Handbook of Posttraumatic Growth

Research and Practice

Edited by

Lawrence G. Calhoun

and

Richard G. Tedeschi

The University of North Carolina at Charlotte

LEA

Lawrence Erlbaum Associates, Publishers

2006 Mahwah, New Jersey London

2006

CHAPTER

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THE FOUNDATIONS OF POSTTRAUMATIC GROWTH: AN EXPANDED FRAMEWORK

LAWRENCE G. CALHOUN AND RICHARD G. TEDESCHI
THE UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

Without a bit of sadness
A beautiful samba cannot be made.
—Vinicius de Morais 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

[1]As 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

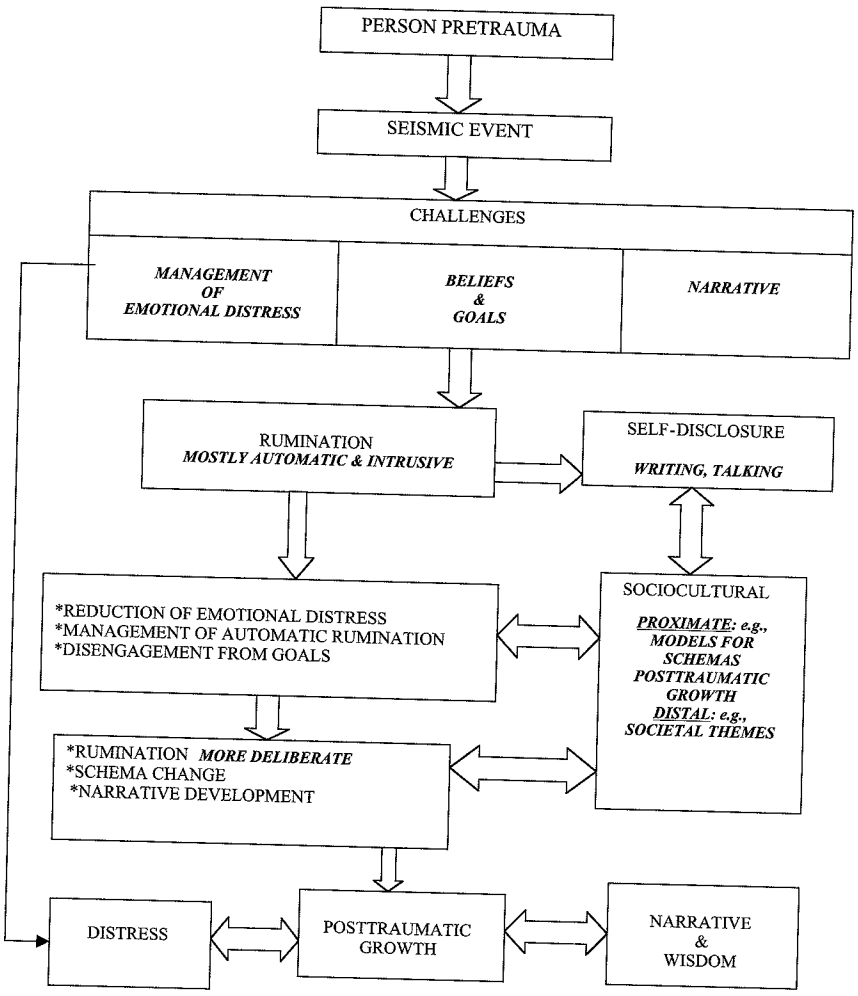

FIGURE 1.1. A comprehensive model of PTG.

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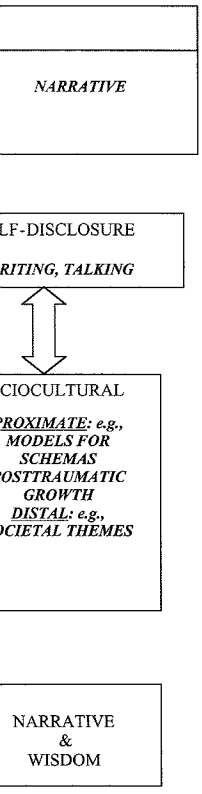

will also provide a more extensive description of some elaborations and expansions of the model that may help broaden the ways in which the process of PTG is studied and understood.

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 to be associated with the amount of growth reported (e.g., Calhoun, Tedeschi, Fulmar & Harlan, 2000).

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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 disctinction 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—Brofenbrenner, 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

[2]We 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, Cunnigham, 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 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

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CHAPTER

2

Resilience and Posttraumatic Growth: Recovery, Resistance, and Reconfiguration

Stephen J. Lepore
Teachers College, Columbia University

Tracey A. Revenson
The Graduate Center of the City University of New York

INTRODUCTION

Life is inevitably stressful, and there is tremendous variability in how people respond to and manage life's stressors. This chapter strives to explain the diversity of human responses to stressful life events, particularly traumatic events, which we ordinarily expect to overwhelm people's coping resources. That is, we are concerned with understanding human resilience and a particular form of resilience, posttraumatic growth (PTG), in the face of adversity. We will review some of the personal and environmental concomitants of resilience and examine how people might develop a capacity for resilience in the face of extreme stressors. We also consider the relation of resilience to transformative experiences, particularly growth, in the aftermath of stress.

RESILIENCE: RECOVERY, RESISTANCE, AND RECONFIGURATION

We have identified three related, but distinct uses of the term *resilience* in the literature on stress and trauma. The three usages reflect different dimensions of resilience, as no

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single definition fully captures this construct. Resilience has been conceptualized as an outcome, such as when it is viewed as an endpoint of stress and coping processes. It also has been viewed as a process, possibly involving dynamic interactions between risk and protective factors internal (e.g., biology, personality) and external (e.g., social support) to a person at various life stages (Bonanno, 2004; Luthar, Cicchetti, & Becker, 2000; Masten et al., 1995; Rutter, 1985, 1999). The different usages of the term *resilience* can lead to confusion, but as long as we are clear about which usage we are considering at any given time, we can avoid undue complexity. It may be especially important that we avoid using the terms *resilience* and *PTG* to describe both processes and outcomes in a single study, and that we be clear in our research about whether our measures reflect outcomes or processes.

