

A Model of Meaning-Making Coping and Growth in Combat Veterans

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More than 1.6 million military men and women have deployed to fight the global war on terror. Although studies have suggested that approximately one third of these service men and women return with a mental health condition or a brain injury, a gap remains in our understanding about how these individuals cope with and grow from their experiences. In this article, we review the existing body of research related to growth and recovery from trauma and then propose an empirically informed and contextually sensitive model to guide future research with combat veterans. We draw from research focused on resilience, posttraumatic growth, and decline (negative or pathological) change trajectories, and we propose that meaning-making coping is a core mechanism of the posttraumatic growth process for combat veterans. Implications for practitioners and the next steps for future research are presented.

Keywords: meaning making, posttraumatic growth, veterans, trauma, military

More than 1.6 million U.S. military men and women have deployed to fight the global war on terror since September 11, 2001 (Seal et al., 2010), and since this time an explosion of research has focused on the negative mental health consequences of wartime trauma (Hoge, Auchterlonie, & Milliken, 2006; Hoge et al., 2004; Hoge, Terhakopian, Castro, Messer, & Engel, 2007; Tanielian & Jaycox, 2008). This research has largely focused on mental health prevalence and access to mental health care for those returning from combat. In spite of this focus on mental health problems, most veterans have reported more positive than negative outcomes from their wartime experiences, and many who are initially distressed are able to overcome these difficulties and go on to live improved lives (see Schok, Kleber, Elands, & Weerts, 2008).

In the past decade, the focus on posttraumatic growth (PTG) and how individuals are able to make sense of their difficult experiences and grow in spite of it has increased. Surprisingly, veterans have been largely ignored in these studies (Rosner & Powell, 2006), and although some PTG research findings can be applied to trauma in general, studies have also shown that personal experiences differ by factors such as type of trauma (Shakespeare-Finch, 2010) and the specific population (Deering, Glover, Ready, Eddlemen, & Alarcon, 1996; Kleim & Ehlers, 2009). In this article, we review the current literature on PTG and then present a model of meaning-making coping and growth in combat veterans with the goal of providing a framework to inform future research on this important topic.

Although the outcome for every war veteran is unique, three main trajectories have been identified in the literature: resilience, decline, and PTG. *Resilience* is the ability of someone to experience trauma without a shattering of world assumptions, which in turn allows the individual to return to or surpass previous levels of

functioning. Resilience is often characterized by positive self-esteem, optimism, having some sense of control over life events, and the ability to return to normative functioning after traumatic experiences (Agaibi & Wilson, 2005) or as the lack of PTSD (Levine, Laufer, Stein, Hamama-Raz, & Solomon, 2009). This group can be thought of as those veterans who are exposed to the same traumatic events as their peers but who do not develop PTSD or other related symptoms.

Decline, which can also be viewed as a negative or pathological outcome, occurs when an individual is not able to cope with the trauma and develops a pathological response, often resulting in a diagnosable mental health condition such as, but not limited to, posttraumatic stress disorder (PTSD), depression, or suicidality. This decline in functioning is indicative of a shattering of world assumptions with inadequate or failed attempts to cope.

Posttraumatic growth, or PTG, is defined as interpersonal growth or positive change resulting from struggling with trauma and growing in spite of it (Tedeschi & Calhoun, 2004). It is most often measured by both total scores and individual scores on the domains of the Posttraumatic Growth Inventory (PTGI). It is preceded by an initial shattering of world assumptions, a period of difficulty characterized, for example, by a PTSD diagnosis or severe PTSD-related symptoms, but followed by growth in some or all of the domains in the PTGI. Outcomes of PTG include an individual's arriving at changed priorities, having a greater appreciation for the value of his or her own life, having a better understanding of spiritual matters or a stronger religious faith, and discovering that he or she was stronger than previously realized.

Veterans returning home from combat represent a group with unique trauma experiences that are ideally viewed contextually through a lens that is sensitive to the specifics of combat trauma and the unique characteristics of the veterans themselves. The psychological trauma of military combat is very different from other traumas such as being the victim of a natural disaster, a severe car accident, or a terminal illness. Being the victim of interpersonal violence such as rape or violent assault may be more closely related to combat trauma because of the interpersonal nature of the events, but in these cases the trauma survivor is still considered solely a victim rather than as also a perpetrator of

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violence and trauma against others. Furthermore, the piling up of trauma and other stressors that come with the intensity of combat is not typical of most other traumas, with research often focusing on a single traumatic event. Current U.S. combat veterans represent a self-selected population of individuals who willingly face traumatic experiences with foreknowledge and in the name of national security rather than as victims of random events. In this article, we make the case for inclusion of these important and unique factors in the future study of combat-related PTG.

