

CHAPTER

1

THE FOUNDATIONS OF POSTTRAUMATIC GROWTH: AN EXPANDED FRAMEWORK

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HANDBOOK OF POSTTRAUMATIC GROWTH RESEARCH AND PRACTICE

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Without a bit of sadness

A beautiful samba cannot be made.

—Vinicius de Moraes and Baden Powell

“Samba da Benção” [translation]

The idea that difficult life struggles can lead human beings to change, sometimes in radically positive ways, is neither recent nor something that was “discovered” by social and behavioral researchers or clinicians. As we and others (Saakvitne, Tennen, & Affleck, 1998; Tedeschi & Calhoun, 1995) have indicated the assumption that, at least for some people, an encounter with trauma,¹ which may contain elements of great suffering and loss, can lead to highly positive changes in the individual is ancient and widespread.

The possibilities for growth from the struggle with suffering and crisis is a theme that is present in ancient literature and philosophy and, at least in some ways, the problem of human suffering is central to much of both ancient and contemporary religious thinking.

For example, the origins of Buddhism are said to lie in the attempts by the prince Siddhartha Gautama to come to terms with human suffering and the inevitability of human mortality. Christianity, in most of its branches, regards the suffering of Jesus as a central and important event that has saving consequences for human beings. Some Islamic traditions also view suffering, at least in some circumstances, as a means for better preparing oneself for the

¹As we have elsewhere (e.g., Calhoun & Tedeschi, 1999; Tedeschi & Calhoun, 2004), we use the terms *trauma*, *crisis*, *major stressor*, and related terms as essentially synonymous expressions to describe circumstances that significantly challenge or invalidate important components of the individual's assumptive world.

“journey heavenward.” In a similar vein, the cathartic or transformative consequences of human suffering are themes in Greek tragedy. Literature throughout the world for a few thousand years, in all its various forms, has attempted to come to grips with the possibilities for meaning and change emerging from the struggle with tragedy, suffering, and loss. The idea that the individual’s encounter and struggle with life trauma can lead to significant growth is not new.

What is of relatively recent vintage, however, is the systematic focus by scholars in the fields of psychology, counseling, psychiatry, social work, and others, on the phenomenon of posttraumatic growth (PTG), using the best tools of contemporary quantitative and qualitative research. There were clearly major pioneers who addressed the possibility of growth from the encounter with loss in the 20th century including Caplan (1964), Dohrenwend (1978), Frankl (1963), Maslow (1954), and Yalom (1980). Although there were some preliminary investigations focused on this domain (e.g., Finkel, 1975) and some findings showing the possibility for positive outcomes arising from the encounter with negative events (e.g., Cella & Tross, 1986; the work of Tennen & Affleck and colleagues beginning in the 1980s), the systematic attention to trauma-related positive change has occurred only in the past 15 to 20 years.

From our point of view, several significant elements came together at about the same time to encourage clinicians and researchers to begin to focus on growth per se. For example, Jeanne Schaefer and Rudolph Moos (1992) wrote a chapter on crisis and personal growth; Virginia O’Leary and Jeanette Ickovics (1995) published a paper on “resilience and thriving in response to challenge”; Crystal Park, Lawrence Cohen, and Renee Murch (1996) published their findings and introduced their measure of stress-related growth; and we published the first book (Tedeschi & Calhoun, 1995) looking specifically at the phenomenon of positive change arising from the encounter with trauma from the point of view of the social and behavioral sciences. We also reported on the development of our own scale, the Posttraumatic Growth Inventory (PTGI) (1996). By mid-2005, a search using the PsychInfo system of the American Psychological Association produced 92 sources on “posttraumatic growth” and 33 on “stress-related growth” (with a bit of overlap, as one would expect). Clearly, much has been done since the earlier publications that focused explicitly on the phenomenon of growth, or the perception of benefits, associated with the struggle with highly difficult life events.

Although perhaps unnecessary, it is appropriate to remember that many, perhaps most, persons who experience severe life stress tend to report a variety of negative psychological and physical troubles that have been well documented and are now widely known. The focus on the possibilities for growth in coping with trauma can provide the opportunity for the erroneous conclusion that by trying to understand the positive, investigators are ignoring the negative. They are not. Negative events tend to produce, for most persons, consequences that are negative. But, paradoxically, the data indicate that for many persons the encounter with very negative events can also produce positive psychological change. In this chapter, we will provide a general overview of PTG, discuss whether it is “useful” or not, provide a description of modifications of our model of the process of PTG, discuss the threshold for calling changes “growth,” and conclude with a discussion of the future of work on posttraumatic growth.

THE EXPERIENCE OF GROWTH: A BRIEF LOOK

As Park and Lechner (this volume) clearly indicate, the statistical delineation of the factors that comprise PTG remains an area that still requires investigation. However, the suggestive

quantitative data available and the accounts of persons who have experienced trauma provide a good source from which to infer the major domains of the experience of growth. We first used qualitative data to discern the broad categories of growth (Tedeschi & Calhoun, 1995) that we divided into three general domains: changes in the perception of self, changes in the experience of relationships with others, and changes in one's general philosophy of life. Subsequently (Tedeschi & Calhoun, 1996), factor analysis yielded a five-factor approach to PTG, although there can be changes beyond this common core that are quite specific to the struggle with particular stressors (e.g., healthier eating habits adopted in the aftermath of a battle with cancer). These five domains are personal strength, new possibilities, relating to others, appreciation of life, and spiritual change. We will address issues of measurement more fully later in this chapter.



Changed Perception of Self: Strength and New Possibilities

The phrase that we have used often to summarize this area of growth is *vulnerable yet stronger*, or in the complete sentence, *I am more vulnerable than I thought, but much stronger than I ever imagined*. The threat to the assumptive world presented by the major crisis can produce cognitive responses that are now well known. Typically there are also changes in self-perception reflecting a significant disruption of the assumptive world (see Janoff-Bulman, 1992, this volume). One of these common changes is the experience of one's world as more dangerous, unpredictable, a world in which one's own vulnerability becomes clear and salient. The encounter with a major life challenge can also include an increased sense that one has been tested, weighed in the balance, and found to be a person who has survived the worst, suggesting that one is indeed quite strong. As one bereaved parent has told us: *I've been through the absolute worst that I know. And no matter what happens, I'll be able to deal with it.*



Some persons also report the emergence of new possibilities in life, developing new interests, new activities, and perhaps embarking on significant new paths in life. One of the persons who talked to us about her experience with loss embarked on a career in oncology nursing as a result of the death of her own child.