Recovery

To introduce the three facets of resilience, we will use the analogy of a tree blowing in the wind. Ordinarily, when a strong wind blows a tree, the tree will bend to accommodate the wind or else it will break. When the wind stops, the tree resumes its original upright state. This elasticity is an important aspect of resilience: A stressor disrupts a person's normal state of functioning, but when the stressor passes, the person eventually resumes his or her normal or prestressor level of functioning. Psychologists also refer to this as a "normative" adaptation pattern. It finds its roots in the early stress literature (Selye, 1956), which depicts optimal adaptation as a process of homeostasis, or a return to some prestressor state. Bonanno (2004) maintains that this process is "recovery," not resilience. Yet others have argued that people who cannot rebound in the ways we have described are not resilient (Garmezy, 1991; Lazarus, 1993; Masten & Reed, 2002). The debate appears to revolve around how quickly individuals must return to normal (or better-than-normal) functioning to qualify for the label resilient. For Bonanno, the criterion appears to be immediate recovery or, possibly, even no negative reactions whatsoever in the aftermath of a stressful event. In contrast, we would argue that even persons who are slow to resume normal functioning are resilient relative to persons who never recover. We return to this point later in the chapter.

Resistance

Resistance is a second form of resilience. Returning to our metaphor, this form of resilience would be evident when a tree stands still, undisturbed, in the face of a howling wind. Bonanno (2004) captures this dimension of resilience in his conceptualization, which maintains that people who exhibit normal functioning before, during, and after a stressor—even long after a stressor—are exhibiting resilience. This conceptualization of resilience is somewhat controversial among psychologists. As Wortman and Silver (1989) noted in their classic paper on the "myths of coping," because this type of human response to stressors does not square with prevailing psychological theories or cultural expectations, it provokes suspicion. As a result, there has been a tendency to "pathologize" this type of response to stressors, although it may be normal and healthy (Bonanno, 2004; Wortman & Silver, 1989).

According to Wortman and Silver (1989), the tendency to pathologize resilience may stem from expectations, or "myths," among mental health professionals and laypersons about what constitutes normal grief following a major loss. Prevalent myths include the

following: a) distress is inevitable following a major loss, b) failure to experience distress is pathological, c) it is important to psychologically work through a loss, d) distress will eventually subside, and e) individuals will reach a state of resolution. Despite the widespread acceptance of these assumptions, the evidence supporting them is weak and contradictory. For example, in a rare study that included data on bereaved individuals both before and after suffering a loss, Bonanno and his colleagues (2004) identified different patterns of responses to bereavement, including a relative absence of grief among some bereaved individuals that was quite stable over time. Using prospective data beginning before the death and continuing through 18 months of bereavement, Bonanno and his colleagues showed that the most frequent pattern was not the so-called normal pattern of elevated depression that gradually subsides (10.2%), but a pattern of stable and low depression (45.9%). Further, there was virtually no evidence for a delayed grief pattern, raising questions about the inevitability and abnormality of low distress responses following loss.

There are potentially unfortunate consequences of these myths of coping with loss. For example, mental health professionals may be routinely prescribing therapy and interventions to people who do not need them, and some methods of intervention may be doing more harm than good. After major traumatic events, counselors—the so-called grief brigade—are often dispatched to the scene (Labi, 1999). These counselors apply psychological debriefing techniques, such as critical incident stress management, to trauma survivors. Debriefing aims to keep survivors mentally engaged in thinking about a traumatic experience in order to "accept the reality of it" and confront negative emotions. There is no solid evidence that this form of intervention is helpful (Suzanna, Jonathan, & Simon, 2002), and some studies have suggested a possible worsening of stress-related symptoms in individuals receiving this type of therapy (Bledsoe, 2003). In some cases, it may be unhelpful to get people to remember and talk about their emotional reactions to trauma if it only leads to rumination and not to true cognitive resolution.

Another problem with labeling a resilient response to stress as maladaptive is that it has led psychologists to develop interventions that emphasize breaking down defense mechanisms, as opposed to building resources for resilience (e.g., developing cognitive strategies for reappraising stressors, developing positive social ties, and engaging in uplifting activities). For example, the technique of expressive writing, in which people write about traumatic life experiences, has been gaining increasing popularity as a therapeutic tool (Lepore & Smyth, 2002). This technique appears to result in long-term improvements in health, but also increases short-term negative affect. An early and still popular theory is that expressive writing is beneficial to trauma survivors because it gets them to confront rather than suppress and avoid trauma-related thoughts and feelings (Pennebaker, 1989). However, mounting evidence suggests that disinhibition does not account for the observed benefits of expressive writing (Greenberg & Lepore, 2004; Lepore & Smyth, 2002). For example, writing about noninhibited thoughts and feelings, or even writing about positive aspects of traumatic events, can facilitate adjustment (Greenberg & Lepore, 2004; King, 2002; Lepore, Greenberg, Bruno, & Smyth, 2002). In his recent writings, Pennebaker suggests that there may be multiple pathways through which individuals benefit from writing about stressful life events (Pennebaker, 2002).

Reconfiguration

Reconfiguration is a third form of resilience. To apply our metaphor, when the wind blows, the tree does not simply make a temporary accommodation and then resume its original

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Reconfiguration resilien
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WHAT IS RESILIENCE?

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shape; instead, it changes its shape. The reconfigured tree can accommodate prevailing winds, but it also may make the tree resistant to breaking in future wind storms. This conceptualization mirrors Walsh's description of resilience as the "capacity to rebound from adversity strengthened and more resourceful" (Walsh, 1998). The notion is also evident in evolutionary perspectives, which conceive of resilience as successful adaptation to a changing environment (Cicchetti & Cohen, 1995). Individuals may exhibit this type of resilience when they are able to reconfigure their cognitions, beliefs, and behaviors in a manner that allows them to adapt to traumatic experiences and, possibly, withstand future traumas. These processes have been described in cognitive-processing theories of trauma as assimilation (e.g., making benign appraisals of threatening events) or accommodation (e.g., revising beliefs about personal invulnerability to threatening events) (Lepore, 2001).

Reconfiguration resilience is similar to PTG in some ways. For instance, both are distinct from resistance or recovery resilience because they entail important transformations that go beyond simply maintaining or returning to normal functioning. We would argue, however, that whereas PTG refers specifically to positive elements of transformations, reconfiguration might include changes that can be both positive and negative. For example, a woman who divorces her husband because he was unfaithful in the marriage may become less trusting in her relationships with men. This newly acquired cynicism may be perceived by the woman as personal growth ("I learned from the experience," "I now understand men," "I'm no longer naive," etc.). Indeed, this attitude may serve her well in some relationships. However, the cynicism from this woman's changed world views also may have a cost if it interferes with her ability to develop intimate relationships with men.