In writing this article, we reviewed all articles published in the past 10 years that focused on growth after trauma in military and nonmilitary populations, and we used this review to develop a conceptual model to guide future research in this area. In this review, we could find only eight studies addressing PTG in veteran populations specifically; of these eight articles, four focused on prisoners of war (POWs), leaving only four studies addressing a more representative sample of veterans. One of the four non-POW articles focused on veterans of the first Gulf War (Maguen, Vogt, King, King, & Litz, 2006), finding that social support was positively associated with PTG. Another (Lee, Luxton, Reger, & Gahm, 2010) evaluated the use of the PTGI with veterans returning from the current wars in Iraq and Afghanistan. Kaler, Erbes, Tedeschi, Arbisi, and Polusny (2011) validated the short form of the PTGI with a sample of National Guard soldiers. Their findings showed satisfactory reliability and replicated the factor structure found in the original PTGI among Iraq War veterans. The final study (Pietrzak et al., 2010) found unit member support to be significantly and positively related to higher levels of PTG. Although these studies are useful, the lack of PTG research using veteran populations overall is of note, considering the massive media attention given to both wars and the concern for the welfare of the men and women returning home after their combat deployments. The number of veterans returning home from recent wars with crises of conscience and meaning related to mental health decline calls for a renewed focus in this area.

Key Themes in the Literature

Combat Trauma Is Different

Wartime traumatic experiences are different from natural disasters, debilitating or terminal illness, or motor vehicle accidents. They differ in part on the basis of individual factors such as helplessness, controllability, expectation, and threat to one's life (Linley & Joseph, 2004). For example, military members are not only allowed but are specifically expected to kill other human beings, destroy property, take control of territory, and break the enemy's will to fight.

Also, questions of right and wrong and of good and evil inevitably arise as soldiers carry out the mission of war. Invariably, they must at least question their own actions and choices made during wartime. Lt. Col. Dave Grossman (2008), a former Army Ranger, paratrooper, and psychology instructor at West Point who has written extensively on the topics of killing and combat, wrote, "The surest way to a dose of posttraumatic stress disorder is to commit an atrocity or a criminal act that violates your code of ethics" (p. 358). With regard to killing during wartime, outcomes are different, based on the status of the enemy at the time of killing. Combat veterans who have killed civilians or prisoners

have reported the worst mental health outcomes (PTSD in particular), followed by those who killed combatants but not prisoners or civilians. Finally, those who do not believe they have killed others have reported the least symptomatology (Maguen et al., 2009). This finding alone indicates that the act of killing should be viewed with consideration of contextual factors rather than simply with knowledge of traumatic war-time events or whether a veteran has killed in combat. Furthermore, veterans participating in the wars in Iraq and Afghanistan have also had to contend with multiple combat deployments, which makes recovery from combat trauma more difficult and the pile up of traumas over time more likely (Kline et al., 2010; Seal et al., 2009).

Responses to combat trauma vary considerably from soldier to soldier, which may range from resilience and continued positive functioning to having multiple difficulties, including co-occurring disorders and other problems (Sayers, Farrow, Ross, & Oslin, 2009). A number of factors may help to explain this wide variation, and the proposed model attempts to demonstrate the centrality of the meaning-making coping process. If a group of veterans can return home after having essentially the same experiences but with a wide range of outcomes between them, then it could be possible that the differences in their responses may have less to do with what happened and more to do with a number of individual characteristics such as personality, individually perceived unit cohesion, and physiological stress tolerance (Grossman, 2008) and ultimately with how each veteran creates meaning to cope with the events (Park & Ai, 2006; Schok, Kleber, & Lensvelt-Mulders, 2010).

In summary, several points separate combat trauma from other traumas. U.S. military men and women, who sign up for military duty, put themselves at risk voluntarily. Although they represent a wide cross-section of society, they are also highly trained and selected for their skills and ability to persevere under stress. Those who do not pass strict training requirements are sent home. Combat represents a mass trauma (multiple-survivor), multitrauma experience and is often carried out over an extended period of time with alternating periods of extreme stress and boredom, in contrast to other traumas, which vary in a variety of ways. Combatants not only experience trauma, but their mission often requires them to simultaneously perpetrate a great deal of trauma, death, and destruction on the enemy, making this type of trauma unique.

Meaning-Making Coping

Although not the only relevant factor, assigning meaning to events plays a critical role in determining the stressfulness of an event (Frankl, 1992). On the basis of this understanding, Frankl (1992) theorized that people strive for meaning and meaning is what helps one cope with stress and trauma. One core component that most, if not all, psychological therapies share is the focus on the transformation of meanings that clients have about themselves; their experiences, which are often traumatic; and their environment (Brewin & Power, 1997; Sprenkle & Blow, 2004).

In a general sense, people will have a more positive outcome if they are able to somehow incorporate their traumatic experience into their existing global meaning system without discrepancy or make adequate changes to that system as a result of those experiences (Joseph & Linley, 2005). This is not to say that positive and congruent meaning making will guarantee a symptom-free out-

come, but rather that the evidence seems to indicate that meaning making is instrumental in helping to determine whether a memory is traumatic or simply stressful and, if so, how deeply traumatic the event, action, or decision was and is. Park and Ai (2006) developed a model to help explain how growth may result from the meaning-making coping process. They based their model on theories of trauma that indicated that distress is the result of the violation of global meanings by the appraised meanings of traumatic events (Janoff-Bulman & Frantz, 1997). *Global meanings* are those meanings that people live their lives by and base their decisions on. *Appraised meanings* are those meanings related to the traumatic events with which people interact, such as car accidents, terminal illness, or combat-related traumatic experiences, and are the perceived facts and memories associated with those specific events.