Relating to Others

It is clear that times of trial in life can produce the waning, loss, and sometimes the destruction of important relationships, but the consequences of coping with trauma can also include significant changes in human relationships that the individual can experience as highly positive. One of these changes occurs in how the person who has experienced the crisis views other human beings. At least at the experiential level, respondents have often told us about how, as a result of their own experience with loss and tragedy, they feel a greater connection to other people in general, particularly an increased sense of compassion for other persons who suffer.

This sense of increased compassion may lead to an increased sense that, in John Donne's well-known phrase, they are not islands, but indeed "part of the main" of those who suffer. It remains an empirical question as to whether or not this increased experience of compassion translates into a greater degree or frequency of altruistic acts, but our qualitative data suggest that, at least for others, this may indeed be the case.

A greater sense of intimacy, closeness, and freedom to be oneself, disclosing even socially undesirable elements of oneself or one's experience are also reported by persons who have struggled with traumatic events. This increased sense is sometimes viewed as a

double-edged sword—you find out who your real friends are and those that stay you get a lot closer to. Although not always, family members do report a greater sense of intimate closeness in the process of dealing with the terminal illness or with the death of a beloved family member.

Changed Philosophy of Life: Priorities, Appreciation, and Spirituality

A changed sense of what is of most importance is one of the elements of a changed philosophy of life that individuals can experience as PTG. The goal of amassing a million dollar stock portfolio, for example, may become much less important than the relationship with one's family, when the possibility of loss of one's life exists in the struggle with cancer. A common way in which the change of priorities is experienced is that what previously was viewed as a small thing, the happy giggle of a toddler, for example, may now become much more important than ever before.

A greater appreciation for life and for what one actually has and a changed sense of the priorities of the central elements of life are common experiences of persons dealing with crisis. "We [now] realize that life is precious and that we don't take each other for granted" was how one bereaved parent put it. Or as Hamilton Jordan put it (Jordan, 2000, p. 216), describing his diagnosis with multiple cancers, "Even the smallest joys in life took on a special meaning." The same kinds of goals and objectives that seemed so important before the crisis recede in importance, and others attain much greater significance. Although the specifics are different for different persons, a common theme is the articulation of greater meaning being found in intrinsically important priorities (e.g., spending time with one's children) and less importance being attached to extrinsic priorities (e.g., making lots of money).

It is in the realm of existential and, for some persons, of spiritual or religious matters that the most significant PTG may be experienced. The time frame in which the positive transformations in the existential or spiritual domain occur may vary, with some persons experiencing changes in this area much sooner in the posttraumatic period than others. Indications are that the trajectories may be quite different, even when the quality or content of the experiences are similar. The experiences that comprise this domain tend to reflect a greater sense of purpose and meaning in life, greater satisfaction, and perhaps clarity with the answers given to the fundamental existential questions. For some persons, the experience can include deeply meaningful spiritual elements. Although many persons report significant PTG in their philosophies of life, it is also true that great loss and senseless tragedy can lead others to lose faith and experience significant existential despair. This later kind of experience, however, does not predominate in the sample of persons studied in the United States (Tedeschi & Calhoun, 2004) because the reports of positive religious change are not uncommon for them.

It is not yet entirely clear the degree to which the religious dimension of PTG is relevant to countries that are significantly more secular than the United States. Hans Znoj and Andreas Maercker, for example, (personal communications, November 11, 2004 and May 24, 2003, respectively) have suggested that questions inquiring about the impact of trauma on religious elements are viewed as irrelevant, and perhaps even somewhat offensive by at least some, perhaps many, European participants.

Although a strictly religious component of this domain may not be relevant in some contexts, the more general arena of confrontation with existential questions about life's purpose appears to be important for many persons coping with major life crises, and this is a domain in which a significant number may report positive change.

WHAT GOOD IS POSTTRAUMATIC GROWTH?

The experience of persons who have struggled with crisis indicates that many of them undergo changes that they regard as highly positive. Although some report that they would not undo the crisis and return to the way things were before the event, because of the positive changes they have undergone, others, and we might assume they would be a majority, would indeed give up all of the positive changes if they could simply recover what had been lost. This view is clearly reflected in Kushner's words:

I am a more sensitive person, a more effective pastor, a more sympathetic counselor because of Aaron's life and death than I would ever have been without it. And I would give up all of those gains in a second if I could have my son back. If I could choose. . . . But I cannot choose. (Quoted in Viorst, 1986, p. 295)

One of the important questions that can be usefully answered with quantitative data is what is the relationship between PTG and adjustment? As we have suggested (Calhoun & Tedeschi, 2004), the answer depends in part on the general approach that is taken to define and measure adjustment. In the United States, scholars and clinicians tend to favor a utilitarian view, one that regards a decrease in distress and an increase in psychological well-being as the desirable outcome for persons who have faced highly stressful events. As practicing clinicians ourselves, this hedonic (Ryan & Deci, 2001) goal seems desirable for persons who are experiencing psychological discomfort.

However, in understanding persons struggling with the aftermath of trauma, it may also be desirable to broaden the perspective. The satisfactory engagement with and, for many persons who have struggled with trauma, the satisfactory response to the major existential questions and to the questions about how to live one's life in the fullest way possible, may be more important than the reduction of psychological discomfort. Reducing distress and thinking deeply about how best to live are not mutually exclusive possibilities, but they are not always likely to correlate either.

The data on the relationship between distress and growth are mixed, with some studies indicating that benefit finding and PTG may have negative relationships to measures of general well-being and distress (Cadell, Regehr, & Hemsworth, 2003; Lev-Wiesel & Amir, this volume; Tomich & Helgeson, 2004). Posttraumatic growth, then, may not necessarily be "good" from a utilitarian perspective—the presence of PTG may not necessarily be accompanied by greater well-being and less distress. However, if the perspective is broadened, the data do seem to suggest that the presence of PTG is an indication that persons who experience it are living life in ways that, at least from their point of view, are fuller, richer, and perhaps more meaningful. But that richer life may come at the price of the discomfort that tragedy and loss almost always produce. As one version of Samuel Johnson's familiar quote says, "The prospect of death wonderfully clarifies things." Perhaps we could say the same, at least for some people, about major life crises. However, the "clarification of things," may not result in a decrease in psychological distress. The encounter with trauma may indeed produce growth, but it also tends to produce significant pain. If an exclusively utilitarian, hedonic view of posttraumatic adjustment is taken, the price that may be required for the newfound perspective on life may not be worth it. The experience of a traumatic set of circumstances usually produces distress, disrupts one's understanding of the world, makes salient one's vulnerabilities and lack of power and control, and may make more salient one's mortality. These disruptions and reminders tend

not to be pleasant, but they may lead to richer and more purpose-filled lives. However, the experience of increased meaning may be concomitant with less psychological comfort.