In summary, we conceive of resilience as a multidimensional construct that encompasses a variety of adaptive processes and outcomes. Resilience is evident when individuals are able to resist and recover from stressful situations, or reconfigure their thoughts, beliefs, and behaviors to adjust to ongoing and changing demands. We view PTG as one possible outcome for individuals who go through a reconfiguration process. In the following sections, we further refine our conceptualization of resilience (What is resilience?), identify personal and environmental concomitants of resilience (Who is resilient?), and speculate on how individuals develop a capacity for resilience in the face of stressors (How does the capacity for resilience develop?). We also briefly consider the concept of resilient and resilience-promoting environments in an attempt to move the resilience concept beyond the realm of biological constitution or personality traits and, possibly, forge new directions for developing interventions and programs that help people adapt to stressful events. Along the way, we also point to some further distinctions and parallels between resilience and PTG.

WHAT IS RESILIENCE?

The bulk of research and theorizing on resilience derives from the field of childhood psychopathology. Scholars in this area define resilience as a propensity toward positive (or nonpathological) developmental outcomes under high-risk conditions. The early work in this area centered on trying to explain why many children who grow up in chaotic, neglectful, and otherwise unhealthy environments, or who possess personal vulnerabilities, such as mental and physical disabilities, develop into well-functioning, healthy adults (Garmezy, 1991, 1993; Garmezy, Masten, & Tellegen, 1984; Rutter, 1985, 1987; Werner & Smith, 1977, 1989, 1992).

The study of resilience began with investigations into the etiology of abnormal behaviors and outcomes in children. The early studies showed that risk factors, such as low intelligence and poverty, do not necessarily lead to behavior problems (Garmezy et al., 1984), that having a mentally ill parent does not necessarily lead a child to develop mental illness (Rutter, Maughan, Mortimore, & Ouston, 1979), and that it is possible to be born into an environment of abject poverty and family discord yet develop into a competent, confident, and caring young adult (Werner & Smith, 1992). These studies are historically significant because they signaled a paradigm shift in the field of developmental psychopathology from a focus on deficits to one that encompasses both deficits and strengths.

The early resilience studies also showed that protective factors and risk factors are often orthogonal—not just opposite ends of a continuum. Thus, researchers began to look for factors that could directly promote positive developmental outcomes and, thereby, compensate for the negative effects of risk factors. In addition to compensatory factors, researchers sought to identify protective factors that could mitigate the negative effects of risk factors. These two approaches drive much of the resilience research conducted today, but the models are becoming more complex as the interrelationships between risk and protective factors are viewed as dynamic and sometimes reciprocally related. Resilience research also has informed individual-level psychological interventions, community-based interventions, and school planning (e.g., health education curricula). The task of promoting healthy development still emphasizes searching out and removing risk factors, but also requires identification and nurturance of factors that promote healthy development in general and resilience in the face of adversity.

For a relatively short period of time, some scholars described resilient children as invincible or invulnerable (Anthony & Cohler, 1987; Cowen & Work, 1988; Werner & Smith, 1989) and resilient adults as hardy (Kobasa, 1979). Today, most investigators have abandoned these labels because they suggest that individuals are unaffected by their circumstances, that they lack the capacity to experience distress or disorder, and that resilience is a static, trait-like property of a person. Our conceptualization of resilience recognizes that in some circumstances and for some outcomes, individuals may appear to be invulnerable or, as previously described, stress resistant. This does not mean, however, that these individuals would be resistant to all stressors or even the same stressor at another time. The ability to resist the negative effects of stressors is a dynamic property of individuals and their environments—a point we return to later. As a result, individuals may exhibit disorder in response to one stressor but not another, or to a particular stressor at one time but not at another because resilience may be cultivated and influenced by personal and environmental factors across the life span. Luthar and her colleagues have reported examples of these dynamic qualities of resilience. They observed that children in high-risk situations sometimes exhibit behavioral competence at one time and distress at another (Luthar & Zigler, 1991), and that children at high risk may exhibit some negative outcomes (e.g., anxiety) but not others (e.g., drug use or delinquency) (Luthar, Doernberger, & Zigler, 1993; Luthar & Zigler, 1991).

The dynamic quality of resilience is also evident when one considers how long it may take for resilience to become apparent in individuals experiencing life stressors. As Masten and Reed (2002) have noted, resilience may be a slowly unfolding process, evident only in retrospect and, possibly, only years after an extreme stressor has passed. The time course of this process is difficult to predict for any individual; thus, people who do not appear resilient in one phase of their life trajectory may appear to be quite resilient in another phase. For example, the late actor Christopher Reeve, who was left

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paralyzed after an equestrian accident, wrote that his paralysis left him severely depressed and suicidal (Reeve, 1999), but years later, he became a director and a world-renown advocate for spinal cord research. Similarly, many leaders of medical mutual-help groups first join the group to receive help and work though their problems, but later they assume leadership roles and become advocates for their cause (Revenson & Cassel, 1991). Thus, over time it is possible to observe resilience when it initially appears that an individual is not resilient. These observations support our notion that the capacity to rehabilitate or recover functioning over time is one manifestation of resilience.

Some scholars have conceptualized resilience as the ability to transform traumatic experiences into positive personal growth experiences. For example, Polk writes: "The ability to transform disaster into a growth experience and move forward defines the concept of resilience" (Polk, 1997, p. 1). We believe that resilient people may experience growth, generative experiences, and positive emotions (Bonanno, Papa, & O'Neill, 2001; Tugade & Fredrickson, 2004), as opposed to simply being resistant to developing pathology. However, individuals also may experience distress and problems of adjustment during this transformative process, and do not necessarily experience growth as a result of changes in cognitions and beliefs about the self or the world (Janoff-Bulman, 2004; Wortman, 2004). Reconfiguration may facilitate adjustment to stressors without necessarily reaping benefits. Further, like recovery, reconfiguration may be a slowly unfolding process.

Not all scholars subscribe to the notion that reconfiguration, or transformation, is part of resilience. Tedeschi and Calhoun (2004) have suggested that PTG is distinct from resilience, arguing that PTG is transformative, whereas resilience is not. In another paper, Tedeschi and Calhoun (1995) suggested that individuals who are resilient may be the least likely to experience transformation, particularly PTG, because the traumatic experience may be less challenging to such individuals. For example, individuals who are resilient may resist threats to self- or world-views that often accompany traumatic events, thereby mitigating the impact of the event and simultaneously bypassing any opportunities to grow or learn something from the trauma. This perspective appears to equate resilience with a trait-like capacity to resist stressors. However, in other writings, Tedeschi and Calhoun (1996) introduce the idea that PTG has multiple components, including a factor of "personal strength." This, in some ways, acknowledges that resilience to future stressors may develop from transformations that occur while individuals are struggling with a stressor or that occurred earlier in life during previous struggles. This perspective is more consistent with the view we espouse in this chapter. However, we maintain that resilience also may occur through reconfiguration of knowledge and beliefs that does *not* lead to growth. Thus, we believe that PTG is one form of reconfiguration and, hence, one form of resilience.

