
AUTHORS' RESPONSE

The Foundations of Posttraumatic Growth: New Considerations

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In response to comments on our model of posttraumatic growth, we consider the validity of reports of posttraumatic growth, appropriate methodology to use to assess posttraumatic growth, and its relation with other variables that appear to bear a resemblance to posttraumatic growth (e.g., well-being and psychological adjustment). The potentially important role of proximate and distal cultural factors is also addressed. Clinicians are encouraged to use interventions that facilitate posttraumatic growth with care, so as not to create expectations for posttraumatic growth in all trauma survivors, and to instead promote a respect for the difficulty of trauma recovery while allowing for the exploration of possibilities for various kinds of growth even in those who have suffered greatly.

The poet Ted Hughes described, in this way, the impact of the suicidal deaths of his two wives “I have an idea of these two episodes as giant steel doors shutting down over great parts of myself” (quoted in Allen, 2002, p. 12). In describing his response to the harrowing experience of being lost at sea for 18 hours, after his surfboard drifted on strong currents he could not fight, Jens Eventyr said, “I have a wonderful life and I really started to realize the value of people. It shuffles the deck—your priorities change and it’s like a whole new start” (quoted by Gelineau, 2003, p. 12). These are two examples of the range of responses to traumatic life events. The question of what determines the tendency of one person to take a perspective that emphasizes the loss, whereas another perceives gain, has attracted the attention of all of us who have written for this issue.

In what follows we address some of the broad issues that have been raised by the panel of distinguished scholars who so graciously agreed to write commentaries on our target article. First we examine issues related to the validity of the experience of posttraumatic growth, and related methodological matters. Second, we discuss the ways in which psychological adjustment and posttraumatic growth may, or may not be, related. Third, we examine concerns about the inclusion of facets of posttraumatic growth in clinical work. Fourth, we discuss the role of cultural factors in the understanding of posttraumatic growth. Finally, we examine some of the elements that may represent useful additions to our model of posttraumatic growth.

Validity of Reports of Posttraumatic Growth

The psychological struggle with traumatic events can include unambiguously negative psychological effects, but it may paradoxically also include highly meaningful outcomes. The responses to trauma can be viewed as including a sense of ambivalence (Neimeyer, this issue), having a Janus face (Maercker & Zoellner, this issue), or representing reversible figures (Janoff-Bulman, this issue). That is, the individual’s struggle with the aftermath of trauma can produce negative, positive, and perhaps more typically, a mixture of negative and positive experiences. For some individuals that experience may be mostly or exclusively negative, perhaps without the possibility of even a minimal experience of growth (Wortman, this issue). The data suggest, however, that a substantial proportion of trauma survivors report at least some positive changes arising from their struggle with the aftermath of trauma, although the severity of suffering may counterbalance whatever experience of positive change may have occurred (Calhoun & Tedeschi, 1999, 2001; Tedeschi & Calhoun, 1995; Wortman, this issue). Some survivors report that they later view the trauma as an event that added value to their lives through forced changes (Tedeschi & Calhoun, 1988), whereas others wish it could all be undone, given the sacrifices involved in achieving growth (Kushner, 1981).

Several of the commentators on our work mentioned that reports of posttraumatic growth should not be taken at face value because they may involve some form of defensive functioning (Aldwin & Levenson, this issue; Campbell, Brunell, & Foster, this issue; Maercker & Zoellner, this issue; Nolen-Hoeksema & Davis, this issue; Park, this issue; Stanton & Low, this issue). We have long argued that these concerns need to be considered. For example, prior to coining the term *posttraumatic growth*, we stated that "we should consider *whether the construal of benefits and the self-perception of growth simply represent another cognitive bias*, or is real (Tedeschi & Calhoun, 1995, p. 119, italics in original). We briefly address various ways that bias may enter, at least hypothetically, into reports of posttraumatic growth.

Social Desirability

Concern about self-enhancement or self-presentation is one reason that we decided to include the Marlowe-Crowne Social Desirability Scale (1960) in our validity studies on the Posttraumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996). Although the Marlowe-Crowne does not entirely sample various versions of psychological defense or self-enhancement that may be occurring with trauma survivors, we are heartened that there is no relation between this measure of social desirability and the PTGI (Tedeschi & Calhoun, 1996). Furthermore, when people report both distress and growth, this seems to be an indication that there is no substantial bias at work that involves simply whitewashing the traumatic aspects of life events.

Errors in Cognitive Reconstruction

We have previously cited (Tedeschi & Calhoun, 1995) the work of Ross and colleagues (1989; Wilson & Ross, 2001) that bears on the issue that sometimes self-enhancement may occur through reconstructive processes that involve a tendency to derogate past selves to maintain a favorable view of current selves. We assume, along with Neimeyer (this issue) and Pals and McAdams (this issue), that posttraumatic growth is the result of constructive cognitive processes, as are all other life experiences. Therefore, reports of posttraumatic growth are certainly prone to some degree of bias as much as reports of any other life experiences. All self-report measures carry the potential for error, and the PTGI is no exception. That said, there are reports that demonstrate that individuals encountering major crises may experience actual positive changes; for example, better adaptive emotional regulation (Znoj & Keller, 2002). Furthermore, posttraumatic growth has been confirmed by outside observers (Park,

Cohen, & Murch, 1996; Weiss, 2002), although there are aspects of posttraumatic growth that might be difficult for an observer to perceive, such as increased appreciation of life.