Cognitively based theories generally hold that if there is no discrepancy between the appraised meaning of the event and the person's sense of global meaning, distress is minimized. If, however, there is a discrepancy between the global meanings held by the person and the appraised meaning of the event, then distress follows until there is reconciliation between these two meanings. Park and Folkman (1997) found that the level of discrepancy between these two meanings is significantly correlated with the level of distress created by that event. When there is a discrepancy, people work to reduce the distress through the meaning-making coping process (Janoff-Bulman & Frantz, 1997) so that the appraised meaning of the event is integrated and no longer violates the global meaning system (Klinger, 1998). Recently, Linley and Joseph (2011) found that the presence of meaning in life (an aspect of global meaning) was associated with greater PTG but that the search for meaning was associated with greater negative change. This finding may help begin to explain why traumatic stress has often been correlated in some way with PTG. While people deal

with ambiguity and confusion, the process of changing one's meaning system is stressful and yet necessary to develop the positive sense of meaning that is associated with decreased stress, growth, and ultimately a new sense of resilience.

A Model of Meaning-Making Coping and Growth in Combat Veterans

We propose a model of meaning-making coping after trauma specific to combat veterans (see Figure 1), based on previous work regarding meaning-making coping after trauma (Park, 2005; Park & Ai, 2006; Park & Folkman, 1997). Building on existing research relevant to veteran populations, our model provides specific context and integrates the research on three general categories of process and outcome: resilience, pathology, and PTG.

Linley and Joseph (2004) identified four important aspects of PTG literature needing attention: investigating the associations between growth and distress; the need for more longitudinal research; links with psychosocial variables such as social support, spirituality, and religion; and the construction and testing of comprehensive theoretical models. We propose a model that is amenable to all four dimensions and is specific to the trauma of combat deployments.

Although we believe that a contextual meaning-making framework is central to the positive processing of trauma, there are two points of caution with respect to the model. First, in spite of the focus on the meaning-making coping processes, discrepancy of meaning, and the resultant meanings made, a number of other areas of research have contributed greatly to the field of traumatology with regard to combat veterans. Factors such as the physiology of the human body under combat stress, the role of perceptual and memory distortions, personality characteristics, emotional

A MODEL OF MEANING-MAKING COPING AND GROWTH IN COMBAT VETERANS

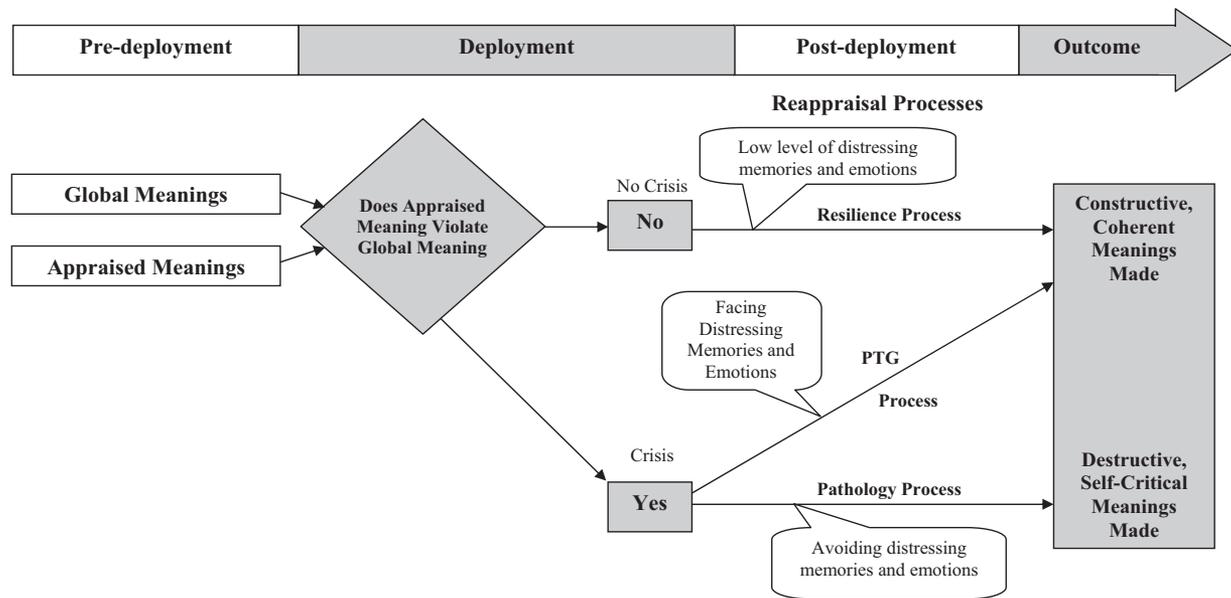


Figure 1. Longitudinal and broadly contextual model of meaning-making coping and growth in combat veterans. PTG = posttraumatic growth.

dyregulation, uncertainty, and stress tolerance are also important (Grossman, 2008).

Second, the model represents a broad context but does not dictate the specific variables or intrapersonal and interpersonal factors that are important. We hope that the broad context presented here will facilitate the inclusion of a wide variety of these other factors systematically in future research and, we hope, even indicate modification of the model as necessary.