In sum, resilience, in the broadest sense, refers to dynamic processes that lead to adaptive outcomes in the face of adversity. Resilience is not a static property of individuals, nor is it immutable: Individuals may experience good outcomes in the face of some adverse events but not others, may experience both good and bad outcomes in response to the same adversity, or may experience a bad outcome in the face of an adverse event at one time but not at another time. In addition to describing resistance to stressors, we are using the term *resilience* to describe a capacity to recover from stressors over time, as well as the capacity to change one's self to adapt to a stressor. To the extent that resilience emerges from transformative processes (i.e., reconfiguration), it may manifest in PTG, but not necessarily. Depending on one's focus, resilience may be examined as an outcome or a process. The view of resilience as a process is apparent in the developmental literature, but

in the adult literature, it is often an outcome. The importance of the concept of resilience is that it broadens our thinking about human adaptation to stressful life events by forcing us not just to look for (unexpected) positive or nonpathological outcomes, but to search for compensatory and mitigating factors that explain and promote adaptation.

WHO IS RESILIENT?

Returning to our tree metaphor, we can ask what kinds of trees bend with or resist the wind, or what predicts how long it takes different kinds of trees to recover after bending in the wind. Obviously, there is the composition of the tree—is it soft and pliable like a willow, or hard and rigid like an oak? In humans, analogous factors include biology and personality. In the literature on adults coping with trauma, there is a strong tendency to associate resilience with personality traits, such as optimism (Farber, Schwartz, Schaper, Moonen, & McDaniel, 2000), hardiness (Kobasa, 1979), ego strength (Farber et al., 2000), and sense of mastery (Hobfoll et al., 2002).

In addition to the tree's composition, characteristics of the tree's environment influence its response to the elements, including availability of water, nutrients, composition of the soil, presence of other trees that might buffer the wind, and so on. In humans, we consider characteristics of an individual's environment, both past and present, which may influence resilience. In the developmental literature, great attention has been given to the association between environment factors, particularly social support, and resilience (Hardy, Concato, & Gill, 2004; Werner & Smith, 1992). We feel that it is time for research to adopt a social-ecological perspective to understand the multiple processes of resilience. A social-ecological perspective recognizes that resilience is not the product of a single underlying factor, but is the result of the interplay of multiple personal and environmental factors (Bronfenbrenner, 1977; Revenson, 1990).

Researchers have only begun to identify the factors associated with optimal functioning in individuals exposed to major stressors. Historically, research on adjustment to stressors has focused on predictors of pathology. Nonetheless, scholars have proposed a number of models of predictors of resilience—including nonpathological or even positive changes—in response to adversity (O'Leary, Alday, & Ickovics, 1998). Some of these models resemble classic models of psychological adaptation to stress (Stanton & Revenson, in press). These models include both social and environmental resources as distal predictors of resilience, but tend to focus on the individual's cognitive appraisals of stressors and individual-level coping strategies as more proximal, mediational processes. Although demographic variables have been conceptualized as personal resources in these models, they really are proxies for unspecified (and unmeasured) variables and processes and, thus, they are not reviewed in this chapter. Similarly, although some developmental models of resilience emphasize temperament as a personal resource—even a biologically determined one—we will not emphasize it in this chapter, as there has been scant research on it. Finally, because few studies operationalize resilience directly, we draw on literature that examines outcomes such as mental health, psychological adjustment to stress, PTG, and benefit finding.

Personality

Personality factors, including a sense of coherence (Antonovsky, 1979), hardiness (Kobasa, 1979), and dispositional optimism (Scheier & Carver, 1985) have garnered a good deal of

attention as correlates of resilience. Because the personality characteristic of dispositional optimism has received the most research attention, it will be used here as an exemplar. Dispositional optimism is the stable, generalized expectancy or belief that one will experience good things in life and that future outcomes will be positive. There is evidence of an association between optimism and positive outcomes across a number of adverse conditions, including bereavement (Davis, Nolen-Hoeksema, & Larson, 1998) and illnesses, such as cancer (Carver et al., 1993), heart disease (Scheier et al., 1989), rheumatologic and orthopedic disorders (Chamberlain, Petrie, & Azariah, 1992), and HIV (Taylor et al., 1992).

Optimism may influence resilience through various pathways. First, optimists may try harder. They may use more coping efforts, particularly approach-oriented, problem-focused strategies. In a study of women with breast cancer, investigators found that optimists took more active steps to do whatever there was to do (Carver et al., 1993). Second, optimists may reframe negative experiences in a more positive way and adopt a more positive focus toward negative events. Positive reframing is an attempt to change one's appraisal of the experience or to impose meaning on it. This reframing may help individuals to integrate their experience into their worldview or see it in a more positive light (Collins, Taylor, & Skokan, 1990; Taylor, 1983). Research has shown that optimists were more likely to use positive reframing as a coping strategy before and after breast cancer surgery, and that use of reframing at one point predicted better outcomes at the next (Carver et al., 1993).

Optimists also have a greater tendency to anticipate finding benefits in adversity (Affleck, Tennen, Croog, & Levine, 1987) and to find benefits after experiencing a trauma (Tennen, Affleck, Urrows, Higgins, & Mendola, 1992). Benefit finding has been linked to other indicators of adaptation, whether studied prospectively or retrospectively (Tennen & Affleck, 1999). Optimists do not simply report greater benefits from adversity, but actively remind themselves of the benefits they have found. Tennen and Affleck (1999) have labeled this *benefit reminding* (in contrast to *benefit finding*) and view it as a coping strategy and not an outcome. In a study of women with fibromyalgia, greater benefit reminding was associated with more pleasant mood (Affleck et al., 1994).

Another reason why optimists may be more resilient is that they may know when to disengage from certain (unachievable) goals and to engage in others (Aspinwall, Richter, & Hoffman, 2001). Three decades ago, a similar concept—homeostatic flexibility or the ability to accept alternative roles—was identified as a component of resilience (Antonovsky, 1974). Self-regulatory theory (Scheier & Carver, 2003) suggests that weakening one's commitment to improbable or unattainable goals enables one to shift to more practical, attainable goals. In a study of women with breast cancer, optimists used the coping strategy of acceptance more than pessimists, and showed less distress and better outcomes at several points after surgery (Carver et al., 1993). Optimists may accept the reality of an extreme stressor more easily than pessimists may, without denying the pain and distress that has occurred. Perhaps, optimists are more confident of an eventual positive outcome or perhaps, they are more willing to discard a worldview that is no longer valid. The idea of being able to shift attention from maladaptive to adaptive thought processes resonates with other work, which suggests the importance of disengaging or not ruminating on unproductive thoughts.