We assume that there are persons who are more prone to self-enhancing biases, and to errors in their self-reports, and it would be useful to see if we can establish ways of differentiating those whose reports of growth contain less error from those whose reports contain more. This is not a problem unique to posttraumatic growth, however. Every attempt to create self-reports involves these problems.

Downward Comparisons

When people compare themselves to others, and reach the conclusion that they are doing better than others (see Maercker & Zoellner, this issue), this may be a downward comparison or illusion, but it may also reflect a tendency to underestimate the strengths of others. This is something that has been apparent in the trauma literature, as we have argued, and may be a tendency that not only clinicians and researchers are prone to, but also affects lay persons. Downward comparisons, however, do not explain posttraumatic growth, because posttraumatic growth tends to be corroborated by others in the individual's proximate social network (Park et al., 1996; Weiss, 2002).

The Effects of Emotional Coping

Although there is a tradition in psychology of assuming that negative emotion produces defensive functioning, bias, distortion, and the like, there may be people who respond to trauma after being psychologically intact, who have the opposite kind of reaction. Highly emotional events in psychologically healthy people may produce less illusion and more wisdom. As Aldwin and Levenson (this issue) point out, and we have stated previously (Calhoun & Tedeschi, 1998), posttraumatic growth results from new information that is both intellectually and affectively grasped. The very emotionality of trauma may make some people less prone to bias rather than more prone. For example, we have often been struck in our work with bereaved parents, by the raw honesty of many of these parents, who are unable to muster attempts at impression management in the midst of their grief. We see them as people who are usually looking at themselves and their world with the blinders off. They may be less prone to cognitive bias.

The tendency to be less prone to bias may be especially true of people who were better able emotionally to absorb the trauma (i.e., those in the middle of the normal curve of adjustment). We have previously sug-

gested that persons with average levels of psychological adjustment might be fit enough to consider constructively changes that trauma has introduced into their lives. Persons with few psychological resources may be poorly equipped to do so, perhaps more prone to posttrauma symptoms, brittle psychological defenses, distortions, and the like. Persons at the highest level of psychological health may learn little that is new to them about the art of living well by suffering trauma (Tedeschi & Calhoun, 1995). Therefore, we might suggest that there are certain individuals who are more prone to biases in reports of posttraumatic growth, or that the cognitive constructions of posttraumatic growth vary according to person variables related to basic psychological health.

Effects of Subsequent Events and Interactions

Reports of growth may also change over time, as individuals are able to process the trauma, and as various other experiences occur to them in the aftermath of the trauma. For example, we began this reply with a quotation from a young surfer who was lost at sea. His growth declaration was recorded within hours of his ordeal. Depending on his experiences subsequently, he may see less growth or more in the future. Perhaps he will later see his initial response as one made from the euphoria of being rescued, and not having much reality to it. Or perhaps, because of his construction of events in a way that allows for posttraumatic growth, he may begin to behave in a fashion that further contributes to a sense of his own change. We can further imagine our surfer survivor returning to his wife and working harder to resolve things in his marriage that he said had been disturbing him. If his wife responds in kind, perhaps both will view his near-tragic surfing trip as a turning point in their lives. However, if his attempts to resolve marital problems are ill advised or met with coolness from his wife, perhaps there will be nothing positive that this couple will be able to see coming from the ordeal.

We believe that instead of simplistic arguments about whether or not posttraumatic growth is illusory, it will be more fruitful to consider the longer term consequences of developing a growth viewpoint. Different trajectories are possible that will sustain and enhance a posttraumatic growth perspective in some trauma survivors, whereas others may find this view fading over time. In the former, posttraumatic growth may appear to be more real, whereas in the latter it may seem to be more of an illusion. A recent report by Milam (in press) supports this view. In a large longitudinal study of persons with HIV, the researchers found groups in whom posttraumatic growth was stable, decreasing, or increasing over time. Furthermore, posttraumatic growth

tended to precede improvements in health-related behaviors. This study supports the idea that experiences of posttraumatic growth will depend on the degree to which the changed schemas can be enacted in behaviors that others notice, and the responses of those who come in contact with the trauma survivor (Weiss, 2002). The behavioral enactment of changed schemas may depend on personality factors that we have previously examined, especially certain aspects of extraversion, such as positive emotions, and activity level. The responses of others have to do with the cultural environment, discussed at more length later.

Posttraumatic Growth and Optimal Psychological Functioning

Another important, but still unanswered question, is the degree to which posttraumatic growth is or is not related to optimal psychological functioning (Park, this issue). To some extent, the question will produce distinctly different answers depending on how posttraumatic growth and optimal functioning are defined and operationalized. The articulation of posttraumatic growth we have proposed (Calhoun & Tedeschi, 1999, 2001; Tedeschi & Calhoun, 1995, this issue) focuses on what the available literature has suggested, and on changes experienced by individuals who have had to struggle with highly challenging events—events that we have metaphorically described as “seismic” (Calhoun & Tedeschi, 1998). We have proposed (Calhoun & Tedeschi, 1999; Tedeschi & Calhoun, 1995, 1996) that the experience of growth emerging from the struggle with major life difficulties can be successfully described by five major domains: seeing new possibilities, changed relationships, the paradoxical view of being both stronger yet more vulnerable, a greater appreciation for life, and changes in the individual’s spiritual and existential domain. Although these dimensions would appear to provide a useful general summary of growth, it is indeed possible that particular individuals may experience significant changes in their lives that do not readily fit within these broad comprehensive categories (McMillen, this issue; Pals & McAdams, this issue; Park; this issue). Researchers can simply ask a question about anything positive that happened that was not included on the PTGI as a way of getting at any other elements. We initially developed items for the PTGI that reflected the kinds of growth reported in the literature to that time and reported to us in qualitative studies. Through factor analysis, we reduced the number of scale items to a relatively few items that were still comprehensive. Some researchers have reported to us that they have gotten virtually no additional information about specific aspects of posttraumatic growth by asking open-ended growth questions in addition to the PTGI.