Global Meanings

The global meaning construct consists of three parts: general beliefs, major goals, and subjective feelings such as overall meaningfulness and purpose in life (Park, 2005; Park & Ai, 2006). In the model (see Figure 1), global meanings are represented in the first white column, the predeployment phase, because it is the predeployment global meanings that will be tested through the combat experience. For veterans about to deploy, important global meaning questions are posited, such as “What is my purpose in life and how does my deployment fit into that purpose?” “What is right and what is wrong during combat?” and “Am I a good and dependable person; can my fellow warriors count on me?” More important, these questions will have tentative answers that represent the actual predeployment global meanings. They will either be found adequate or be potentially shattered by the traumatic experience, followed by either continued distress or efforts at growth and change. Owens, Steger, Whitesell, and Herrera (2009), in their study of veterans from all of the major wars from World War II to the current wars in Iraq and Afghanistan, found overall meaning in life to be related to lower levels of PTSD severity and also to serve as a buffer for the effects of depression.

Appraised Meanings

The appraised meaning construct represents the meaning that a person associates with a traumatic event. Combat-related traumatic events can include, but are not limited to, killing someone, seeing a friend get killed, losing control or breaking down under stress, or committing an atrocity. This pile up of trauma is one area in which combat-related trauma differs from other traumatic experiences. Most research is carried out in relation to a single identifiable event, and conceptual models typically identify this event as a decision point. For the veteran, however, one single event is rare; several events occur within the overall experience of a combat deployment, with varying degrees of potential trauma, making it inappropriate to study each event in isolation. In many cases, traumatic events may stack, overlap, or exacerbate other traumas.

Each individual returning veteran will compare appraised meanings with global meanings as he or she reevaluates his or her experiences during the deployment. Meaning-making coping theory holds that when globally held meanings adequately explain or relate to appraised meanings of the veteran’s experience, the veteran experiences less discrepancy.

Discrepancy

After an event is appraised, it is compared with a person’s existing global meaning system. According to meaning-making coping theory, if the appraised meaning of a troubling event has a

high degree of discrepancy with global meanings, then distress results. An example might shed light on this process: A soldier who has been well trained and is in the best physical shape of his life is deployed to Iraq and experiences 20 days of engagement with the enemy in combat. During this time, he is involved in a number of terrible experiences, but what sticks out most for this soldier is the time when he and a few of his fellow soldiers were pinned down by enemy fire. He was in charge at the time and made an assessment of the situation and gave the order that two of them would provide cover fire and the rest would run to safety. When the incident was over, three of them had been shot and two of those died as a result of enemy fire. Believing that good leadership keeps men alive, this soldier may suffer from a discrepancy between this belief and the death of his fellow warriors, and he may believe that he must not be a good leader and as a result feels responsible for their deaths.

In the model (see Figure 1), this appraisal comparison is represented by a shaded diamond shape with a decision arrow pointing to “no crisis” if there is no discrepancy and to “crisis” if there is a discrepancy. Because the events in question occur during combat deployment, the decision regarding the potential violation of global meanings, also called the initial appraisal of the actual event, is in the deployment column. Note again that this may often represent multiple and different types of trauma for the combat-deployed veteran rather than the single traumatic event typically indicated by previous trauma research.

Longitudinal View

Frazier et al. (2009) pointed to the importance of studying PTG with pretrauma baseline measures to capture what they called actual growth versus perceived growth. By directly comparing perception of growth and pretest–posttest measures of growth, they found evidence that perception of growth may be a different construct than actual growth. Very recently, Gunty et al. (2011) found that perceived growth was most strongly related to actual growth when respondents reported less distress and greater life satisfaction after trauma. This finding could help to explain some of the conflicting findings regarding the relationship between PTSD and PTG. Although almost all PTG research has focused on perceptions without pretrauma measures, these findings indicate the importance of pretrauma and posttrauma measures related to traumatic growth, thus supporting this important aspect of the model. For this reason alone, longitudinal research is not simply preferred but is crucial in sorting out the difference between perceived and actual growth and the potential values or drawbacks of each.

The long arrow at the top of the model (see Figure 1) represents this chronological aspect of trauma. The alternating shaded and unshaded areas represent a change in context over time for an entire combat deployment cycle. Many of those who have served in Iraq or Afghanistan, however, have experienced multiple deployments. New deployments have appraised meanings that are affected by previous deployments, and service members hold global meanings that have developed since the previous deployments. Each deployment is unique and represents a full cycle of the process represented by the model. The far left section of the arrow is the predeployment time frame, consisting of untested global and pretrauma (often untested) assessed meanings. The second part of

the arrow represents the deployment phase, in which the traumatic experiences of interest occur. Note again that a fundamental difference between the proposed model and existing models of trauma lies in the conceptualization of the traumatic experience as happening during a combat deployment time frame rather than as a single event. The third part of the arrow represents the postdeployment phase. In a study of civilians displaced by war, those who had become refugees outside their war-torn country fared better than those who were internally displaced (Rosner & Powell, 2006), thus supporting the importance of this change in context for the reappraisal process. Milliken, Auchteronie, and Hoge (2007) found that veteran mental distress is directly related to combat exposure, but that the distress manifests itself during the reintegration period. As a further complication for the veterans of the wars in Iraq and Afghanistan, this postdeployment reappraisal process is often cut short by multiple combat deployments. Veterans leave their families and other sources of social support behind, exacerbating recovery from previous trauma and creating new stressors as families scramble to cope yet again before the wounds of the previous deployment have healed. This important area deserves further inquiry. The final portion of the chronological arrow is the outcome. Although further growth and meaning making may continue years into the future, the meanings made are likely to become relatively stable over time.