After we discuss the process of PTG, we will return to this question of the usefulness of the experience and refer to some of the ideas of Ronnie Janoff-Bulman. She posits that PTG can create “psychological preparedness” that can allow trauma survivors to confront subsequent events with less anxiety. Therefore, the relationship between PTG and distress in the aftermath of trauma may be mixed because there are various kinds of outcomes that are possible, including the “sadder but wiser” and the “better prepared.”

HOW DOES POSTTRAUMATIC GROWTH OCCUR?

We have already articulated our general model of the process of PTG elsewhere (Calhoun & Tedeschi, 1998; Tedeschi & Calhoun, 2004). Here, we will provide only a brief description of the general components, along with a slightly updated schematic (see Fig. 1.1). We

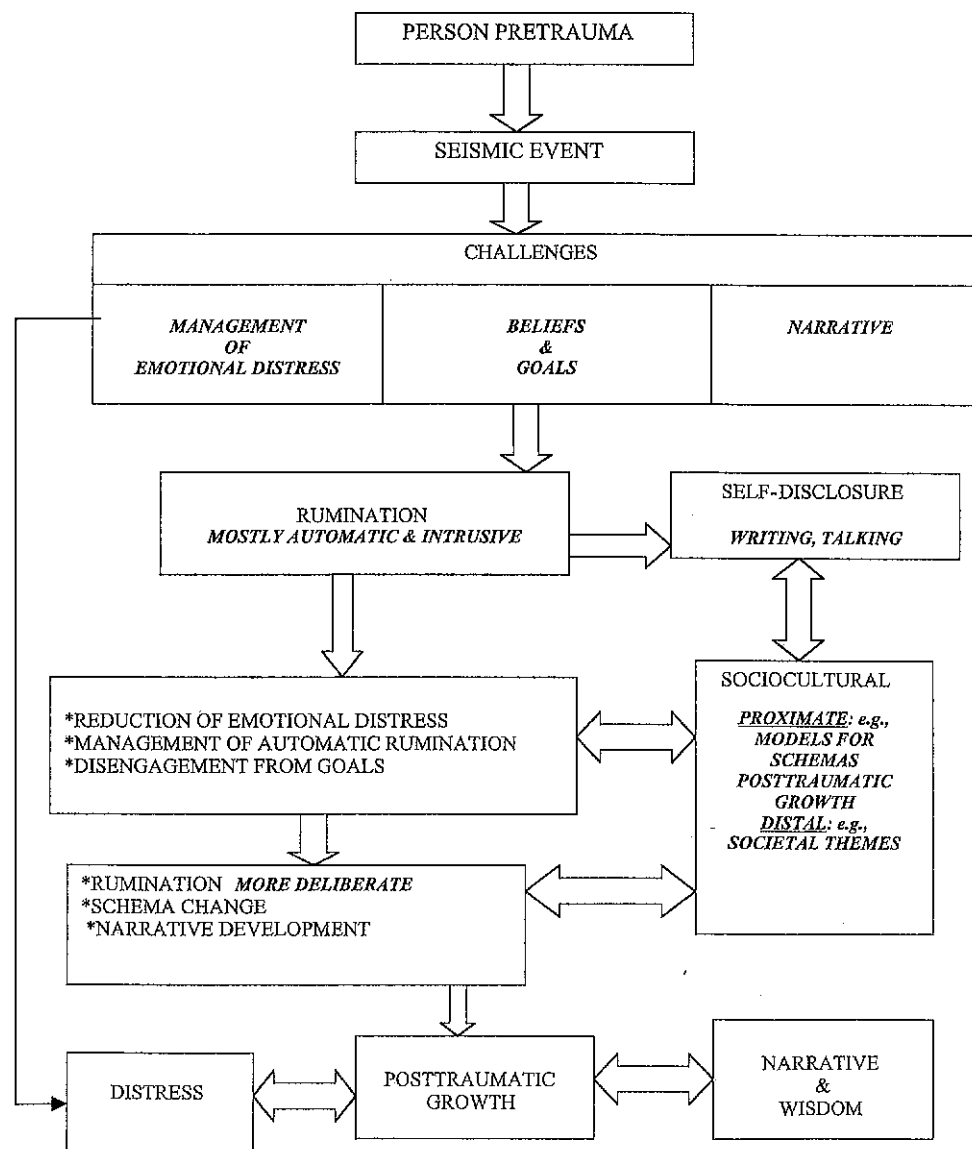


FIGURE 1.1. A comprehensive model of PTG.

will also provide a more extensive description of some elaborations and expansions of the model that may help broaden the ways in which the process of PTG is studied and understood.

Some of the key elements of the model include the following: the characteristics of the person and of the challenging circumstances, **management of emotional distress**, rumination, self-disclosure, distal and proximate sociocultural influences, narrative development, and life wisdom. In the sections that follow, we will provide an elaboration of elements of the model that represent extensions of what we have done previously.

We recognize that this is a general model, and that some specific variations may be necessary to account specifically for different domains of PTG. Given that individuals often report some aspects of growth more than others, it will be necessary to be able to predict how these variations occur. However, we may be too early in the development of the field to develop such complete models.

Rumination/Cognitive Engagement

The word *rumination*, at least within the confines of social and behavioral research, has acquired quite a negative connotation in recent years, and perhaps even a clearly negative denotation. **We continue to use the word in its original sense, "to turn over in the mind," repeated thinking that is not necessarily intrusive and that includes reminiscing, problem solving, trying to make sense** (Martin & Tesser, 1996), and perhaps searching for how the struggle has changed one in positive ways. For those for whom the word *rumination* now means repeated intrusive thinking that is negatively valenced, we suggest they regard the word as synonymous with **cognitive engagement**.

The degree of PTG reported tends to be related to rumination about elements related to the stressful event. One strand of evidence is indirect and suggestive, but congruent with our view that **PTG is more likely to occur when the circumstances are highly disruptive to the individual**. Several studies have reported that **greater amounts of growth are reported for persons who report higher levels of stress or threat associated with the crisis** (Linley & Joseph, 2004; Stanton, Low, & Bower, this volume; Weiss, 2004; Wild & Paivio, 2003). This pattern of results suggests that **for PTG to occur in response to a stressful event, the set of circumstances the individual faces must present a significant degree of threat to the preexisting assumptive world** (Calhoun & Tedeschi, 1998, 2004; Janoff-Bulman, this volume; Tedeschi & Calhoun, 1995, 2004).