Of course, there may be quite idiosyncratic reports of growth related to aspects of an individual's situation after trauma. However, we do not believe that the concomitant occurrence of anything that might be construed as "positive" (McMillen, this issue) represents growth; the receipt of a large life insurance payment by a widow after the sudden death of her husband, for example, would not in our view, be considered growth, although it might be positive in the sense that the funds would certainly help provide for the welfare of the widow and her children. Any inventory designed to measure posttraumatic growth will be constrained by the content of the items originally generated for its development, and constrained further by which items remain after the usual psychometric processes for winnowing items is followed. However, the investigations, regardless of methodology (and as we have suggested, a variety of methods of investigation should be encouraged and welcomed), should focus on what seem to be the core characteristics of the phenomena we have called posttraumatic growth—the experience of positive change, which for some individuals appears to include radical personal transformations—that arises from the individual's struggle with highly challenging life demands. Whether growth is inaccurate or accurate (Lechner & Antoni, this issue), invalid or valid (Park, this issue), fake or genuine (Wortman, this issue), or illusory or constructive and self-transcending (Maercker & Zoellner, this issue), it may still have consequences for the individual's psychological functioning. It is an empirical question as to whether experienced growth will or will not have differing consequences for the individual depending on whether it is real or unreal (as defined by the criteria of modern psychological research). The available research does not permit an answer to the question of whether or not posttraumatic growth and mental health are routinely correlated. There are some ways, however, in which the question may be broadened to permit interesting possibilities that go beyond what the current research and theorizing have suggested.

How might the experience of posttraumatic growth be related to optimal psychological functioning? An obvious response is that the answer depends on what is meant by optimal functioning and how one decides to measure it. Clinicians and scholars currently employ a variety of concepts and measures to evaluate the impact of crisis generally, and its relation to posttraumatic growth in particular. Examples of some of these include well-being (Janoff-Bulman, this issue; Nolen-Hoeksema & Davis, this issue), adaptive consequences (Stanton & Low, this issue), beneficial physical outcomes and mental adjustment (Lechner & Antoni, this issue), adjustment (Park, this issue), and psychological adjustment (Maercker & Zoellner, this issue). A common theme to these ways of thinking about the individual's psychological functioning is a

utilitarian assumption (with which we would not necessarily disagree) that it is desirable when individuals have an increase in well-being and a decrease in psychological distress. To a large extent, this focus probably defines the central goal of most psychological interventions with persons who have experienced major life stressors—to help them feel greater levels of life satisfaction, quality of life, and well-being, on the one hand, and to help them feel less depressed, anxious, or generally distressed on the other hand. This view represents essentially what Ryan and Deci (2001) called a hedonic view.

However, it may be desirable to consider the possibility that the exclusive scholarly focus on psychological distress and well-being (particularly when measured exclusively by standardized inventories) in the struggle with trauma is insufficient. The examination of posttraumatic growth, perhaps as much as any other area of scholarly endeavor, raises questions about what it may mean to live optimally and to live well, in the aftermath of tragedy. For scholars and clinicians interested in how individuals can continue to live the fullest and most meaningful lives as they struggle with the aftermath of tragedy and loss, it may be useful to have a perspective that includes elements that go beyond the domains of well-being and distress. Our suggestion here represents a broadening of what Ryan and Deci (2001) called the eudaimonic point of view. It is clearly a discussion that goes well beyond the focus of this response, but we have a suggestion that may be worth making about the unrecognized conceptual restrictions that contemporary scholars (ourselves included) may bring to the task of understanding posttraumatic growth generally, and its relations to psychological adaptation or optimal living. These conceptual assumptions can represent examples of *la deformation professionnelle* that can fail to allow for, or actively inhibit, a broader, and perhaps more accurate understanding of the processes involved.

Subsequent studies of the relations between posttraumatic growth and adaptation to highly challenging life crises might usefully be extended in at least two ways. One important way is to examine the amount, content, and quality of cognitive processing in which individuals engage as they struggle with what has happened to them, and how these various elements and forms of cognitive processing are related to posttraumatic growth. The confrontation with great difficulties in life, perhaps including reminders of one's mortality (Wren-Lewis, this issue), can lead the individual to become actively engaged with issues related to a variety of questions that for many individuals have central and highly important significance—existential issues about purpose and meaning, self-assessments of the degree to which personality integration (Sheldon & Kasser, 1995) is evidenced by the degree to which one is living according to one's fundamental

values and goals (Carver & Scheier, 1998; Martin & Tesser, 1996), a reassessment of one's life priorities, and so on. The aftermath of trauma can also produce a constellation of intrusive cognitive processes that can include, but are not restricted to, elements directly related to the crisis. Perhaps after some time has passed and adaptive mechanisms have successfully led to a reduction in the severity of psychological suffering, individuals may engage in cognitive processing of what has happened in ways that are more deliberate, less automatic, and focused more on repair and accommodation of the assumptive world, and that may have more elements of anticipation. Maercker and Zoellner (this issue) appear to be focusing on this possibility by considering two dimensions of growth that may be time-related: an earlier illusory component and a later constructive component.