Longitudinal research provides a level of understanding unavailable via other research methods. Trauma is notoriously difficult to study longitudinally because one cannot know who will be affected by a particular trauma, yet the experience of combat trauma is ideal for this type of inquiry. People join the military with full knowledge that they may be exposed to combat operations, and those who join during times of conflict have an even greater appreciation of this possibility. Research on resilience and PTG and also on negative outcomes after trauma will enhance not only the study of combat trauma, but of other traumas that are more difficult to study longitudinally simply because it is virtually impossible to target a population that has a high likelihood of experiencing a specific kind of trauma before the trauma is experienced. PTG research is particularly poised to benefit from longitudinal inquiry after recent investigations have identified that trauma survivors perceive growth differently than actual growth as measured by pretrauma and posttrauma measures (Frazier et al., 2009).

Reappraisal Process

The goal of reappraisal is the reconciliation of appraised and global meanings, and the process involves facing difficult memories and emotions. The reappraisal process is an inherently social one (Harvey, 1996), which is both intrapersonal (wrestled with internally) and interpersonal (supported, challenged, discussed, and validated by others in a number of ways). Affect figures prominently in this process. Memories themselves can be particularly affectively intense, coping styles can address affect in a number of ways, and personality styles can take on a number of forms related to positive or negative affect.

Inherent in the reappraisal process is the often intense and affect-laden negative emotions that arise through reconciliation of the two levels of meaning. Park, Aldwin, Fenster, and Snyder (2008) found that emotions could be both motivators of coping and

outcomes of the coping process. Additionally, they found that in spite of a positive relationship between PTG and PTSD, patterns of coping and the related emotions involved were different when comparing PTSD and PTG processes and outcomes. In their study of just over 1,000 U.S. adults about 6 weeks after the September 11th terrorist attacks, positive coping and anger were associated with PTG, whereas negative coping and depression were associated with PTSD.

Affective personality styles are also related to differentiating between the development of PTG and that of PTSD. Comparing PTG outcomes with PTSD outcomes, Kunst (2011) compared affective personality styles. He found that although having a high affective personality (high in both positive and negative affect) was related to both PTG and PTSD, having a self-destructive personality style (low in positive affect and high in negative affect) was related only to increased PTSD symptom severity. Future studies could include resilience to see how affective personality styles relate differentially to all three outcomes. Although reappraisal can be complex, we next detail three mechanisms of reappraisal that have featured prominently in the literature.

Social support. Social support has long been studied as a protective factor in negotiating recovery from a traumatic experience and as an important factor in growth. The existence of social support has been found to greatly decrease the likelihood of developing PTSD (Taft, Stern, King, & King, 1999). Meichenbaum (2006) made a strong case for the importance of individual and group narratives in creating and maintaining both negative and positive outcomes from traumatic experiences. Social support has been found to facilitate the meaning-making process through the opportunity to process the events with others (Harvey, 1996; Orbach, Harvey, Davis, & Merbach, 1994), but being supportive of combat veterans is not always easy. Solomon (1988) found that negative social behaviors associated with combat-related PTSD made it more difficult for veterans to obtain social support from others, especially from those who are not veterans. Caregivers of veterans have also reported secondary traumatic stress (Bride & Figley, 2009). Finally, constraining social environments, indicated by disapproval or disinterest, are related to higher rates of distress after trauma (Lepore, Ragan, & Jones, 2000). This can be exemplified at the societal level in the difference between the homecoming of World War II veterans, who were hailed as heroes of the free world, and the experience of many Vietnam veterans, who had to get out of uniform quickly to evade public scorn. Although social support overall is crucial during the reappraisal phase, the aforementioned research has indicated that quality of social support is centrally important for trauma survivors and should be included alongside measures that take into account how many people are in a trauma survivor's social support network. This research has highlighted the importance of having someone to talk to and also the value of being truly understanding.

Social support is complex and spans from intimate family and other interpersonal relationships to casual social contact and to perceptions of societal views of traumatic events such as the experience of combat deployment related to specific wars such as those in Iraq and Afghanistan. These different social relationships affect returning veterans' reappraisal process. Future inquiry should view the impact of social support on the range of outcomes of combat trauma rather than on one potential outcome measure at a time, as is typical at present.

Rumination. Rumination, another reappraisal strategy that is still under study, has long been associated with PTSD (Michael, Halligan, Clark, & Ehlers, 2007) and depression (Cambron & Acitelli, 2010), but recently both intrusive and deliberate rumination have been positively associated with PTG as well. Rumination is multidimensional in that use of deliberate and intrusive rumination tends to change over time with regard to PTG (Cann, Calhoun, Tedeschi, & Solomon, 2010; Taku, Cann, Tedeschi, & Calhoun, 2009). Intrusive rumination soon after the event is most positively related to PTG, but deliberate rumination rather than intrusive rumination long after the event most strongly predicts current PTG levels. These findings suggest that more needs to be done, specifically with the knowledge that detecting the presence or absence of rumination is insufficient to the understanding of pathological outcomes such as either PTSD and depression or PTG. It could be that particular aspects of the rumination process, such as the related meaning-making process and the ultimate meanings that result from the process, are more important.