Finally, optimists may have better quality social relationships and, thus, greater social resources to draw upon. Optimists may signal to others that they have positive expectancies

about recovering from stressors, so others may feel that any efforts they take to help an optimist are likely to be fruitful. In one experimental study, individuals listening to people who presumably had a serious illness responded better to patients who presented themselves as struggling but fairly positive in their expectations than to individuals who presented themselves either as "supercopers" or not coping well (Silver, Wortman, & Crofton, 1990). In a study of women being treated for early stage breast or colon cancer, optimists perceived lower social constraints (i.e., they felt better able to express their emotions to others), which, in turn, was associated with lower negative affect and higher positive affect (Lepore & Ituarte, 1999).

Although the literature links personality factors, such as optimism, to resilience and other positive outcomes through various plausible mechanisms, it is not without its critics. Tennen and Affleck (1999) have questioned whether personality characteristics, such as optimism, are not unique predictors of positive outcomes, such as benefit-finding, but outcomes themselves of coping with adversity. Because so many of the studies in the area of personality, stress, coping, and adaptation are cross-sectional and nonexperimental, causal inference is severely limited and seldom addressed. A growing number of studies are looking longitudinally at adaptation to stressors, and finding that adults have different trajectories of resilience (Frazier, Tashiro, Berman, Steger, & Long, 2004; Helgeson, Snyder, & Seltman, 2004).

Resilience-Promoting Environments

In addition to personality traits, environmental factors contribute to resilience. Our primary emphasis in this chapter is on the social environment, although we acknowledge that aspects of the natural and built environment may lead to resilience. Returning to our earlier metaphor, a tree that by its nature is brittle and not resistant to wind may exhibit resilience if it is planted among other trees that block the wind or is planted in a climate zone that makes its branches moist and pliable. Sometimes, staking a new sapling is called for, for example, when planting on a windy slope. Similarly, people coping with trauma are often embedded in a supportive social context and it is important for those resources to be there when needed.

What are the qualities of environments that promote resilience? We suggest three global dimensions: a) environments that promote physical and mental health; b) environments that promote normative development; and c) environments that promote social cohesion and the development of social capital. Within the developmental literature, we know that cognitively enriching environments, close relationships with caregiving adults, and ties to community organizations enhance human development (Evans, 2004; Masten & Reed, 2002). Similarly, greater social support, access to more resources and people, and neighborhoods with greater social capital should lead to resilience, even among populations facing adversity (Saegert, Thompson, & Warren, 2001).

Moving the focus away from individuals to the settings they inhabit avoids the trap of "blaming the victim" for negative circumstances or poor adaptation (Wortman, 2004) and may point to more fundamental, "upstream" social-environmental factors that create negative outcomes (Link & Phelan, 1995). For example, poverty is a fundamental cause of multiple risk factors and disease outcomes. A recent review of the effects of poverty on children's health and well-being points to both physical and social environmental mechanisms that link poverty to poor health outcomes, including substandard housing, crowding, and chaotic and impoverished schools (Evans, 2004). Mirroring the notion of risky situations (Price, 1980), we propose thinking about resilience-promoting environments, in

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which individuals can thrive. Thus, we take the responsibility of "being resilient" off individuals and place it on situations or settings or, more accurately, on the interaction between persons and their environments.

Safe Social Environments Facilitate Coping

A growing body of research suggests that individuals who are able to disclose in confidence to others are more resilient. Disclosure and receipt of social support may lead to resilience through a number of mechanisms. Helpful, pleasant interactions with others provide opportunities to express feelings and concerns (emotional disclosure), and help individuals to more fully process traumatic events and come to a better understanding of the issues involved. Supportive transactions may provide specific suggestions for coping and validation of worth. Through these mechanisms, social support can facilitate coping and reduce emotional distress. Dozens of studies have linked social support to better mental and physical health (Cohen, 1988). Experimental research suggests that social support influences biological variables that could be relevant to health outcomes (Lepore, 1998; Uchino, Cacioppo, & Kiecolt-Glaser, 1996). Aspects of social support also have been implicated in the development of PTG. For example, through disclosure of emotional experiences and the exchange of social support, individuals may perceive increased closeness in their relationships with others (Tedeschi & Calhoun, 2004). In some studies (Park, Cohen, & Murch, 1996; Weiss, 2004), social support has been associated with stress-related growth. In one study, the perception of social constraints—the perception of network members as unreceptive to emotional disclosure (Lepore, 2001)—was associated with lower well-being and greater depression among women with breast cancer (Cordova, Cunningham, Carlson, & Andrykowski, 2001).

Recent empirical evidence suggests that the benefits of disclosure are enhanced when individuals have opportunities for safe emotional expression (Lepore, 2001; Stanton et al., 2000). If cognitive processing of trauma-related stimuli occurs in a supportive social context, associations between the traumatic stimuli and negative emotional responses may be weakened, and even supplanted by positive emotional responses (Lepore, 1997). Disclosure of stressful experiences may regulate emotion by changing the focus of attention, increasing habituation to negative emotions, and facilitating positive cognitive reappraisals of threats (Lepore et al., 2002).

A number of empirical studies provide evidence for these processes. Being able to safely confide in significant others about cancer-related thoughts and concerns has reduced the negative effects of intrusive thoughts on depressive and somatic symptoms in studies of cancer patients (Cordova et al., 2001; Devine, Parker, Fouladi, & Cohen, 2003; Lepore, 2001; Lepore & Helgeson, 1998), people suffering a significant loss (Lepore, Silver, Wortman, & Wayment, 1996; Major & Gramzow, 1999), and children exposed to violence (Kliewer, Lepore, Oskin, & Johnson, 1998). For example, in a cross-sectional study of prostate cancer survivors, Lepore and Helgeson (1998) found that men who reported constraints in talking with their significant others about their cancer, reported more cancer-related intrusive thoughts and were more likely to avoid thinking and talking about their cancer, compared with men who had few constraints. Moreover, there was a stronger negative association between intrusive thoughts and mental health in men who had high constraints in talking with their spouse or family and friends than in men who had few constraints. And in a study of women with early stage breast cancer, Stanton and her colleagues (2000) found that for women who reported high social receptivity (equivalent to low social constraints), emotional expression was related to an improved quality of life.