One major way, then, of expanding the perspectives within which posttraumatic growth is studied, is to assess comprehensively the wide array of forms and elements of cognitive processing that is common in persons adapting in the aftermath of trauma. The way individuals think and what individuals think about in the aftermath of trauma can be regarded as one important indicator of how well they are functioning psychologically. However, the full picture of the ways in which these cognitive processes are related to growth is still not clear and remains to be investigated.

A second way in which future studies of the relations between adjustment and growth might be extended is with the inclusion of broader evaluations of optimal psychological functioning. As we have indicated, much of the current work on adaptation to crisis is focused on assessing distress and well-being, elements that are surely important. However, future work might profitably include evaluations of additional elements that are typically not considered in current views of adjustment and adaptation. These are elements of optimal psychological functioning or of living life fully that many people may evidence when less restrictive forms of investigation (e.g., constructivist, narrative, storytelling, and accounts approaches as suggested by Harvey, Barnett, & Overstreet, this issue; Neimeyer, this issue; and Pals & McAdams, this issue) are included. Strictly psychometric and quantitative measurement strategies for them would be challenging, but the evaluation of the individuals' experience of meaning and purpose in life (Frankl, 1963), sense of fulfillment or self-actualization in life (Maslow, 1970, 1971), the degree to which the individual has virtuous qualities (recognizably a potentially impossible task), and the degree to which the individual has life wisdom (Aldwin & Levenson, this issue; Baltes & Freund, 2003) would do much to enhance the understanding of the processes and outcomes of the struggle with tragedy.

What we are suggesting is not something easy, and it is not new. However, we believe that investigations of growth and adaptation in the wake of major life crises could profitably be broadened to include a richer array of domains of optimal human functioning, and perhaps a wider assessment of growth that goes beyond the confines of inventories that by their very nature limit the domain being investigated.

Cultural Elements and Posttraumatic Growth

It seems reasonable to assume that the psychological processes involved in the individual's adaptation to life trauma and, in the process, posttraumatic growth are influenced by sociocultural factors. In the general model of posttraumatic growth we have proposed (Calhoun & Tedeschi, 1998; Tedeschi & Calhoun, this issue) the individual's proximate social network plays an important role. However, it is important to remember, as others have suggested (McMillen, this issue; Pals & McAdams, this issue; Park, this issue), that the process of posttraumatic growth and the responses of the individual's proximate social groups unfold within the context of even broader and more distal societal and cultural frameworks (Bloom, 1998; Tedeschi, 1999). For individuals in the United States, for example, the process of posttraumatic growth occurs within the framework of characteristically "American" narratives (Pals & McAdams, this issue). To the extent that the broader, but more distal, societal narratives or elements of "American" identity can be identified (McAdams, forthcoming), then investigators of posttraumatic growth could evaluate the degree to which elements of growth expressed by "American" individuals appear to be influenced, or at least have commonality with, the larger narratives, accounts, and constructions of the larger society. That broader understanding is highly desirable and important. That said, there is emerging evidence that non-American samples report posttraumatic growth. We are familiar with new research conducted in Bosnia (Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003), China (Ho, Chan, & Ho, 2003), Germany (Maercker & Zoellner, this issue), and Turkey (C. Kiliç, personal communication, March 19, 2003) that shows that this is not an exclusively American phenomenon. Even the factor structure of the PTGI looks similar in these other countries to that reported in American samples.

However, it is also important to take into account proximate cultural factors that are equally, and maybe in some ways more, important and highly fruitful lines of investigation to pursue. We suggest, for example, that personal interactions with others, particularly those others that have personal significance for the individual, are likely to have an important impact on if

and how the process of posttraumatic growth unfolds. When we include the broad, and perhaps insufficiently precise and insufficiently developed domain of social support in our model (Calhoun & Tedeschi, 1998; Tedeschi & Calhoun, 1995, this issue), we mean to include elements that may influence the process of adaptation and the possibilities of posttraumatic growth such as how friends and family members respond to disclosures about the crisis generally; the degree to which the individual's primary social groups do or do not, sensitively or thoughtlessly and insensitively, respond to intimations of growth that an individual may only hint at or may fully articulate; and the cultural idioms and assumptions that the proximate culture of the individual's primary reference groups employ to talk about the impact of trauma and how individuals respond to trauma. In another work (Tedeschi & Calhoun, 2004), we include a more comprehensive description of elements of the proximate cultural context that may be important to consider to better understand individuals' responses to loss.

A semantic emphasis on cultural factors currently seems to represent an important component of the current *Zeitgeist* in North America (American Psychological Association, 1993), particularly in psychology and the clinical professions. This is a welcome development, but it is not sufficient for psychologists and scholars from similar traditions, whose focus is on the responses of individuals or of small social units (e.g., parents, immediate family), to simply speak of culture as a source of influence. It is also necessary to do a variety of more specific and helpful things, including articulating the ways in which the conceptual abstraction of culture directly influences individuals; to identify the proximate sources of cultural influence; and to recommend appropriate methods for investigating the cultural factors that are assumed (correctly so) to be operating. To make this suggestion in the form of questions, what is meant by culture, how does it influence the process of posttraumatic growth, and what methods might one use to study those influences?