In fact, this emphasis on the disruption of the assumptive world is a reason that we have used the term *posttraumatic growth* as opposed to others that do not so clearly acknowledge this level of disruption to peoples' lives. **A good way to judge whether an event is truly traumatic may be to consider the way it disrupts the personal narrative. If a person refers to a negative event as a watershed that divides a life into "before and after" the event, it has been traumatic and it can initiate the cognitive engagement that produces PTG. How to restructure the life narrative in a way that accommodates the unanticipated event is a part of the cognitive challenge of trauma.**

However, once the minimal threshold of cognitive disruption has been reached, it is not clear the extent to which the relationship between growth and disruption is linear or nonlinear. Although additional factors need to be considered (e.g., the person's personality style and characteristics pretrauma, proximate culture), there are some results suggesting that, at least in some contexts, the relationship between strength of the traumatic "dose" and the experience of growth may be curvilinear (Fontana & Rosenheck, 1998; Linley & Joseph, 2004). Considering only the relationship between traumatic exposure and the

degree of positive change experienced, it may be that although a minimal level of exposure is necessary, extremely high levels of exposure may not result in any increase in experienced growth. The reasons for this apparent curvilinear relationship include some form of "diminishing returns," and extreme doses of trauma may simply overwhelm the psychological resources of most persons. The result may be disruption of the cognitive mechanisms necessary for processing the subtleties that can be involved in constructing perceptions of PTG.

As we conceptualize it, the experience of a major life crisis leads the individual to engage in ruminative processes in the immediate aftermath, with the likelihood that, for most persons, these early processes of cognitive engagement are more intrusive than deliberate. We have distinguished this early form of automatic and intrusive processing in our model from the later, more deliberate type of processing involved in producing PTG (Calhoun & Tedeschi, 1998). Recently, researchers who have done much work on rumination have made a distinction between "brooding" and "reflective" rumination that makes a similar distinction (Nolen-Hoeksema & Davis, 2004). As others have suggested (Epstein, 1990; Janoff-Bulman, 1992, this volume), the content of this more deliberate, reflective ruminative process tends to be the repair, restructuring, or rebuilding of the individual's general way of understanding the world. Posttraumatic growth tends to be more likely when the individual ruminates, with a wide variety of content, trying to make sense out of what has happened. Following the thinking of Aronovsky, in our original model (Tedeschi & Calhoun, 1995) we emphasized that this ruminative process involved establishing "comprehensibility" first. This is the attempt by survivors to grasp that what has happened really has happened. When fundamental understandings of personal reality are violated, there seems to be a time lag between the event and the full appreciation that circumstances are irrevocably changed. "I can't believe he's dead." "I really do have cancer."

With the emerging comprehensibility comes a better chance at manageability, figuring out ways to cope with the changed circumstances, and reaching the conclusion that one has the resources to deal with it. These first two aspects of cognitive engagement with the trauma are akin to the primary and secondary appraisals described by Lazarus and Folkman (1984). But in the kinds of traumatic events we concern ourselves with here, these appraisals are not necessarily instantaneous, and they do not occur only in the midst of the trauma. They can take time, and it is not at all clear to many trauma survivors in the immediate aftermath what exactly has happened and if they are going to manage it. A final piece of the engagement is "meaningfulness," and this is the more reflective element that can yield PTG. This probably happens in earnest only after the person is coping successfully, or managing the aftermath of trauma well enough so that they are not constantly preoccupied with mere survival. In this reflection on their plight, they can move from the mere survival that was their original focus to recognizing some other possibilities that become PTG.

It appears that for PTG to be more likely, significant cognitive engagement with elements of the life crisis must occur. Several studies have indicated that the amount of growth reported is significantly related to cognitive activity (Linley & Joseph, 2004; Manne et al., 2004). Given the wide array of purposes and content of posttraumatic ruminative activity, the timing and degree of activity for different domains of PTG needs to be considered. The slim evidence available so far suggests that content is important, and that cognitive processing of content more directly connected to growth may be more likely

The Fruits of Cognitive Engagement: Preparedness and Resilience

Janoff-Bulman (this volume) postulates another aspect of PTG that she calls “preparedness,” the ability of transformed assumptive worlds, or schemas, to resist subsequent traumas. This kind of preparedness appears to be similar to what has been conceptualized as “resilience,” the ability to bounce back from or to resist the effects of apparently traumatic events. We have described the results of PTG (Calhoun & Tedeschi, 1998, 2004) using the metaphor of traumas as psychological earthquakes that shake the foundations of schemas that will then need to be rebuilt to standards that allow resistance to future earthquakes. Our view is that the personal strength that is acknowledged by some trauma survivors and a changed philosophy of life that can accommodate the possibility of truly traumatic events with a revised perspective on life priorities, together create this psychological preparedness that equips people to manage subsequent traumas. These stronger and wiser people embody resilience. They are able to say about subsequent traumas that they are confident they can handle these because of what they managed before. They can say that they understand better what is important in the aftermath of such events because they processed this when they went through a life crisis before. They may compare what is happening now to a previous trauma and conclude it is not as bad. Their revised assumptive worlds allow for these perspectives that allay anxieties, make it unnecessary to do much additional cognitive processing, and allow the world to remain comprehensible. Subsequent events do not set in motion the extensive cognitive processing involved in establishing comprehensibility, manageability, and meaningfulness, and do not act as major disruptions to the life narrative, the events do not meet the criteria for trauma in our model, and are not experienced as such by the individuals going through them. These events may not produce any additional PTG. That is not to say that the events have no impact. There is likely to be loss, grief, suffering, or other negative responses. But they may not be transformative of the view of self, others, and philosophy of life. This “preparedness” suggests an increase in the individual’s resilience to future stressful circumstances.

Our view of the relationship between PTG and resilience is a bit complex. Our model of PTG has, from the beginning (Tedeschi & Calhoun, 1995), incorporated an acknowledgment that some successful coping or managing of the event is necessary for people to be able to begin to cognitively process what has happened into a perspective that has elements of PTG. As we hypothesized in 1995, people who have a moderate degree of coping capability would be most likely to report PTG. We postulated a curvilinear relationship whereby those with substantial psychological weakness would suffer purely negative responses to trauma, and those with the strongest capabilities would not be strongly affected. They would appear resilient in the face of the event. Furthermore, following Janoff-Bulman’s formulation (this volume), and our discussions of rebuilt schemas as resistant to traumas, people who experience PTG may become psychologically better prepared for subsequent events that may otherwise be traumatic.

This kind of relationship between resilience and PTG is one reason why it is important to maintain a clear distinction between these two concepts rather than calling PTG a form of resilience (see Lepore and Revenson, this volume). Another reason for maintaining the distinction is that the word *resilience* was never defined as transformation or reformulation. Dictionary definitions of the term state that resilience is “the power or ability to return to the original form or position after being bent, compressed, or stretched” or to “recover readily from illness, depression or adversity.”