Social Capital

A number of environments or institutional structures have been described as promoting psychosocial resilience: effective schools, cohesive neighborhoods, religious institutions, and available health care and social services (Masten & Reed, 2002). Similarly, "health-promoting environments" have been described as those that are safe and nonpathogenic, have a moderate amount of control, predictability, and stimulation, include symbolic and spiritual elements, are flexible and stable, and contain a variety of social networks (Stokols, 1992).

One way that these settings may promote resilience is through providing social support and the opportunities to process a trauma socially, as previously described. A second mechanism is that these settings incorporate a high degree of social capital. *Social capital* is defined as the resources inherent in social relationships, including mutual trust, reciprocity, and community participation (Saegert et al., 2001). Thus, an additional process through which environments may promote resilience is by mobilizing agency and effective coping through social connections and a synchronization of resources. For example, for an adolescent coping with a parent's death, having a community-based recreation center may provide the opportunity to participate in health-promoting and engaging sports activities, thus encouraging the development of physical skills, social networks, and a sense of community. A Big Brother/Big Sister program may provide resources for reengaging in life and disclosing emotional concerns. Participation in a religious institution may provide a sense of belonging and community, as well as "proxy" parenting. In these ways, community settings may provide resources that promote the development of resilience.

The Physical Environment

We also need to focus on features of the physical environment that may promote resilience. Environmental design can help to promote health and well-being (Stokols, 1992). For example, incorporating spaces in hospitals where families of surgical patients can comfortably spend the night may promote patient health by increasing familial support. Natural environments have long been suggested as restorative (Hartig, Book, Garvill, Olsson, & Garling, 1996) and, thus, might be good candidates for their resilience-promoting potential. "Healing gardens" may provide a restorative environment within medical settings. Healing gardens provide a sense of control, facilitate interpersonal interactions, offer positive distraction from the traumas that have been experienced, and allow more focused attention; thus, having the potential to reduce stress (Ulrich, 1999). By providing an environment that counters the directed attention fatigue experienced by seriously ill people, healing gardens can provide a safe environment for both disclosure to others and intrapsychic processing of the experience. At this point, however, no studies that link natural, healing environments with resilience or particular coping mechanisms have been conducted; this is a new path for resilience research.

A Few Caveats

Although we have broad evidence that social environments affect resilience, we want to raise a few caveats. First, we tangled with the distinction between resilience-promoting environments versus environments that are resilient. This distinction lies in the level of analysis—whether what is resilient is an individual, or group of individuals, or a

social structure (church, school, community). For example, a close-knit family may be a resilience-promoting environment, as it provides resources and stability that family members can draw on in times of extreme stress. However, major stressors may affect the entire family, either because they happen to all members (e.g., the death of a family member or moving to a new home) or because one member's adversity affects all family members (e.g., unemployment). Researchers have shown that community-wide disasters, such as floods, can deteriorate social support resources (Kaniasty & Norris, 1993), as can the chronic stress of living in a crowded residence (Lepore, Evans, & Schneider, 1991) or raising a child with a disability (Quittner, Glueckauf, & Jackson, 1990). However, a resilient environment is one that can weather the storm as a unit; for example, being flexible enough to maintain social roles or changing them if appropriate, and preserving a coherent collective identity. In a study of families coping with a child's juvenile rheumatoid arthritis, families that coped with the illness and its daily demands in a team fashion and by seeking meaning in the illness reported greater quality of life (Degotardi, 2000).

Second, maintaining a resilient environment may extract a cost for inhabitants of that environment. For example, relationship-focused coping involves attending to other persons' emotional needs while maintaining the integrity of the relationship, and managing one's own stress without upsetting or creating problems for others. Engaging in relationship-focused coping (Coyne & Fiske, 1992; O'Brien & DeLongis, 1997) may be good for marital quality, but have negative consequences if it is not congruent with each partner's individual-level coping efforts. In studies of couples coping with heart disease, wives' coping efforts to shield husbands from stress in the postinfarction period (a coping strategy described as *protective buffering*) contributed to their own distress (Coyne, Ellard, & Smith, 1990), as did husbands' efforts to protect their wives (Suls, Green, Rose, Lounsbury, & Gordon, 1997). Perhaps this happens because the partner using protective buffering feels constrained to express negative emotions or worries to the other person.

Third, requesting social support or receiving unwanted support has its costs (Revenson, Schiaffino, Majerovitz, & Gibofsky, 1991). An underlying assumption of the social support literature is that people need support at times of crisis and that any support is better than none (Lanza, Cameron, & Revenson, 1995). However, the efficacy of social support seems to depend on a number of contextual factors, including the timing of the support, the type of support that is needed, and the source of the support (Cutrona & Russell, 1990). For example, in studies of patients with cancer (Dakof & Taylor, 1990) and rheumatoid arthritis (Dakof & Taylor, 1990; Lanza et al., 1995), emotional support was rated as most helpful when it was provided by family members, whereas informational support was rated as most helpful when it was provided by medical professionals. Returning to our gardening analogy, although securing a newly planted tree with guy wires seems to make sense in a windy climate, allowing the tree to move a bit is necessary for cell and root growth. Translating our gardening analogy back to people, too much support can be restricting and can hinder individuals from learning to cope on their own. Studies of families with a schizophrenic member showed that more enmeshed or highly critical family interactions were associated with increases in patients' symptoms (Leff, 1976). Help may be counterproductive if it threatens autonomy or self-worth or if in immobilizes coping efforts (Coyne et al., 1990).

Fourth, we caution against overplaying the influence of the social environment, particularly as a stress buffer. Despite the presence of social support, some people may still be vulnerable to stressors. Furthermore, personality can interact with the social environment.

Socially competent persons, who are more resistant to the negative effects of stressors, also are more likely to have highly developed social networks (Heller, 1979). Research suggests that people with a positive, trusting social orientation, rather than a cynical one, may derive more benefit from supportive people. In an experimental study (Lepore, 1995a), college students gave a speech either alone or in the presence of a supportive confederate. Low cynicism participants who received support had smaller increases in blood pressure during the speech than low cynicism participants without support and high cynicism participants with or without support. Thus, a trusting social attitude allowed some students to experience reduced stress because of social support, whereas a cynical attitude appeared to eliminate any stress buffering effects of support. In another study, investigators found that having a ruminative coping style was associated with seeking more support, but receiving less compared with people with a less ruminative coping style (Nolen-Hoeksema & Davis, 1999). These studies suggest that the fit between individuals and their social environment may be a critical determinant of resilient outcomes.