Applying the Concept of Posttraumatic Growth in Clinical Work

Persons traumatized by life events deserve our patience and empathy. Without these, we are not likely to be helpful in their recovery, because we will not take the sometimes considerable amount of time necessary to allow these clients to find safety with us, retell the story of their trauma, learn how their responses are understandable reactions to horrific situations, deal with social constraints in their erstwhile support systems, explore spiritual and existential concerns raised by the trauma, and accomplish other tasks common in the aftermath of trauma. Certainly it would be a travesty if

survivors of trauma came to feel inadequate and ashamed if they could not manage all of this and experience posttraumatic growth as well (Wortman, this issue). We have gone to great lengths in our writings to dispel the notion that we recommend that clinicians demand posttraumatic growth in trauma survivors, and because we wish nothing but the best for our clients, we need to take this opportunity to reiterate that. For example, in our book that outlined clinical interventions for posttraumatic growth (Calhoun & Tedeschi, 1999), we said:

We begin with the assumption that persons facing highly negative events will experience negative consequences. It is imperative that the clinician never forgets that suffering is almost always a consequence of trauma. (p. 10)

Individuals who experience posttraumatic growth may still continue to experience distress related to the traumatic event, and for some persons posttraumatic growth may require that some distress persist to serve as a continuing impetus to posttraumatic growth. (p. 22)

Particularly when dealing with events that are still overwhelming to the client, the focus needs to be on helping the client survive and manage basic coping tasks. This is clearly the case when the events are those that put individuals at risk for posttraumatic syndromes. For example, it may be quite a long time, if ever, that a young woman who is sexually abused can see any good coming out of her struggle with that negative set of circumstances. Posttraumatic growth can happen, in some ways, for some people who are victimized like this (Herman, 1992), but it would be a mistake, and a gross misunderstanding of our position, to assume that posttraumatic growth always happens.

When the events involve major personal losses, such as the death of an infant, or events that are in themselves repellent and incomprehensible, for example, the Holocaust, the client may interpret the experience of growth as a sign of disloyalty or a lack of moral principle. In these instances, the clinician must be extremely sensitive about when, or even *if*, to acknowledge, identify, or label the possible occurrence of posttraumatic growth. The individual may experience distress or revulsion at even the possibility that they could see growth arising from their struggle with that particular loss. But even when the events are tragic, our suggestion is that the clinician remain attuned to the possibility of growth. When the proper therapeutic relationship is in place, and if the client's own account provides evidence that growth is occurring, it will be useful gradually to bring it into focus for the client. (p. 65)

However, we have taken the position that for too long clinicians may have short-changed trauma survivors by focusing so closely on reducing symptoms of trauma, that they may have inadvertently failed to accompany clients as they reorder their lives. We are in

substantial agreement with Harvey et al. (this issue), Pals and McAdams (this issue), and Neimeyer (this issue) that the work of constructing narratives that accommodate the traumatic events can lead to profound changes in identity. Those engaged in clinical work with trauma survivors can well appreciate the difficulty and struggle involved in the client's attempt to process traumatic events. Although this may not be universal, it is more common than not. We are somewhat puzzled by the statement by Wortman (this issue) that she has "never heard a person who lost a spouse or a child" report that they were "lucky" (to have lost a loved one) or that that the death was the "best thing that ever happened to them" (although we have heard such accounts in other situations, as we highlighted in the target article). Because we have not heard such accounts about a death of a loved one either, we think that this comment represents an unfortunate misreading of our work in a fundamental way. We emphasize again that although some people in our research studies have offered similar descriptions about things that have happened (e.g., Tedeschi & Calhoun, 1988), what is much more important is that people are viewed as changed by the struggle that occurs in the aftermath of these events. It is what happens afterward, not the event itself, that is valued. This is especially the case with deaths of loved ones. A researcher who studies people with disabilities described it this way:

The point is, however, that appreciating a disability, giving it value, need not require that it be preferred in and of itself; just that its ramifying meaning is valued. Consider how often there is a strong positive reaction to a person who refuses to succumb to the limitations of a disability and instead is challenged to overcome and achieve. It is then that the disability, being viewed within a broader life context of a dauntless human spirit, becomes appreciated for what it signifies. Nevertheless, because the notion of disability is typically viewed in isolation from any valued context, such positive embedding will probably remain elusive in the way most people generally orient themselves to the meaning of disability. (Wright, 1989, p. 528)

Another issue raised by some commentators has to do with the search for meaning in the aftermath of trauma. In a clinical setting, we do not advise that the focus be on such an ambiguous concept when working with most clients. We believe this is also true for research studies. Although Wortman (this issue) and her colleagues were not able to find many people who reported finding meaning in their loss, we think that asking a question phrased in this way is quite different from asking about more specific aspects of posttraumatic growth, as we do when we use the PTGI or when we talk with people who have experienced major life stressors.

Some researchers (Park, this issue; Wortman, this issue) seem to equate a search for meaning with the

kind of cognitive processing that may produce posttraumatic growth. It is important to define carefully what this meaning making involves. We find Park's definition that trauma survivors "process this information cognitively in search of reducing the violation of their beliefs and goals" to be similar in some ways to our cognitive processing variable. However, we believe that few trauma survivors could make sense of a request to find meaning in what happened to them. Again, this is why we have developed the PTGI, to allow trauma survivors to report more specifically the changes they have noticed. This is why we have attempted in several publications to describe how to work sensitively in clinical settings, considering carefully the wording and timing of discussions of growth (Calhoun & Tedeschi, 1991, 1999, 2000, 2001; Tedeschi & Calhoun, 2004).