Cultural Context: Distal and Proximate

An individual's "culture" can be thought of in two broad categories, distal and proximate (previous discussions of similar ideas in the domain of ecological psychology have used terms such as *microsystems*, *exosystems*, and *macrosystems* to describe similar domains of focus—Bronfenbrenner, 1979). Distal cultural elements represent the broad cultural themes that tend to predominate in larger societies or broad geographic areas, such as countries, and proximate culture represents the small communities and social networks of people with whom an individual interacts (Calhoun & Tedeschi, 2004). We think that it is useful to consider both of these domains when trying to understand the process of PTG.

Broad domains of culture are typically not studied by psychologists and other scholars and professionals whose primary interests lie with what happens with individuals, couples, and families. But attending to these cultural themes and more "distant" sources of social influence is desirable to understand the possibilities for growth in the struggle with crisis.

Individuals who are directly exposed to particular events are likely to consider themselves to be part of quite large social groupings that comprise such broad categories as societies and countries (e.g., Americans) and are, in some ways, more distant from the individual than the physical persons with whom they interact within the context of their proximate cultural contexts. The prevailing modes of thinking, the ways the world in general is construed within the contexts of those social and cultural entities, and the general cultural narratives that are broadly accepted and influential within those broad contexts may help shape how individuals understand what has happened to them (Goss & Klass, 2005). We have suggested in the preceding text, for example, that in the United States religious ways of understanding the trauma experience are a more important part of the larger societal themes than they are in Europe. The "American" narrative (Pals & McAdams, 2004) might be expected to influence the individual American's response to trauma by providing already existing narrative frameworks that include religious themes and perhaps themes of optimism and self-reliance. The themes that are prevalent in such distal cultural forms, and the ways in which they do or do not influence the individual's own experience of growth remain a largely unexamined area.

The individual's proximate cultural influences may provide a more direct avenue for evaluating how the process of PTG may occur. Of particular importance are the mutually influential processes of rumination, self-disclosure, and the qualities and responses of the cultural world close at hand to the individual and to that person's posttraumatic journey.

Although there are a wide variety of elements on which to focus, we will describe only the possible roles played by the following: primary reference groups and the language, concepts, and assumptions employed by primary references to make sense of trauma and its aftermath generally, and the conceptualization of PTG in particular.

Primary reference groups are those that have immediate influence over the individual. They tend to be comprised of persons with whom interactions occur on a regular basis and with whom the individual tends to share certain attitudes and assumptions. In the current colloquialism, primary reference groups are those the person "identifies with"—the people whose responses have a significant probability of affecting the individual and his or her behavior. These groups could include, for example, family and close friends, religious groups or congregations, a team, one's neighbors, a gang, or one's professional peers. Individuals usually do not experience the aftermath of crisis as socially isolated and disconnected persons, but their experience unfolds within the diverse influences of their primary reference groups. It seems reasonable to expect that the possibilities for PTG,

including the degree and the characteristics of growth, will be influenced by the prevailing views and the types of responses of the individual's proximate cultures.

Three elements of the proximate social world seem to be particularly important (although there are many others). One important element is the responses of important others to disclosures related to the trauma and in particular responses to intimations about growth or direct articulation of that experience. Another important element is the degree to which a traumatized person's ruminations are congruent, in content and degree, with the kinds of thoughts significant others have about the individual's situation and response or, put in other words, the degree to which "co-ruminations"² (Rose, 2002—although Rose's concept is restricted to disclosure of *negative* content only and thus much more restrictive than the more general meaning of the word *rumination* as we use it here) are adaptive and the degree to which they are congruent between the persons directly affected and important others from the proximate social world. A third cultural element is the presence of models of PTG.

The responses of others to the individual's disclosure are important, but individuals will vary in the degree to which they experience distressing internal states, including unpleasant ruminations, and individuals will vary in the degree to which they wish to engage in self-disclosure related to their stressful experience, as suggested by the model summarized in Figure 1.1. It follows that PTG is likely to be influenced by the interplay of rumination characteristics, disclosure factors, and the influences of both distal and proximate cultural factors. In particular, what are some of the relationships that might be expected between characteristics of rumination, cultural factors, and PTG?

Available work on the relationships between rumination, social constraint, and psychological distress (Lepore & Helgeson, 1998; Lepore, Silver, Wortman, & Wayment, 1996) provides some suggestive indications. It is likely that individuals who have high rates of cognitive engagement with trauma-related elements, and who have a high need to self-disclose, may be particularly likely to engage in event-related disclosure, and in turn may be particularly affected by the kinds of responses received from the proximate culture. In addition, the style, manner, and content of the individual's disclosure may elicit different kinds of responses from others. The kinds of responses, in turn, would be expected to have an impact on the content of the individual's rumination about what has happened.

However, when the individual experiences social constraint about stress-related disclosure, then one might expect that the possibilities for growth would be reduced. Research on the effects of negative responses to persons in adverse circumstances indicates that there are a number of ways that people can be unsupportive to those experiencing trauma, and that the severity of the circumstances may play a role in determining what kinds of problems survivors experience with their social networks (Ingram, Betz, Mindes, Schmitt, & Smith, 2001). It might be useful to examine the effects of various supportive and unsupportive responses on the willingness to self-disclose and the effect of these responses on the production of additional ruminations about the possible reactions of others. For example, we have found in our work with bereaved parents that a substantial degree of their suffering and rumination is focused on the disappointments they have endured in the reactions of persons they have assumed would be supportive and compassionate (Tedeschi & Calhoun, 2004). Ingram et al. (2001) reported that stressor-specific unsupportive social interactions lead to problems in adjustment. We also expect that an increase in unproductive ruminations that are set in motion by unsupportive responses of others may make it

²We are grateful to Dr. Virginia Gil-Rivas for suggesting this area of inquiry.

more difficult for the individual to maintain a focus on the reflections on content that can lead to PTG.

In addition, it would seem that when the individual is able to engage in disclosures that contain themes of growth, when growth themes are part of the narratives and idioms of the proximate culture's narratives and idioms related to posttraumatic response, and when disclosures are met with accepting or affirming responses from significant others, then growth is more likely to be experienced. Clearly, what we are suggesting involves the mutual interplay of a variety of factors in differing domains, and the challenge of translating such theoretical predictions into manageable investigations is great. Nevertheless, it would seem to be a challenge worth accepting, because elements in these domains seem likely to be connected to the experience of crisis-related growth.

A simple and direct way of beginning to examine the influence of proximate cultural elements is to look at the presence of models of PTG. Weiss (2004), for example, found that husbands of women with breast cancer who answered yes to a question about whether or not they knew someone (other than their spouse) who had experienced "benefits from the experience" (p. 265) were somewhat ($p < .06$) more likely to experience growth than those who reported not knowing such a person. Although not conclusive, these findings clearly suggest that exposure to models of PTG is a relevant domain for additional inquiry.