It also must be acknowledged that particularly stressful experiences can affect social environments as a whole. Trauma can be channeled into attempts at social change by affected individuals, or widespread effects of trauma can produce changes in cultural perspectives that result in important social developments (Bloom, 1998; Tedeschi, Park, & Calhoun, 1998). This social change can be seen as an outcome of resilience and PTG on both the individual and community level.

In conclusion, the interplay between individual-level and environmental-level factors in promoting resilience and PTG should not be underestimated. Discussing stressful events with others may help people to maintain or re-establish a positive self-concept and make sense of the events. Although there is evidence that individual difference factors relate to resilience, a more potent mix includes aspects of the social environment. For example, we have fairly strong evidence from studies of people facing different traumatic events that disclosure of emotions surrounding traumatic events to a receptive audience leads to less avoidant coping and fewer stress-related intrusive thoughts, both of which have been linked to mental health outcomes. Similarly, environments that are full of the resources that social capital brings afford a greater opportunity to cope with trauma in an effective manner.

HOW DOES THE CAPACITY FOR RESILIENCE DEVELOP?

A critical question in this field is, "Where does resilience come from?" To address this question, we must consider the origins of both personal and contextual resources for resilience. Life context is shaped by many social, economic, political, familial, and institutional factors that are too varied to discuss in this chapter. Thus, we will limit our comments to the origins of personal resilience resources, a topic that has received some attention by psychologists.

Bonanno and colleagues' (2002) findings on the relation between "world views" and responses to bereavement suggest that early childhood experiences, particularly parent-child relations, may be critical antecedents to resilience. Children who grow up in an environment that is loving and responsive to their basic needs are likely to form a positive self-image, a general sense of trust in others, and positive expectations about the future (Ahmann, 2002; Masten & Coatsworth, 1998). Perhaps the most often cited evidence of the importance of the early-childhood social environment on resilience in adulthood comes from the Kauai longitudinal study by Werner and Smith (1992). The investigators followed a large birth cohort of high-risk children from before the age of two to the age of

18. A subgroup of children was identified that could be considered resilient because they had normal levels of functioning on multiple developmental and mental health markers. A variety of early childhood factors distinguished the resilient from the not-so-resilient group, including: more social support from family and friends, better quality of care in infancy, and a higher sense of self-worth and intellectual functioning.

Unfortunately, as Masten and Reed (2002) note, our ability to draw strong inferences about the role of the social environment on the development of resilience from the Kauai data is limited for two reasons. First, the analysis actually suggests that relative to non-resilient children, the resilient children may have had relatively lower cumulative risk factors (especially with respect to the quality of their family environment). Second, none of the children in the Kauai study was without risk factors. Thus, it is not clear whether the correlates of good outcomes are predictive of good outcomes in all children, or if they are especially beneficial to children at high risk. In an effort to examine these questions, Masten and her colleagues (1999) identified children who possessed variable levels of risk (low to high) and variable levels of success (low to high) on important developmental outcomes (academic achievement, social behavior, and social competence). The results suggested that resilient youth (high risk, positive developmental outcomes) had much in common with competent youth (low risk, positive developmental outcomes) in terms of intellectual skills and effective parents. However, both resilient and competent youth differed markedly from their maladaptive peers (poor developmental outcomes in either high- or low-risk situations) on personal and social resources.

The findings from Masten and her colleagues (1999) suggest that social and individual traits may be important antecedents to good developmental outcomes in general, as well as in the context of adversity. What we still do not know, however, is specifically how social environments, or even individual traits, translate into resilience. Most of the studies of predictors of resilience examine associations in a static snapshot (e.g., with cross-sectional, correlational studies) or with several static snapshots taken within decades of one another. We need a more fine-grained analysis of what develops in early childhood experiences that translates into successful adaptation to stressors (e.g., exploring what resilient and not-so-resilient individuals think and do during and after stressful events that differentiates their outcomes).

While the early social environment is a modest predictor of adult functioning, the proximal social environment also can influence resilience. We presented some evidence for this statement in previous sections of this chapter. Here, we point to evidence that some interpersonal experiences can promote positive social attitudes, which, in turn, may enable individuals to withstand major life stressors. Recent longitudinal studies have shown that behaviors such as sacrificing or accommodating to a partner in a close relationship provide important diagnostic information about the partner's commitment to the relationship (Wieselquist, Rusbult, Foster, & Agnew, 1999). These commitment-inspired acts promote a cycle of mutual growth and increased interdependence in a couple: commitment promotes pro-relationship acts (e.g., personal sacrifice, accommodation), pro-relationship acts are perceived by the partner and increase feelings of trust, and the increased trust enhances the partner's willingness to become dependent on the relationship, which further cycles back to increase commitment. In committed relationships, individuals can count on their partners to be there when times are tough. As Lepore (1995a) observed, individuals who are trusting of others appear better able to take advantage of social resources during times of stress. There has been relatively little research on how the quality of relationships, such as degree of interdependence and commitment, influences adjustment to life stressors.

This topic would appear to be an obvious direction for future research and intervention (e.g., couple therapy to promote resilience).

Interestingly, a number of theorists have pointed to the role of prior stress exposure as an important determinant of resilience. More than 20 years ago, Garmezy (1983) noted that children who develop into healthy and well-adjusted adults despite their exposure to risk factors—such as poverty, divorce, or racial discrimination—often share the characteristic of having successfully negotiated aversive environmental stimuli early in life. More recently, Dienstbier (1989) made similar observations about the relation between stress exposure and resilience and generated the "toughening hypothesis." This hypothesis maintains that people who have early, repeated exposure to stressors become physiologically toughened or inoculated by the experience. The process that Dienstbier described could be likened to the conditioning of an athlete who, with repeated training, flexing of the muscles, acceleration of the heart, and so forth, is able to endure physical challenges with greater ease than before his or her conditioning began.

The inoculation and toughening hypotheses are striking because they appear to be at direct odds with both contemporary and very early models of stress, which maintain that chronic or repeated stress is likely to be the worst kind (Lepore, 1995; McEwen, 1998; Seeman, Singer, Rowe, Horwitz, & McEwen, 1997). Lepore and Evans (1996) conducted a review of the literature on multiple stressors to evaluate the evidence that repeated exposure to stress contributes to resilience. They found that exposure to multiple stressors precipitates *greater* vulnerability to subsequent stressors, rather than less.