Our Model of Posttraumatic Growth Reconsidered

The concept of posttraumatic growth and the model we have been developing to describe this process (what you see in this issue is our third version, after Tedeschi & Calhoun, 1995 and Calhoun & Tedeschi, 1998) is meant to address just one avenue of growth: that emerging from the struggle with highly challenging life events. We recognize, of course, that people grow as a result of many factors, including maturational processes, stress, and perhaps positive events (Aldwin & Levenson, this issue), as well as from the struggle in the aftermath of trauma. We have documented growth in the absence of trauma (Tedeschi & Calhoun, 1996), and also have proposed that there are likely different versions of the growth process, including gradual versus abrupt changes (Calhoun & Tedeschi, 1998). Our model is an admittedly generalized description of a process of posttraumatic growth that probably has a variety of more specific trajectories. We recognize, as does McMillen (this issue), that a number of related constructs may be involved in posttraumatic growth, and we started our theoretical journey by reviewing these (Tedeschi & Calhoun, 1995). Now we are trying to be parsimonious by homing in on those variables that may carry most weight and exist at the intersection of a number of related constructs. In this section, we attempt to clarify the thinking on which our model is based, respond to some of the suggestions made by our colleagues, and consider how some of their ideas fit into our model.

First, we see indications that our model of posttraumatic growth is receiving empirical support, and remains a good starting point for investigating posttraumatic growth. We mentioned some of these studies in the target article of this issue, and there are

others. For example, other researchers in the area of grief and loss have also reported findings in agreement with our model. Using structural equation modeling, Hogan and Schmidt (2002) reported two pathways to growth from parental grief. One is a direct, inverse relation between grief and growth, whereas the other proceeds from grief to intrusive thoughts, feelings, and images (automatic cognitive processing), to avoidance, to seeking social support, and finally to growth. Another study of bereaved parents by Znoj and Keller (2002) showed that these parents demonstrated better emotional regulation capacities than controls, although also showing more tendencies toward avoidance. Just as in the Hogan and Schmidt (2002) study, bereaved parents who experienced high degrees of intrusion sought people with whom to disclose their emotions. Therefore, we see significant support in these studies that growth occurs in the terrible trauma of parental bereavement, and that variables such as cognitive processing, emotional coping, and disclosure within supportive relationships are related to posttraumatic growth in the ways we have suggested. Working within this framework that has been receiving empirical support, we wish to consider some of the suggestions of the commentators in this issue.

To anyone familiar with our work, it is apparent that we owe a great debt to the ideas of Janoff-Bulman (and also Parkes, 1971, and Epstein, 1990), who has had much to say about how reconstruction of worldviews occurs in trauma survivors. We base our concept about what is traumatic on her ideas—that it is not the event itself that defines trauma, but its affect on schemas, exposing them to reconstruction. (This is one reason why we differ from Park in using the term posttraumatic growth rather than stress-related growth). We are grateful that she has offered some ways to further understand how posttraumatic growth occurs in persons who are coping with trauma (Janoff-Bulman, this issue). We agree with her conceptualization that it is useful to consider the five factors of the PTGI separately in understanding posttraumatic growth. For example, a person who cites personal strength as an aspect of growth may be quite different from one who cites spiritual development. It may be that the former was able to cope with trauma by exerting some control whereas the latter was faced with a greater need to acknowledge an absence of control. Or, a person citing relating to others as an area of change might have felt more need to self-disclose due to intrusive thoughts and feelings that they sought to regulate in this way. We have previously reported that the five factors relate differently to certain personality variables (e.g., openness to experience is correlated with the new possibilities and personal strength factors of the PTGI only; Tedeschi & Calhoun, 1996). As we mentioned in the target article, different factors of posttraumatic growth appear to be related to cognitive processing in different ways (Calhoun, Tedeschi, Fulmer, & Harlan, 2000).

Janoff-Bulman (this issue) suggests that change in the personal strength factor may not involve schema reconstruction. Perhaps this is what Hogan and Schmidt (2002) found with their direct path between grief and growth, mentioned earlier, but we cannot determine the specifics of the growth from their report. On the other hand, we suggest that an existing construct of strength may be applied differently posttrauma—"I am one of the survivors, the strong ones," as opposed to those who have never been tested in this way.

We are also intrigued by Janoff-Bulman's suggestion that there is a psychological preparedness aspect to posttraumatic growth. We have talked elsewhere about the recognition of vulnerability and strength as one of the paradoxes of posttraumatic growth (Calhoun & Tedeschi, 1999; Tedeschi, 1999). It appears to us that the items of the PTGI may get at the preparedness aspect through the personal strength factor (e.g., "knowing I can handle difficulties"), although this is a somewhat different issue than the awareness that one is vulnerable to the difficulties in the first place. However, in general, we are in agreement that the paradoxical nature of posttraumatic growth is what is so fundamental to understand to appreciate the cognitive and emotional struggles of trauma survivors.

A small study we did with older adults illustrates the ways paradox can appear in the worldviews of trauma survivors. Participants reporting more posttraumatic growth tended to see the world as responding to their control while also seeing themselves as unlucky. This group also perceived that events were distributed justly (Tedeschi, Calhoun, & Cooper, 2000). This study of older adults and posttraumatic growth also bears on the issues raised by Aldwin and Levenson (this issue) as they take a developmental perspective on posttraumatic growth. The findings that older adults report that they were unlucky, yet had some control over events that are perceived to be distributed justly may be the kind of paradox seen in people with the gerotranscendence (or wisdom?) that Aldwin and Levenson (this issue) describe. It strikes us that this variable may represent people who are able to see beyond illusion. We do not know whether this way of experiencing the world allowed for a reconstruction of events as posttraumatic growth, or vice versa, or if this is a recursive process where one builds on the other. We found that the posttraumatic growth group in this study tended to ruminate more about the events that had occurred, and perhaps this is some indication of such a process.