Therapeutic processes. Therapeutic processes have been found to help those having trouble reconciling traumatic memories with their global meanings or personal narratives. In nearly all theoretical approaches, therapists routinely help veterans and other trauma survivors reappraise meanings of events more constructively (Wong, 1998). Van Der Kolk and Fisler (1995), in a community sample of people reporting PTSD, demonstrated that traumatic memories are by their nature formed in primitive ways, as dissociated sensory and affective elements, and are molded into explicit personal narratives only over time. By contrast, merely distressing but not traumatic memories are formed with coherent and functioning narratives, absent the dissociation and deep affect associated with traumatic memories. One goal of therapy for traumatized veterans, then, is to help them reappraise these dissociative affect-laden memories into constructive narratives rather than destructive ones (Van Der Kolk & Fisler, 1995). Recent cognitive behavior strategies have been used with positive results. For example, prolonged exposure therapy, one specific exposure therapy program, has shown positive treatment results for trauma survivors by helping them access and process the intense emotions related to the trauma (see Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010, for a meta-analytic review of all published randomized clinical trials of this therapy). One multidimensional exposure-based group therapy treatment has helped improve personality functioning and decrease levels of anxiety, somatic complaints, depression, and PTSD symptoms (Rademaker, Vermetten, & Kleber, 2009). These processes of meaning reconciliation and emotional processing are arguably interrelated and deserve continued attention.

At times, the intense emotions aroused by the traumatic event and the splintered meaning system cause great distress. Many veterans avoid these feelings through dissociative or avoidant processes including substance abuse or redeployment. Successful psychotherapy interventions help these veterans to face these difficult, emotion-laden memories and work through them to a point of resolution and decreased distress.

Overall, the reappraisal process involves intrapsychic as well as social processes, which include social support, rumination, and for some, professional therapeutic relationships. Resilient and growth-related outcomes share a common understanding that deliberate rumination, social support, and therapeutic interactions for those

who are struggling (but facing their experiences) lead to either a positive continuance of resilience or improving outcomes after an initial shattering of world assumptions. As veterans seek to either reinforce existing meaning constructs or reevaluate how the appraised meanings of events are related to their current worldview, they tend to grow mentally and emotionally. Unfortunately, for many veterans the reappraisal process involves negative appraisals of self, extreme negative affect, having to face a lack of life meaning or personal significance, and a tendency to dissociate and block this deeply disturbing content in an effort to cope with experiences deemed too difficult to face. The proposed model takes this full range of reappraisal experiences into account.

Trauma Outcomes

Although individual outcomes after trauma are virtually limitless, three broad categories of traumatic outcomes have been researched. What follows is a general summary of traumatic outcome research and meaning-making coping in veteran populations, including resilient outcomes, negative outcomes, and growth outcomes. The approach including multiple outcomes is so novel that only recently did trauma research occur that incorporated all three trajectories: PTG, PTSD (representing decline), and resilience (Nishi, Matsuoka, & Kim, 2010). Although Nishi et al.'s (2010) sample consisted of motor vehicle accident survivors, their study indicated the appropriateness of the inclusive approach. They found, interestingly, that the PTGI Spiritual Change and Appreciation of Life subscales were positively associated with PTSD and the Relating to Others, New Possibilities, and Personal Strength subscales were positively correlated with resilience. Their data also indicated that PTSD and resilience were inversely related. In other words, those reporting high resilience also reported low PTSD scores and vice versa. Although their design was cross-sectional, their findings highlight the importance of more comprehensive approaches, such as those comparing multiple outcomes toward disambiguation of previous findings.

Combat veterans are forever changed by their experiences, and these changes do not fall neatly into categorization for quick review. The trajectories indicated by the model are not mutually exclusive, as demonstrated in the literature, but they do reflect the direct and inverse relationships or trends that are also found in that same literature so that future investigations can verify, refute, or indicate a change in the model.

Resilience to wartime trauma. Resilient outcomes are represented by a relative lack of decreased functioning or an effective return to adequate functioning soon after a traumatic event that is persistent over time. Schok et al. (2010) defined resilience as a latent variable consisting of self-esteem, optimism, and perceived control. In their review of the resilience literature, Lepore and Revenson (2006) discussed three distinct types of resilience. *Resistance* is characterized by a relative absence of negative symptoms. *Recovery* represents an ability to return to a normal (homeostatic) pretrauma state in a relatively short time. The third type, *reconfiguration*, is when a person changes for the better as a normative stressor response to the trauma.

Matthews (2008) made a case for positive psychology in studying military populations because of the generally resilient nature of most military members. Realizing the importance of building psychological resilience in military men and women, the U.S.

Army has developed, in conjunction with the nation's top behavioral health experts, the Comprehensive Soldier Fitness program (Casey, 2011; Seligman & Fowler, 2011). A recent issue of *American Psychologist* (the issue in which Casey, 2011, and Seligman & Fowler, 2011, were published) was dedicated to this program. One core component of this program is the Master Resilience Trainer course (Reivich, Seligman, & McBride, 2011), which was designed to train noncommissioned officers in mastering resilience skills and learning how to train others. Davis, Wortman, Lehman, and Silver (2000) found that those not experiencing discrepancy between their global meaning system and the appraised meaning of their situation at hand are likely to experience less distress than those who do experience a significant discrepancy and are thus believed to experience resilience.

The model reflects the assertion that resilient individuals tend to report lower PTSD symptom severity as well as less growth through the origin, destination, and trajectory of the arrow representing resilience in Figure 1. Zoellner and Maercker's (2006) finding that pathological outcomes and growth-related outcomes tend to be negatively correlated further supports the model in that resilience and decline are essentially opposing outcomes.