Although difficult to operationalize and quantify, it seems desirable to attempt to assess the narrative themes about the process of coping with loss and tragedy that predominate in the individual's primary reference groups. And to examine the degree to which themes of resilience and growth are present within the general ideas about how people should, and how they typically do, respond to major life challenges. Going even further with this process, it seems highly desirable to examine the ways in which the experience of PTG in individuals is related to the ways in which coping with trauma is conceptualized by others (e.g., partner/spouse, friends, neighbors) who have significant influence on the person directly affected by the circumstance (e.g., the man who is the cancer patient). One expectation is that the greater the prevalence of themes related to the view that the struggle with trauma can change one for the better, then the more likely it is that individuals in those contexts will report higher levels of PTG. As a potential corollary, however, it might be expected that those persons whose experiences with the struggle with crisis do not include elements of growth, but whose cultural influences inform them that the expectation is that they will grow from the encounter with loss, may experience greater constraint in disclosing their experiences and may consequently experience greater levels of distress (Wortman, 2004) than persons whose experience of growth more closely reflects the themes of their proximate culture.

One variable that has been investigated in the cultural domain is general social support. This is a general element that we have previously suggested might be related to PTG (Calhoun & Tedeschi, 1998, Tedeschi & Calhoun, 1995). However, studies using general measures of social support have tended not to find reliable relationships between scores on the PTGI (Tedeschi & Calhoun, 1996) and social support (Cordova, Cunningham, Carlson, & Andrykowski, 2001; Sheikh, 2004). But more specifically focused assessments of social factors in this domain have tended to show a relationship between growth and support (Weiss, 2004). Our current thinking about the relationship of growth to social factors is more specific, suggesting that certain types of responses, including supportive ones, to certain kinds of behaviors on the part of the person in crisis, will have a relationship with the degree of growth reported. The utilization of broad gauge, general measures of social support, however, seems a less fruitful approach to utilize than we previously anticipated.

In sum, we have expanded some of the elements of our model of PTG. In particular, the ways in which the individual's internal psychological states, particularly with reference to ruminative cognitive engagement with crisis-related elements, the interest in engaging in trauma-related disclosures, the style and content of disclosures, and the influences of sociocultural factors, both distal and proximate, represent important elements to be considered in order to more fully understand the process of PTG. We have discussed the other important elements of the model, for example, narrative development and wisdom elsewhere (Calhoun & Tedeschi, 1998, 1999, 2004; Tedeschi & Calhoun, 1995, 2004).

HOW MUCH POSITIVE CHANGE REPRESENTS "GROWTH"?

Posttraumatic growth is not a universal experience. Estimates of the "prevalence" of growth that have relied on quantitative assessments suggest that the range is from 3% to 100%, and more commonly reported percentages tend to range from sizeable minorities (e.g., 30%–40%) to majorities (e.g., 60%–80%) of persons who have struggled with trauma (Linley & Joseph, 2004). Examined in a different way, mean scores on established measures of growth, such as the Stress-Related Growth Scale (SRGS) (Park, Cohen, & Murch, 1996) and the PTGI (Tedeschi & Calhoun, 1996) tend to show some variability as well, raising the question of the appropriate "cutoff" scores to use as the criteria for growth.

Qualitative studies also offer the same kind of variability, both between persons and between different groups of persons (e.g., Calhoun & Tedeschi, 1989–1990; Salter & Stallard, 2004). Different persons report different degrees (including the absence) of growth and different kinds of growth and ascribe widely differing significance to the positive changes they have experienced.

One important concern expressed about the research on PTG (Wortman, 2004) is the accuracy of the assumption that PTG is indeed highly prevalent, and the potential negative impact of the popularization of the notion of growth on persons experiencing personal tragedies when they do not find themselves undergoing the "wonderful" growth that so many others are assumed to have experienced when they have not. *This is an important concern with which we agree* and about which we have already written extensively (Calhoun & Tedeschi, 1999; Tedeschi & Calhoun, this volume). The issue of the prevalence of growth is important and it hinges, to some degree, on the question of *how* we determine if there is a sufficient amount of positive change experienced to justify labeling the change as reflecting PTG.

We do not have an easy answer, but we do *not* think that the answer lies in trying to establish single, precise scores on growth scales, even if the cutoff scores are chosen based on sound statistical and empirical foundations. Although such processes might be useful for the understanding of aggregate data, the use of a specific score does not seem a useful avenue to pursue when trying to understand the experience of individual persons. Is it reasonable, for example, to categorize as growth both the experience of the woman who chooses to change careers and become an oncology nurse, regarding this as a way of honoring the memory of her lost child and the experience of a man who now appreciates sunsets more because he lost his vision for a few days? Is a vocational change honoring a lost loved one not more significant than an increase in aesthetic appreciation of a common natural event? Perhaps. We are not discouraging the use of cutoff scores to create groups for statistical analysis or similar uses to which such data points might be put. We are somewhat skeptical, however, of the degree to which average scores on inventories can capture the importance, quality, and centrality of the changes experienced by individuals in their struggle with trauma. As researchers further explore the degree and prevalence of

growth with the assistance of quantitative measures, the answer to the question "was the change sufficiently positive to merit the label posttraumatic growth?" is one that seems most appropriately answered by the individuals affected.

FUTURE RESEARCH ON POSTTRAUMATIC GROWTH: WHAT NEXT?

Mortality Salience

The data have generally supported our view that the stressfulness of the event experienced is correlated with and tends to predict higher levels of growth reported. Our general framework for understanding this process builds on the work of Janoff-Bulman and others (e.g., Epstein, 1991; Parkes, 1971). **Highly stressful events threaten or require restructuring of the assumptive world, and this process of restructuring the assumptive world results in the conscious experience and awareness of PTG.** A specific area of inquiry that may have potential for understanding further the process of PTG, which many traumas include, is the role played by the increased salience of one's mortality (Cozzolino, Staples, Meyers, & Samboceti, 2004; Martin, 2003). Much of the work on PTG has been done with persons whose stressful experiences include the threat of losing or actual loss of life (e.g., cancer, combat, and bereavement). **The ways and degree to which the traumatic experience makes one's own mortality salient and how this salience is related to posttraumatic growth seem to represent another area for investigation.** In particular, do crisis events where mortality is made highly salient lead to *more growth* than those that do not, and is the *kind of growth* different in situations that vary in mortality salience?