We find the suggestions of Stanton and Low (this issue) to be quite useful as they write about posttraumatic growth as resulting from factors other than trauma-induced distress, schema disruption, and cognitive processing. They suggest personality attributes and positive emotions are also important. Indeed, in our PTGI validation study (Tedeschi & Calhoun, 1996), we reported

that facets of extraversion, specifically positive emotions and activity, openness to feelings, and optimism, had relations to posttraumatic growth (Tedeschi & Calhoun, 1996). It will be important to consider carefully how these variables are defined in clarifying their relations to posttraumatic growth. For example, Milam (in press), using a modification of optimism that excludes benefit finding, found that optimism does not predict posttraumatic growth over time.

Given the importance we place on cognitive and emotional processing of trauma, we have been considering the possibility that certain person variables related to cognitive complexity, processing of novel information, and ability to think dialectically may be of importance to consider (Calhoun & Tedeschi, 1998). It will be important to raise the visibility of these variables in our model, and especially encourage researchers to look at how certain person variables may set in motion somewhat different trajectories of posttraumatic growth.

Generally, a longitudinal perspective on the process by which various kinds of individuals move from traumatic events to posttraumatic growth will yield insights into many of the questions raised in this discussion of posttraumatic growth. We might expect different pathways to growth based on the various factors in the PTGI and person variables. During the process of the development of posttraumatic growth, we may see different relations between posttraumatic growth reports and adjustment at different times in the aftermath of trauma. For example, perhaps reports of posttraumatic growth immediately posttrauma may correlate with poorer adjustment later. Similarly, an initial "illusory growth" may later relate to "constructive growth" (as suggested by Nolen-Hoeksema & Davis, this issue). It will be useful to consider the effects of other life events in addition to a particular trauma—the pile-up of events (Harvey et al., this issue). As we have discussed for many years (Tedeschi & Calhoun, 1995), coping processes are important (Aldwin & Levenson, this issue), and although posttraumatic growth is not simply coping, coping success is probably crucial in the process of growth.

As we consider these variables in longitudinal analyses of posttraumatic growth, it will be important to be careful about semantics and equating concepts. For example, the "brooding" mentioned by Nolen-Hoeksema and Davis (this issue) is not likely the same as the deliberate processing of posttraumatic growth that we have discussed. Their term carries the connotation of the sort of self-defeating thinking that they describe in their conceptions of rumination, whereas we emphasize cognitive processing that is essentially creative—it leads to the creation of new and useful schematic structures. The term *rumination* has taken on an almost exclusively negative connotation, at least among psychologists in the United

States, influenced perhaps by research that focuses on the impact of depressogenic thought processes. Therefore, we have begun to use the terms *cognitive processing* or *cognitive engagement* more recently, in search of words with neutral connotations (Calhoun, 2003; Tedeschi & Calhoun, 2003), to label what is meant by the word *rumination* in common English usage (i.e., to turn over something in the mind, to ponder, or to meditate on).

Conclusions

We are struck by the fact that all the pages devoted to this exploration of the concept of posttraumatic growth in this special issue still leave us with an evolving literature to be integrated, a model to be further developed, many hypotheses to be honed and tested, and some challenging studies to be designed and implemented. However, it is heartening that we have established a concept, and a broadly accepted term, *posttraumatic growth*, under which these efforts can go forward. When we published our first book on this issue in 1995, we sought to create a field of study out of the pieces of trauma literature in religion, philosophy, psychology, medicine, and other fields. We are gratified that this area of inquiry now exists, so that we can gather together a substantial group of researchers and have a firm basis for exchanging ideas. It is also gratifying that since our previous attempt to gather contributors to this field (Tedeschi, Park, & Calhoun, 1998b), several important studies have been completed, and theory development is proceeding. In the years since, attention has once again been redirected toward "positive psychology" (Seligman & Csikszentmihalyi, 2000) and applications of the concept of resilience to trauma survivors have increased. It will be important to demonstrate relations with these other concepts while clearly distinguishing posttraumatic growth from them. We have been attempting to be clear about how posttraumatic growth is distinctive in previous writings (Tedeschi & Calhoun, 1995; Tedeschi, Park, & Calhoun, 1998a), but this will be an ongoing process.

We hope that we can work together with the other contributors to this issue in encouraging the development of this field, and bringing it to the wider audience of scholars and clinical workers. We remain committed to the goal of including growth concepts in all studies of trauma survivors, so that this important aspect of their experience is never excluded from attempts to understand what has happened to them, nor from attempts to help them cope with the aftermath of tragedy and loss.