For example, investigators have found that workers in chronically demanding occupations tended to have higher resting levels of diastolic blood pressure, lower cardiovascular responsivity to acute challenges, and delayed cardiovascular recovery following acute challenges—suggesting pathophysiological effects of chronic stress (Schaubroeck & Ganster, 1993). Similarly, others have found that college students with high levels of chronic life stress have exhibited exaggerated blood pressure reactivity to an acute laboratory challenge (e.g., mental arithmetic, giving a speech) (Lepore, Miles, & Levy, 1997). Another study determined that neuroendocrine stress reactivity (i.e., increases in plasma adrenocorticotropin and cortisol responses to acute laboratory stressors) was positively related to having a history of childhood abuse, the number of separate abuse events, and the number of adulthood traumas (Heim et al., 2002). Finally, investigators have shown that trauma-specific stress reactions (intrusive thoughts and avoidance) tended to decrease or resolve within the first 12 months after a single exposure to a life-threatening event, but tended to increase over the first 12 months in individuals with multiple exposures to life-threatening events (Johnsen, Eid, Laberg, & Thayer, 2002). These studies suggest that both early life and recent stress experiences may sensitize rather than inoculate individuals to subsequent stressors, reminding us not to blithely accept romanticized notions that exposure to stress is a good thing—that it will "toughen" us up.

Despite evidence of sensitization responses, it is theoretically possible that experiences of mastery over stressors will confer some protection or inoculation against subsequent stressors. For example, investigators have found that paratrooper trainees have dramatic decreases in physiological reactivity as their training progresses (Ursin, 1978). It has been hypothesized that inoculation is most likely to happen in the following circumstances: in the face of intermittent rather than continuous stressors (Lepore & Evans, 1996; McEwen, 1998); when there is an opportunity to apply effective coping strategies or resources (Rutter, 1987); and when the experience of coping with the stressor leaves a person with a generalized sense of control or self-efficacy (Rutter, 1987). Although these ideas have been

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CONCLUDING REMARKS

Our reflections on resilience revealed a wide variety of definitions, models, and even myths. We have proposed a broad conceptualization of resilience for this relatively young, but promising field of study. This conceptualization includes three facets of resilience: recovery, resistance, and reconfiguration (including PTG). Our examination of each of these facets suggests that resilience is often the product of dynamic interactions between a range of risk and protective factors internal and external to a person at various stages of a person's life. Importantly, the evidence suggests that resilience, as well as PTG, should not be conceived of as static properties of an individual, but as qualities that are variable over time, stressors, and outcomes. Our analysis also suggests that PTG is one possible outcome of reconfiguration processes: whereas reconfiguration resilience may include both positive and negative outcomes, PTG just includes positive outcomes.

Several important take-home messages arise from our review. One is that for those interested in improving mental and physical health outcomes for high-risk populations, it is at least as important to build resources for resilience as it is to remove risk factors. Some of the resources we identified involve positive social environments and coping skills, including cognitive strategies for reappraising stressors. It also may be important at times not to encourage people to dwell on traumatic events (see, e.g., Lepore, Fernandez-Berrocal, Ragan, & Ramos, 2004), but, perhaps, to encourage involvement in life-affirming and uplifting activities that enable people to develop a sense of purpose and meaning in life and allow them to forget about their troubles for awhile.

A second message is that individuals respond to traumatic events in a wide variety of ways, and we must be cautious about imposing one set of standards on others. Most importantly, we should recognize that an absence of pathology does not necessarily mean that unhealthy denial processes or other aberrant psychological processes are at work. Offering individuals unnecessary aid, or encouraging individuals to ruminate about traumatic events or question their responses to such events, may cause more harm than good.

Just as we should not look for pathology after every trauma, we should not romanticize notions of resilience. In particular, we must be cautious not to overly prescribe tonics associated with resilience, such as optimism, disclosure, and positive social exchanges. If individuals are not feeling particularly optimistic, talkative, or social, they may feel that they are failing to live up to others' expectations. Inhibiting one's true feelings can create a sense of alienation and may give others the wrong impression that social support or help is not needed. Worse is the possibility that presenting a positive face or finding benefits in adversity may become so automatic and socially desirable that one falls prey to the notion that any distress or negative thinking contributes to physical disease. Among individuals afflicted with diseases, such as cancer, there is often a social expectation to be strong.

Consider, for example, the success of the Lance Armstrong Foundation's "Live Strong" campaign. Armstrong was a world-class cyclist when he was diagnosed with metastatic cancer at age 25. Not only did he overcome long odds at beating his cancer, he went on to win the Tour de France several more times. Armstrong then established a foundation to increase money for cancer research. To raise funds, the foundation created yellow rubber wristbands with the motto "Wear Yellow, Live Strong." The suggestion is that if

people with cancer apply the same fight and determination as Lance Armstrong, they can beat their cancer. It is clear that people literally buy this message, as over 22 million wristbands have been sold to date and an average of 150,000 are sold daily by the Lance Armstrong Foundation (LAF, 2004). Holland and Lewis (2000) caution against creating such a "tyranny of positive thinking," as it may not bode well for patients.

A third message is that exposure to stress is seldom good and is an unlikely source of resilience. Stress exposure often increases rather than decreases individuals' resistance to future stressors. The factors that seem most critical to promoting resilience are the positive qualities of individuals' early and current social and physical environments, as well as certain positive individual qualities, such as optimism and intelligence. Some theorists have argued that exposure to stressors can lead to resilience, much like exercise can strengthen muscles and make their work easier (Rutter, 1987), whereas others (Collins, Taylor, & Skokan, 1990; Taylor, 1983; Tedeschi & Calhoun, 2004) have argued that traumatic events that challenge individuals' basic assumptions about themselves and the world can open them up to growth experiences. Data are quite limited on these theories, and more work in this area is needed because most of the current theorizing about resilience is based on coarse, cross-sectional, or correlational data. Another implication of our review is that resilience is unlikely in the face of multiple stressors, which one commonly finds in poor and socially disadvantaged populations. In the face of chronic or multiple stressors, people may survive, but their body, mind, and social relations are likely to be adversely affected. Individuals do adapt to chronically adverse situations, but not without costs (Lepore & Evans, 1996). That said, we must also remember that the human accommodations to chronic stressors—or the form that the human body, thoughts, feelings, and social relations take under chronic stress—might be well suited for the circumstance. Just like the gnarled, wind-blown tree observed atop a windy mountain bluff, the shape might not be pretty, but it works well in context.

To conclude, we have learned that resilience takes on a variety of forms, is common, and is not pathological. We also have learned that resilience is more than just a personality trait; it is the product of the person, his or her past experiences, and current life context. By examining the pathways to resilience, and acknowledging its prevalence, we can begin to develop more accurate perceptions of trauma survivors than we currently posses and, perhaps, find ways to promote resilience.

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