Decline: Negative outcomes of wartime trauma. Decline, indicated by negative outcomes, is marked by distress and decreased or impaired functioning in important areas of one's life. A number of important areas have received attention as they relate to the meaning-making coping process, such as PTSD, combat stress response, drug and alcohol addiction, depression, suicide, and others. According to Van Der Kolk and Fisler (1995), the most important feature of PTSD is dissociation and the failure to integrate negatively appraised meanings into one's autobiographical narrative. Studies have shown that a person's negative appraisals of the trauma are related to higher PTSD severity (Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). Similarly, rape survivors who blocked or minimized their memories had higher levels of PTSD than those who were able to integrate their rape experiences into their sense of global meaning (Boeschen, Koss, Figueredo, & Coan, 2001). In two studies of assault survivors, Kleim and Ehlers (2009) found a curvilinear relationship between PTSD symptoms and self-reported PTG. Those reporting the highest growth also reported lower PTSD symptom severity, but those reporting moderate levels of growth also reported the highest levels of PTSD symptoms. This finding seems to indicate an interactive process between negative symptoms and growth after trauma, pointing to mediating influences from other factors. The proposed model asserts that meaning-making processes and the resulting meanings are related to this interaction.

Dasberg (1976) found that Vietnam veterans suffering from combat stress response reported the belief that everything in their life had become meaningless as a result of the severing of important social supports. Alcohol abuse in military populations is associated with psychological disorders such as PTSD, anxiety, and depression (Chilcoat & Breslau, 1998; Jacobson et al., 2008; McFarlane, 1998; Schuckit, Smith, & Chacko, 2006; Shipherd, Stafford, & Tanner, 2005; Swendsen et al., 1998). Suicide rates are disproportionately higher in veterans than in the general population (*Army Health Promotion Risk Reduction Suicide Prevention Report*, 2010). Price, Risk, Haden, Lewis, and Spitznagel (2004) further found that in their sample of 641 Vietnam veterans, prevalence rates of suicidality were higher in those who voluntarily

enlisted (23.7%) than in those who were drafted (6.9%). Although the reasons for this are not clear and deserve further investigation, voluntary service requires active personal agency and a sense of ownership, whereas being drafted may not carry this same burden.

Making the case for coconstruction of narratives in the treatment of PTSD, Bragin (2010) began with a literature review that spanned from World War I to 2008, highlighting the shortcomings and inadequacies of the current diagnostic criteria of PTSD and the overall lack of success of existing treatments. She discussed the importance of using the meanings associated with combat experience in the treatment of veterans who have suffered from decline after their wartime experiences. She then argued, supported by others (Shay, 2002), that during the reintegration process the necessarily changed worldview of the combat veteran comes into conflict with the surrounding social worldview that is dissociated from any adequate understanding of their combat experience. Returning combat veterans cannot share important meanings with others who cannot allow themselves to understand or comprehend the actual lived experiences they have faced. This social construction of meaning appears to be a main component of the onset and maintenance of PTSD and other negative outcomes after combat trauma.

If this is the case for the veteran experiencing decline, then the development of coconstructed meanings that include these combat experiences actually experienced by the veterans themselves should help those returning veterans feel reintegrated into society. This coconstructed meaning would be in contrast to the feeling of many combat veterans that they have become an aberration of society, unable to rejoin and become part of their communities again. These coconstructed meanings must be fostered at both the relationship and the societal levels. The preceding incomplete list of negative effects of trauma illustrates the role of inadequate meaning-making coping in negative processes and outcomes of combat trauma. The outcomes themselves, however, do not develop independently, and treatment of the combat veteran must take into account how others perceive the veteran during the reintegration process. Once survivors of combat trauma are able to share their experiences and begin to shed the need to dissociate from their extreme negative affect, they may be in a position to begin to find the sort of meaning in their experience that leads to growth.

Growth after wartime trauma. Although resilience is the ideal outcome after combat trauma, for those who do not fare as well initially (having their world assumptions shattered), the process of growth after trauma signifies a reaching toward resilience. Empirical research has shown that PTG is one possible outcome of the meaning-making coping process (Park, 2008), although the study of PTG after war is still lacking (Rosner & Powell, 2006). Four of the eight articles we found from the past decade that investigated PTG in combat veterans focused on individuals who had also been POWs (Dekel, Mandl, & Solomon, 2011; Erbes et al., 2005; Fedor et al., 2008; Solomon & Dekel, 2007). POWs have consistently been found to undergo positive growth after their experiences. The more negative the POW experience is, the greater the potential for PTG that exists (Erbes et al., 2005; Fedor et al., 2008). In their study of former Vietnam POWs, Fedor et al. (2008) found a strong correlation between optimism and PTG and also between positive religious coping and PTG, which is similar to the finding that resilience is also strongly positively correlated with

optimism and religious coping (Schok et al., 2010). Solomon and Dekel (2007) compared Israeli combatants who had been POWs with combatants who had not been POWs. POWs exhibited higher levels of both PTSD and PTG than other combatants. Perhaps the most significant of these articles is also the most recent (Dekel et al., 2011). Not only was Dekel et al.'s (2011) study longitudinal, but it also used hierarchical regression to identify factors that predict both PTG and PTSD. They found that active coping and emotional loss of control predicted both PTG and PTSD. In their study, self-controllability predicted PTG, whereas PTSD was uniquely predicted by age and education (with younger and less educated POWs reporting higher levels of PTSD), greater sense of suffering, and having an avoidant attachment style. These findings are consistent with the model in that having a sense of controllability would allow for one to effect the changes necessary for growth after trauma.