Note

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References

- Allen, B. (2002, February 3). In Sylvia's shadow [Review of Ted Hughes]. *The New York Times Book Review*, p. 12.
- American Psychological Association. (1993). Guidelines for providers of psychological services to ethnic, linguistic, and culturally diverse populations. *American Psychologist*, 48, 45-48.
- Baltes, P. B., & Freund, A. M. (2003). Human strengths as the orchestration of wisdom and selective optimization with compensation. In L. G. Aspinwall & U. M. Staudinger (Eds.), *The psychology of human strengths* (pp. 23-35). Washington, DC: American Psychological Association.
- Bloom, S. L. (1998). By the crowd they have been broken, by the crowd they shall be healed: The social transformation of trauma. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive changes in the aftermath of crisis* (pp. 179-213). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Calhoun, L. G. (2003, May). *Tempered by the fire: Personal posttraumatic growth*. Invited address presented at the Eighth European Conference on Traumatic Stress, Berlin, Germany.
- Calhoun, L. G., & Tedeschi, R. G. (1991). Perceiving benefits in traumatic events: Some issues for practicing psychologists. *Journal of Training & Practice in Professional Psychology*, 5, 45-52.
- Calhoun, L. G., & Tedeschi, R. G. (1998). Posttraumatic growth: Future directions. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive change in the aftermath of crisis* (pp. 215-238). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Calhoun, L. G., & Tedeschi, R. G. (1999). *Facilitating posttraumatic growth: A clinician's guide*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Calhoun, L. G., & Tedeschi, R. G. (2000). Early posttraumatic interventions: Facilitating possibilities for growth. In J. M. Volanti, D. Paton, & C. Dunning (Eds.), *Posttraumatic stress intervention: Challenges, issues, and perspectives* (pp. 135-152). Springfield, IL: Thomas.
- Calhoun, L. G., & Tedeschi, R. G. (2001). Posttraumatic growth: The positive lessons of loss. In R. A. Neimeyer (Ed.), *Meaning reconstruction and the experience of loss* (pp. 157-172). Washington, DC: American Psychological Association.
- Calhoun, L. G., Tedeschi, R. G., Fulmer, D., & Harlan, D. (2000, August). *Parental bereavement, rumination, and posttraumatic growth*. Poster presented at the meeting of the American Psychological Association, Washington, DC.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, 24, 349-357.
- Epstein, S. (1990). The self-concept, the traumatic neurosis, and the structure of personality. In D. J. Ozer, J. M. Healy, & A. J. Stewart (Eds.), *Perspectives in personality* (Vol. 3, pp. 63-98). London: Jessica Kingsley.
- Frankl, V. E. (1963). *Man's search for meaning*. New York: Pocket Books.
- Gelineau, K. (2003, April 7). Surfer lost at sea finds new life after survival. *The Charlotte Observer*, p. 2A.
- Herman, J. L. (1992). *Trauma and recovery*. New York: Basic Books.
- Ho, S. M. Y., Chan, C. L. W., & Ho, R. T. H. (2003). *Post-cancer growth in Chinese*. Manuscript under review.
- Hogan, N. S., & Schmidt, L. A. (2002). Testing the grief to personal growth model using structural equation modeling. *Death Studies*, 26, 615-634.
- Kushner, H. S. (1981). *When bad things happen to good people*. New York: Avon.
- Martin, L. L., & Tesser, A. (1996). Clarifying our thoughts. In R. S. Wyer (Ed.), *Ruminative thought: Advances in social cognition* (Vol. 9, pp. 189-209). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Maslow, A. H. (1970). *Motivation and personality*. New York: Harper.
- Maslow, A. H. (1971). *The further reaches of human nature*. New York: Viking.
- McAdams, D. P. (in press). *The redemptive self: A narrative psychology of American identity*. New York: Oxford.
- Milam, J. E. (in press). Posttraumatic growth among HIV/AIDS patients. *Journal of Applied Social Psychology*.
- Park, C. L., Cohen, L., & Murch, R. (1996). Assessment and prediction of stress-related growth. *Journal of Personality*, 64, 71-105.
- Parkes, C. M. (1971). Psycho-social transitions: A field for Study. *Social Science and Medicine*, 5, 101-115.
- Powell, S., Rosner, R., Butollo, W., Tedeschi, R. G., & Calhoun, L. G. (2003). Posttraumatic growth after war: A study with former refugees and displaced people in Sarajevo. *Journal of Clinical Psychology*, 59, 71-83.
- Ross, M. (1989). Relation of implicit theories to the construction of personal histories. *Psychological Review*, 96, 341-357.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaemonic well-being. *Annual Review of Psychology*, 52, 141-166.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, 55, 5-14.
- Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology*, 68, 531-543.
- Tedeschi, R. G. (1999). Violence transformed: Posttraumatic growth in survivors and societies. *Aggression and Violent Behavior: A Review Journal*, 4, 319-341.
- Tedeschi, R. G., & Calhoun, L. G. (1988, August). *Perceived benefits in coping with physical handicaps*. Paper presented at the meeting of the American Psychological Association, Atlanta, GA.
- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9, 455-471.
- Tedeschi, R. G., & Calhoun, L. G. (2003). Routes to posttraumatic growth through cognitive processing. In D. Paton, J. M. Volanti, & L. M. Smith (Eds.), *Promoting capabilities to manage posttraumatic stress* (pp. 12-26). Springfield, IL: Thomas.
- Tedeschi, R. G., & Calhoun, L. G. (2004). *Helping the bereaved parent: A clinician's handbook*. Philadelphia: Brunner-Routledge.
- Tedeschi, R. G., Calhoun, L. G., & Cooper, L. (2000, August). *Rumination and posttraumatic growth in older adults*. Paper presented at the meeting of the American Psychological Association, Washington, DC.
- Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (1998a). Posttraumatic growth: Conceptual issues. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive changes in the aftermath of crisis* (pp. 1-22). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (Eds.). (1998b). *Posttraumatic growth: Positive changes in the aftermath of crisis*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Weiss, T. (2002). Posttraumatic growth in women with breast cancer and their husbands: An intersubjective validation study. *Journal of Psychosocial Oncology*, 20, 65-80.
- Wilson, A. E., & Ross, M. (2001). From chump to champ: People's appraisals of their earlier and present selves. *Journal of Personality and Social Psychology*, 80, 572-584.
- Wright, B. A. (1989). Extension of Heider's ideas to rehabilitation psychology. *American Psychologist*, 44, 525-528.
- Znoj, H. J., & Keller, D. (2002). Mourning parents: Considering safeguards and their relation to health. *Death Studies*, 26, 545-565.