the nature of trauma narratives. This paradigm points to numerous narrative dimensions that have not been examined in trauma narratives, including some tested in the present study, as well as other potential narrative features, such as contamination sequences (i.e., sequences in which positive events turn negative) or redemption sequences (i.e., sequences in which negative events turn positive; Adler et al., 2017). Future research that includes longer narratives may also benefit from examining a different but related type of narrative coherence that assesses how well the narrator integrates the meaning of trauma narratives into his or her overarching life story (Baerger & McAdams, 1999).

Second, to date, few trauma narrative studies have collected narratives from an online population. This study demonstrates that the internet is a feasible medium for collecting narratives on highly stressful life events. Collecting narratives online offers the opportunity to obtain narratives from a wider geographic range than in-person interviews. Online data collection also makes it easier to collect narratives from veterans of many different eras and, thus, allows researchers to analyze a variety of different military experiences. There is a paucity of research on narrative processing in veterans; having the internet as an option opens the door to the possibility of more studies on this population.

The two current gold standard therapies for PTSD are cognitive processing therapy (CPT) and PE, both of which are effective at reducing symptoms of PTSD (Rutt et al., 2018). CPT is premised on helping individuals work through the negative impact of their traumatic experiences by talking and writing about them and reframing the distressing and unhelpful thoughts attached to those traumatic experiences. It may be possible for therapists who use CPT to help patients think about ways that they grew following their traumatic service events rather than only eliminating their negative thoughts about the event or painting them in a positive, but not growth-oriented, light. Even if patients experienced a loss of control during traumatic military experiences, it may be possible to help them find ways of narrating their lives in agentic terms in the present through the process of therapy. Exposure-based writing therapy also shows promise for reducing PTSD symptoms (Dawson et al., 2021) and could potentially be improved by encouraging patients to find avenues of growth from their traumatic experiences. This is by no means an easy process; it would be arduous to find avenues of growth from events that are so troubling. Yet, the findings of this study indicate that this difficult process could be beneficial to patients. These results suggest that it may be the meaning that people create in their narratives about their traumatic experiences that is crucial for mental health. Given evidence that narrative meaning-making enables individuals to make gains in therapy (Adler et al., 2013), the treatment of PTSD in veterans may benefit from focusing on helping patients create a positive sense of meaning from their military experiences, even painful ones.

There is a model of treatment for PTSD that already incorporates a narrative perspective on traumatic memories—namely, narrative exposure therapy (Raghuraman et al., 2021). This therapy was originally created to treat refugees who have experienced multiple traumatic events but has been expanded for use in other settings. The

therapy helps clients process their traumatic memories in the context of creating a more meaningful, overarching life story. There is some limited evidence for its effectiveness, but the quality of existing studies is generally poor (Raghuraman et al., 2021). Better-quality basic research on narrative identity in individuals who have experienced trauma may help point to processes to target in future iterations of narrative exposure therapy and in the treatment of this troubling disorder more generally.

OPEN PRACTICES STATEMENT

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials should be sent via email to the lead author at rshiner@colgate.edu.

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REFERENCES

Adler, J. M., & Clark, L. A. (2019). Incorporating narrative identity into structural approaches to personality and psychopathology. *Journal of Research in Personality*, *82*, 103857. https://doi.org/10.1016/j.jrp.2019.103857

Adler, J. M., Dunlop, W. L., Fivush, R., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., McLean, K. C., Pasupathi, M., & Syed, M. (2017). Research methods for studying narrative identity: A primer. *Social Psychological and Personality Science*, *8*(5), 519–527. https://doi.org/10.1177/1948550617698202

Adler, J. M., Harmeling, L. H., & Walder-Biesanz, I. (2013). Narrative meaning-making is associated with sudden gains in psychotherapy clients' mental health under routine clinical conditions. *Journal of Consulting and Clinical Psychology*, *81*(5), 839–845. https://doi.org/10.1037/a0033774