Elder and Clipp (1989) studied veterans from World War II, the Korean War, and the Vietnam War, longitudinally finding that veterans with heavy combat experience reported higher levels of emotional and behavior problems, but that over time, they became more resilient and less helpless than their light-combat and no-combat veteran peers, thus supporting the longitudinal view of the reappraisal process. This finding that PTG is a process that improves over time should warrant greater longitudinal investigation, which could reduce confusion over conflicting correlational research findings from the past decade.

Maguen et al. (2006) found military status, perceived threat, and social support to be related to PTG in veterans returning from the first Gulf War. They also found that predeployment variables had only a very small influence on the prediction of PTG.

Most recently, Lee, Luxton, Roger, and Gahm (2010) provided the first factor analysis of the PTGI with combat veterans. Their results indicated a good fit of both a multidimensional and a unidimensional measure of PTG in combat veterans, paving the way for future inquiry. Although we found no studies regarding the meaning-making process relevant to PTG with veteran populations, we have shown in the preceding sections that these three factors have been studied in pairs. What is needed is a focused effort on the part of researchers to bring these factors together. The proposed model was designed to do just that.

Discussion

Only eight empirical research articles in the past decade focused on PTG with veteran populations, four of which studied former POWs, an important but very small subset of combat veterans, and none of which specifically addressed the role of meaning-making processes related to PTG with combat veterans. This dearth of literature on such an important topic calls for more research and reinforces the need for a conceptual model to guide that research systematically.

A number of questions need to be answered, however. Are there different processes for different outcomes? Do the same processes lead to different outcomes depending on the meanings made as a result of those processes? How is the meaning-making process related to emotional processing, which has already been established as a core component of trauma recovery? Are certain variables directly or inversely related or, like PTG and PTSD, might they have a curvilinear relationship? How do these factors

interact to produce different outcomes in individuals who may have had the same traumatic experience? These important questions need to be answered systematically so that results can be compared across trajectories and meaningfully between studies.

Implications and Future Directions

The proposed model has implications for prevention, intervention, and future research. Prevention efforts stand to gain through improved resilience-building strategies resulting from a better understanding of the meaning-making coping process on the spectrum of outcomes of combat trauma. This gain can be accomplished by helping soldiers anticipate potential crises of meaning beforehand and by helping them understand potential strategies for addressing discrepancies of meaning when they occur. Further research in this area will help prepare families to be more understanding and to be more effective social supports, based on how their veterans are adjusting to life after war. Therapists and other helping professionals stand to gain by helping veterans understand their new mission of meaning reappraisal and how their process, in turn, affects and is affected by their families.

For veterans who do not respond with resilience, research based on the model should lead to improved efforts to understand the process of growth after an initial shattering of the world assumptions held by each veteran, helping those who are actively reappraising their experience as well as encouraging those on a more negative trajectory to consider such change. Because of the difficulty some veterans have in reconciling appraised meanings with global meanings, greater attention in this area should help clinicians to more effectively assist veterans in facing the difficult emotions and memories. Potential efforts at integration of meaning reappraisal strategies with existing cognitive-behavioral methods should be investigated for potential additive effects.

The proposed model will help disambiguate existing research on PTG and negative outcomes. Studies of PTG and negative outcomes such as PTSD have shown inconsistent correlations overall when measured linearly, but some have found a curvilinear relationship (Kleim & Ehlers, 2009), which might be a more appropriate way to view the connection between PTG and decline because a curvilinear relationship may indicate the presence of a third variable at work. Meaning making has been studied independently with each noted trajectory so as to link variables with specific trajectories. It has yet to be applied using trajectory or outcome as the dependent variable, allowing for a range of outcomes. This more complex view of PTG and negative outcomes deserves to be investigated further and replicated. Longitudinal research with pretrauma and posttrauma measures, followed by measures long after the combat deployment, while comparing PTG, resilience, and negative sequelae such as PTSD and depression levels would also be ideal. This research is difficult if not impossible to achieve with most trauma, but veterans are perfectly positioned for this type of research, especially those who voluntarily enlist during times of active military conflict. And yet, these studies have not been done.

Resilience, PTG, and negative outcomes such as PTSD, depression, and suicidality are typically studied individually, and at times together, but future research based on the proposed model could use resilience, PTG, and measures of negative sequelae as possible

outcomes to compare important mediating and moderating influences related to each of them.

Additionally, qualitative inquiry is also needed. By studying the differences in the meanings made (inherently qualitative constructs) for resilient, PTG, and pathological trajectories, the next wave of empirical research would be better informed. One question that remains to be investigated is whether the meanings held by resilient combat veterans are similar to those of veterans who were not initially resilient but had undergone significant PTG over time. Do systematic differences exist between resilient and negative outcomes? If so, what are they? Overall, this consolidation of trauma research should have a positive effect on the field as a whole, and validation of the model would also indicate the value of developing contextual models with other populations coping with different traumas.

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