Methodologies

The methodology used to study PTG is an area that future investigations need to consider. As we have previously suggested (Calhoun & Tedeschi, 1998; Tedeschi & Calhoun, 2004), it seems important to continue to investigate growth from the perspective of traditional quantitatively oriented positivistic science. These kinds of investigations provide interesting possibilities for testing specific predictions and associations, and provide useful descriptions of what characterizes the process, predictors, and consequences of the positive changes that can emerge from the struggle with crisis. Several important findings have already been reported with sophisticated quantitative approaches (e.g., Cadell, Regehr, & Hemsworth, 2003; Frazier, Ty, Margit, Michael, & Jeffrey, 2004; Sears, Stanton, & Danoff-Burg, 2003; Tomich & Helgeson, 2004). The use of longitudinal strategies is also a useful step. Because longitudinal methodologies typically require significantly greater resources than cross-sectional investigations and because there are many important variables that either have not yet been investigated or that require further investigation, we think it is *useful to continue the use of cross-sectional methods*, particularly when the questions are related to the investigation of variables or relationships that have not been previously studied. Longitudinal designs have clear advantages, particularly for identifying antecedents and predictors of growth, but cross-sectional designs would seem to have a role to play in answering questions about PTG.

Although they tend to rest on different sets of assumptions than traditional "scientific" investigations, the use of qualitative methodologies is also desirable. Qualitative methodologies can provide the rich descriptive detail and deep understanding of the experiences of individuals who have faced major life crises that are not possible with quantitative strategies that focus, appropriately so, on variables rather than persons. Perhaps, because

of our own training and professional preferences, we tend to favor qualitative methodologies that clearly specify repeatable steps in the process of analysis and that attend to issues that quantitatively oriented investigators describe with the terms *reliability* and *validity*, and qualitative researchers tend to describe with the term *trustworthiness* (Lincoln & Guba, 1985). Although the approaches of qualitative investigators and of scientifically oriented quantitative researchers can be viewed as contradictory and, perhaps, mutually exclusive (Gergen, 2001; Lincoln & Guba, 1985), we see great potential for studies that utilize both qualitative and quantitative methods in the same investigation. In spite of their sometimes antipathetic stances, the possibility seems to be that each approach can inform the other, leading to greater progress in the understanding of consequences of the struggle with trauma. Given the current *Zeitgeist* within the domain of research psychology and other disciplines in the social and behavioral sciences, we think it is particularly important that investigators be encouraged to employ qualitative methods that can offer an expanded understanding of the experience of persons dealing with a wide array of major life crises.

Within the general approaches of quantitative and of qualitative perspectives, it is important to incorporate *multiple methodologies*, and to obtain the perspective of *multiple sources*. For example, studies of women with breast cancer have included information obtained from their partners (Manne et al., 2004; Weiss 2004). This allows not only a better understanding of the person directly affected by the stressful event, but also an understanding of how significant others are affected by what happens to persons who are important to them. Future studies on growth that obtain the perspectives of multiple members of the individual's proximate cultural networks are highly desirable.

Rumination and Cognitive Processing

The evaluation of the sociocultural factors that are related to growth is important, but perhaps one of the most promising areas in which much more work needs to be done is in the ways in which cognitive factors are connected to growth. As we interpret it, the available data suggest that the important role accorded to rumination or cognitive engagement in our model of growth is justified, but much more information is still required. As others have suggested (Manne et al. 2004), it is important to begin to examine the role of cognitive factors with a bit more precision and breadth.

There are at least four dimensions that might profitably be considered in future studies of the relationships between cognitive factors and PTG, as follows: (a) intrusive versus deliberate cognitions, (b) the valence of the cognitions, (c) the content of the cognitions, (d) and the frequency and timing of cognitions. Both deliberate and intrusive ruminations have been found, at least in some instances, to be correlated with and predictive of PTG (e.g., Calhoun et al., 2000; Mann et al., 2004). However, results have not been consistent, indicating that there is still much that is not known. Future investigations of PTG might well include assessment of both the intrusive ruminations that are typical of posttraumatic experiences and more deliberate kinds of repetitive thinking that would include elements such as trying to make sense or even more directly, engaging in "growth reminding" (Tennen & Affleck, 1998, p. 84).

The content of ruminations also seems to be an appropriate area for further investigation. What individuals exposed to trauma think about may typically include unpleasant elements related to the crisis, and the content may be primarily event related. However, cognitions that have other content may also occur repeatedly in the aftermath of trauma and future studies would fruitfully include a wide array of content.

Posttraumatic cognitions can vary in *valence*. Some thoughts, for example, recalling the pain and fear of experiencing a combat wound, may have strong negative valence, although other recurring thoughts may have strong positive valence, for example, recalling the selfless actions of fellow soldiers who came to the rescue and provided immediate assistance. Dohrenwend et al. (2004) considered valence and salience in a study of what they called "tertiary appraisals" of military service among Vietnam War veterans. They examined both positively and negatively valenced interpretations among veterans reporting that the military experience was highly salient for them, that is, it was a major life event and affected everyday life. Positive and negative interpretations tended to co-occur, and veterans making primarily negative appraisals tended to show high levels of alienation. The group of veterans showing positive appraisals almost always included negative appraisals as well, and showed the best adjustment, although some also had posttraumatic stress disorder (PTSD). There was almost no indication of exclusively positive appraisals or defensive denial.

Finally, the *frequency* of the posttraumatic cognitions would seem important, and it seems likely that the frequency would be differentially related to growth depending on the intrusiveness, content, and valence of the cognitions being studied. There is some indication that the timing of cognitions may be important in determining the likelihood of PTG (Tedeschi, Calhoun, & Cooper, 2000), but that the action of this variable may depend on the particular domain of PTG in question. The data available strongly indicate that cognitive elements are potentially of great importance to the understanding of PTG, but the role of different characteristics of the ruminations and other cognitive elements is not yet well understood.

As we have suggested in the preceding text, the responses of others to the disclosures related to trauma-related ruminations also seem to be an important area for further investigation. Expectations, based on our model of growth, are that growth is more likely to occur when models of growth and themes of growth are available in the proximate culture, the individual who wishes to disclose does not experience social constraint about disclosure, and others respond with social acceptance or affirmation to trauma-related disclosures that reflect themes of PTG.

Positive Emotions

Current data indicate that positive emotions can play a significant role in coping with difficult life events and, as Stanton and Low (2004) have suggested, they may have important connections to PTG, yet positive emotions are still not explicitly included in our model of PTG. We agree that they are likely to be important in the process of PTG (Fredrickson, Tugade, Waugh, & Larkin, 2003). Although temporary positive affective states may be found to be important in the process of PTG, it is more likely that more trait-like characteristics, such as "preexisting dispositional positive affectivity" (Stanton & Low, 2004, p. 78) will prove to be relevant. Extraversion is a personality characteristic that has been found to correlate with PTG (Linley & Joseph, 2004), and *extraversion has a component that might well be described as dispositional positive affectivity*. The appropriate place to include positive emotions in our model, then, seems to be within the category of relevant characteristics of *the person pretrauma*. For the present, it is our view that the continued presence of some form of psychological discomfort appears to be a more relevant element to study as a variable contemporaneous to PTG and that dispositions toward positive affect are more appropriately studied as characteristics of the person that antecede the trauma.