Adler, J. M., Lodi-Smith, J., Philippe, F. L., & Houle, I. (2016). The incremental validity of narrative identity in predicting well-being: A review of the field and recommendations for the future. *Personality and Social Psychology Review*, *20*(2), 142–175. https://doi.org/10.1177/1088868315585068

Adler, J. M., Turner, A. F., Brookshier, K. M., Monahan, C., Walder-Biesanz, I., Harmeling, L. H., Albaugh, M., McAdams, D. P., & Oltmanns, T. F. (2015). Variation in narrative identity is associated with trajectories of mental health over several years. *Journal of Personality and Social Psychology*, *108*(3), 476–496. https://doi.org/10.1037/a0038601

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Author.

Baerger, D. R., & McAdams, D. P. (1999). Life story coherence and its relation to psychological well-being. *Narrative Inquiry*, *9*(1), 69–96. https://doi.org/10.1075/ni.9.1.05bae

Bedard-Gilligan, M., Zoellner, L. A., & Feeny, N. C. (2017). Is trauma memory special? Trauma narrative fragmentation in PTSD: Effects of treatment and response. *Clinical Psychological Science*, *5*(2), 212–225. https://doi.org/10.1177/2167702616676581

Bovin, M. J., Marx, B. P., Weathers, F. W., Gallagher, M. W., Rodriguez, P., Schnurr, P. P., & Keane, T. M. (2016). Psychometric properties of the PTSD Checklist for the *Diagnostic and Statistical Manual of Mental Disorders*–fifth edition (PCL-5) in veterans. *Psychological Assessment*, *28*(11), 1379–1391. https://doi.org/10.1037/pas0000254

Brewin, C. R., Dalgleish, T., & Joseph, S. (1996). A dual representation theory of posttraumatic stress disorder. *Psychological Review*, *103*(4), 670–686. https://doi.org/10.1037/0033-295x.103.4.670

Charuvastra, A., & Cloitre, M. (2008). Social bonds and posttraumatic stress disorder. *Annual Review of Psychology*, *59*, 301–328. https://doi.org/10.1146/annurev.psych.58.110405.085650

Crespo, M., & Fernández-Lansac, V. (2016). Memory and narrative of traumatic events: A literature review. *Psychological Trauma: Theory, Research, Practice, and Policy*, *8*(2), 149–156. https://doi.org/10.1037/tra0000041

Dawson, R. L., Calear, A. L., McCallum, S. M., McKenna, S., Nixon, R. D. V., & O'Kearney, R. (2021). Exposure-based writing therapies for subthreshold and clinical posttraumatic stress disorder: A systematic review and meta-analysis. *Journal of Traumatic Stress*, *34*(1), 81–91. https://doi.org/10.1002/jts.22596

Derogatis, L., Lipman, R., Rickets, K., Uhlenhuth, E., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, *19*(1), 1–15. https://doi.org/10.1002/bs.3830190102

Disner, S., Kramer, M., Nelson, N., Lipinksi, A., Christensen, J., Polusny, M., & Sponheim, S. R. (2017). Predictors of postdeployment functioning in combat-exposed U.S. military veterans. *Psychological Science*, *5*(4), 650–663. https://doi.org/10.1177/2167702617703436

Dunlop, W., & Tracy, J. (2013). Sobering stories: Narratives of self-redemption predict behavioral change and improved health among recovering alcoholics. *Journal of Personality and Social Psychology*, *104*(3), 576–590. https://doi.org/10.1037/a0031185

Foa, E. B., Molnar, C., & Cashman, L. (1995). Change in rape narratives during exposure therapy for posttraumatic stress disorder. *Journal of Traumatic Stress*, *8*(4), 675–690. https://doi.org/10.1007/BF02102894

Ginzburg, K., Ein-Dor, T., & Solomon, Z. (2010). Comorbidity of posttraumatic stress disorder, anxiety and depression: A 20-year longitudinal study of war veterans. *Journal of Affective Disorders*, *123*(1–3), 249–257. https://doi.org/10.1016/j.jad.2009.08.00