Cross-National Studies

The investigation of PTG in different countries has supported the importance of also considering distal cultural elements (e.g., Ho, Chan, & Ho, 2004; Powell, Rosner, Butollo, Tedeschi, & Calhoun, 2003; Zoellner & Maercker, this volume; Znoj, this volume). Preliminary findings suggest that the occurrence of PTG is not unique to one continent or to one society. However, findings do suggest that the ways in which growth is manifested may contain elements that are unique to certain sociocultural settings. A major question that still remains is—**what elements of the PTG experience appear to be found across different societies, and which elements appear to be confined to only some kinds of sociocultural contexts?** First steps have already been taken, but more cross-cultural or cross-national studies clearly are needed.

Ongoing Issues in the Quantitative Measurement of Posttraumatic Growth

One of the criticisms of the PTGI, the SRGS, and similar inventories is that **they do not allow respondents to report negative aspects of trauma** (Frazier, Oishi, & Steger, 2003; Park & Lechner, this volume). The assumption is that this characteristic of the scales can lead to validity problems in at least two ways: **respondents may develop a “positivity response bias,” leading respondents to report positive change when in fact none has occurred or, perhaps more importantly, the scale does not allow respondents to report changes about which they are not asked.**

Although the identification of the problem of a possible positive response bias is reasonable, it is an empirical question. Is there evidence that **the content and structure of the current scales do indeed lead to the “false positive” report of growth?** We are aware of none, and what data do exist argues against this particular criticism of available scales. For example, the PTGI is not correlated with measures of social desirability (e.g., Wild & Paivio, 2003); respondents may actually underreport growth on growth scales (Smith & Cook, 2004); respondents report PTG along with highly negative psychological states (Park, 1998; Tedeschi & Calhoun, 2004); and self-reported growth tends to be corroborated by others (McMillen & Cook, 2003; Park, Cohen, & Murch, 1996). General self-protective cognitive biases may affect self-reports generally and reports about growth in particular (McFarland & Alvaro, 2000; Tedeschi & Calhoun, 1995), but the majority who report positive changes appear not to be engaging in some form of defensive denial (Dohrenwend et al., 2004).

We have previously addressed the possibilities that PTG may involve some self-enhancing bias in some persons (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 1995). Our current view is that there may be variability in research samples, so that a few persons in such samples might demonstrate this tendency, or a tendency toward denial of the negative aspects of traumatic experience. However, as Dohrenwend et al. (2004) reported, this may be a very small proportion of research participants. We have also suggested another way the self-enhancing aspect of growth may operate (Calhoun & Tedeschi, 2004). An initial phase characterized by a somewhat distorted positive view of the traumatic event or a determination to produce a positive response to the event might generate positive responses by others that result in clear, observable positive outcomes in the long term. In other circumstances, initial growth perspectives may not produce desirable results, leading to a fading of this perspective over time. For example, Milam (2004) reported in a longitudinal study that there were identifiable groups in his sample that showed trajectories of stable growth, increasing growth, and decreasing growth.

A second problem that has been identified with current measures is that they do not allow respondents to report negative changes. Clearly, studies that include measures of psychological distress and problems in adjustment along with measures of growth already have done that. The core issue, however, seems to be the interest in the examination of negative changes in the domains of PTG, that is, changed relationships, new priorities, changed philosophy of life, and so forth. More information about a particular phenomenon is always desirable. Constructing new inventories that include "negative growth" (a concept that seems somewhat illogical) will certainly provide more information, and it may well have some degree of utility that goes beyond what can be found with the hundreds (thousands?) of measures of distressing psychological responses generally, and distressing posttraumatic responses in particular, that are already available. Individuals exposed to major life crises do indeed typically experience negative changes, sometimes in the very domain in which they experience growth (Calhoun & Tedeschi, 1999; Tedeschi & Calhoun, 1995). But if the interest is in the *positive changes* that individuals experience as a result of their struggle with traumatic events, what do we learn about growth when we obtain information about negative changes? We learn more, but do we learn anything more about growth?

There are at least two strategies that can solve the alleged problems of the available inventories: using bipolar items or allowing the respondent to make a judgment as to whether a particular change is positive or negative (Park & Lechner, this volume). Both of these suggestions, however, seem to have unavoidable limitations—they are based on the assumption that the changes individuals experience in the aftermath of a major life crisis are *either* positive *or* negative. The available data on the experience of persons struggling with the aftermath of trauma indicate that the experience is mixed, that there is good intermingled with the bad (Dohrenwend et al., 2004). There appear to be insurmountable problems with measurement strategies that rely on bipolar items or that ask respondents to characterize a particular change as *either* positive or negative. Both of these strategies will lead to greater problems of interpretation, and greater loss of data, than is the case with the currently available measures. Particular measures can always be improved. But the changes argued for and the changes made need to be based on solid empirical foundations. They need to improve, and perhaps expand, the available measures of PTG rather than simply to produce changes without improvements.

How might the interest in measuring negative changes, on the same dimensions in which growth tends to be reported, be undertaken if bipolar items and post hoc judgments have inherent and from, our view, insurmountable limitations? One solution is simple, and has already been undertaken by many researchers—to include established measures of negative posttraumatic responses along with measures of growth. A second and "more valid" solution (Tomich & Helgeson, 2004, p. 22), which is more challenging, is one with which we have been experimenting—the construction of a scale with items that are both positive and negatively worded, that allows respondents to report *both* positive and negative changes in the same area. This approach has its own challenges, but it avoids the clear pitfalls of bipolar ratings and of categorical dichotomous judgments. Preliminary work on the kind of scale suggested by Tomich and Helgeson (2004) indicates that individuals do report positive and negative changes in the same domains, that they tend to report more positive than negative changes in those domains, and that the mix of positive and negative items may create significant problems for interpreting scores (Baker, 2005).

But is such a scale, which also includes measures of "negative" growth, *really necessary*? If the content and format of current measures of stress-related growth are not contaminated by social desirability, if responses tend to be corroborated by others, if there

is no evidence that inquiring about positive changes on these scales leads to a "positive response bias," and if there are a very wide array of measures of the negative aftermath of crisis, what is gained by creating a new scale? This seems to be a question worth pondering.

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