Hobfoll, S. E., Gaffey, A. E., & Wagner, L. M. (2020). PTSD and the influence of context: The self as social mirror. *Journal of Personality*, *88*(1), 76–87. https://doi.org/10.1111/jopy.12439

King, L. (2001). The happy road to the good life: The happy, mature person. *Journal of Humanistic Psychology*, *41*(1), 51–72. https://doi.org/10.1177/0022167801411005

Mansfield, C. D., McLean, K. C., & Lilgendahl, J. P. (2010). Narrating traumas and transgressions: Links between narrative processing, wisdom, and well-being. *Narrative Inquiry*, *20*(2), 246–273. https://doi.org/10.1075/ni.20.2.02man

McAdams, D. P. (2020). Psychopathology and the self: Human actors, agents, and authors. *Journal of Personality*, *88*(1), 146–155. https://doi.org/10.1111/jopy.12496

McAdams, D. P., & McLean, K. C. (2013). Narrative identity. *Current Directions in Psychological Science*, *22*(3), 233–238. https://doi.org/10.1177/0963721413475622

McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., Fivush, R., Graci, M. E., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., & McCoy, T. P. (2020). The empirical structure of narrative identity: The initial big three. *Journal of Personality and Social Psychology*, *119*(4), 920–944. https://doi.org/10.1037/pspp0000247

Morgan, J., Desmarais, S., Mitchell, R., & Simons-Rudloph, J. (2017). Posttraumatic stress, posttraumatic growth, and satisfaction with life in military veterans. *Military Psychology*, *29*(5), 434–447. https://doi.org/10.1037/mil0000182

O'Kearney, R., & Perrott, K. (2006). Trauma narratives in posttraumatic stress disorder: A review. *Journal of Traumatic Stress*, *19*(1), 81–93. https://doi.org/10.1002/jts.20099

Pals, J. (2006). Narrative identity processing of difficult life experiences: Pathways of personality development and positive self-transformation in adulthood. *Journal of Personality*, *74*(4), 1079–1110. https://doi.org/10.1111/j.1467-6494.2006.00403.x

Raghuraman, S., Stuttard, N., & Hunt, N. (2021). Evaluating narrative exposure therapy for posttraumatic stress disorder and depression symptoms: A meta-analysis of the evidence base. *Clinical Psychology and Psychotherapy*, *28*(1), 1–23. https://doi.org/10.1002/cpp.2486

Reese, E., Haden, C., Baker-Ward, L., Bauer, P., Fivush, R., & Ornstein, P. (2011). Coherence in personal narratives: A multidimensional model. *Journal of Cognition and Development*, *12*(4), 1–38. https://doi.org/10.1080/15248372.2011.587854

Rutt, B., Oehlert, M., Krieshok, T., & Lichtenberg, J. (2018). Effectiveness of cognitive processing therapy and prolonged exposure in the Department of Veterans Affairs. *Psychological Reports*, *121*(2), 282–302. https://doi.org/10.1177/0033294117727746

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. https://doi.org/10.1037/0022-3514.57.6.1069

Schmalbach, B., Zenger, M., Tibubos, A. N., Kliem, S., Petrowski, K., & Brahler, E. (2021). Psychometric properties of two brief versions of the Hopkins Symptom Checklist: HSCL-4 and HSCL-10. *Assessment*, *28*(2), 617–631. https://doi.org/10.1177/1073191119860910

Üstün, T., & World Health Organization. (2010). *Measuring health and disability: Manual for WHO Disability Assessment Schedule WHODAS 2.0*. World Health Organization.

Wamser-Nanney, R. (2019). Event centrality: Factor structure and links to posttraumatic stress disorder symptom clusters. *Journal of Traumatic Stress*, *32*(4), 516–525. https://doi.org/10.1002/jts.22413

Waters, T., & Fivush, R. (2014). Relations between narrative coherence, identity, and psychological well-being in emerging adulthood. *Journal of Personality*, *83*(4), 441–451. https://doi.org/10.1111/jopy.12120

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). *The PTSD Checklist for DSM-5 (PCL-5)*. https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp