References

- Giddens, A. (1991). Modernity and self-identity: Self and society in the late-modern age. Stanford, CA: Stanford University Press.
- Kaminer, W. (1992). I'm dysfunctional, you're dysfunctional: The recovery movement and other self-help fashions. Reading, MA: Addison-Wesley.
- King, L. A., Scollon, C. K., Ramsey, C., & Williams, T. (2000). Stories of life transition: Subjective well-being and ego development in parents of children with Down Syndrome. *Journal of Research in Personality*, 34, 509–536.
- Magai, C., & Nusbaum, B. (1996). Personality change in adult-hood: Dynamic systems, emotions, and the transformed self. In C. Magai & S. H. McFadden (Eds.), Handbook of emotion, adult development, and aging (pp. 403–420). San Diego, CA: Academic.
- McAdams, D. P. (1996). Personality, modernity, and the storied self: A contemporary framework for studying persons. *Psychological Inquiry*, 7, 295–321.
- McAdams, D. P. (in press). The redemptive self: The stories Americans live by. New York: Oxford.

- McAdams, D. P., Reynolds, J., Lewis, M., Patten, A. H., & Bowman, P. J. (2001). When bad things turn good and good things turn bad: Sequences of redemption and contamination in life narrative and their relation to psychosocial adaptation in midlife adults and in students. Personality and Social Psychology Bulletin, 27, 474–485.
- Pals, J. L. (2000). Self-narrative of difficult life experiences in adulthood. Unpublished doctoral dissertation, University of California, Berkeley.
- Pasupathi, M. (2001). The social construction of the personal past and its implications for adult development. *Psychological Bulletin*, 127, 651–672.
- Rosenwald, G., & Ochberg, R. L. (1992). Storied lives: The cultural politics of self-understanding. New Haven, CT: Yale University Press.
- Sherkat, D. E., & Ellison, C. G. (1999). Recent developments and current controversies in the sociology of religion. *Annual Review of Sociology*, 25, 363–394.
- Thorne, A. (2000). Personal memory telling and personality development. Personality and Social Psychology Review, 4, 45–56.

The Notion of Growth Following Stressful Life Experiences: Problems and Prospects

Crystal L. Park

Department of Psychology University of Connecticut

That growth can follow stressful experiences seems obvious. As a researcher who has heard or read the stories of hundreds of people describing their positive changes following stressful life events, as a therapist who has worked with clients dealing with a variety of challenging circumstances, and as a human being who has experienced a variety of stressful experiences in my own life, I am quite convinced that stress-related growth exists. Stressful situations are often transformative (Saakvitne, Tennen, & Affleck, 1998), and, for some people, sometimes, positive change and growth are part of their transformation. In considering stress-related growth, a variety of intriguing questions arise, many of which Tedeschi and Calhoun (this issue) introduce: Who experiences growth? What kinds of growth do people experience? How is growth

achieved? What does growth mean in terms of individuals' adjustment? As enticing and as potentially important as stress-related growth may be, however, there are many problems in the current state of research on this phenomenon that must be addressed to advance our understanding in a rigorously empirical way. This article identifies some of the major problems in this area and suggests some potential ways that they can be addressed.

Defining Growth

Perhaps the most essential question is what is meant by stress-related growth? In assessing growth, some researchers have simply asked individuals how much they have grown as a result of experiencing a situation identified as stressful (e.g., Park & Cohen, 1993; Tomich & Helgeson, 2002). This question presumably assesses a general perception of having experienced positive change. Others researchers have developed scales of perceived benefits or growth (e.g., Behr, Murphy, & Summers, 1992; McMillen & Fisher, 1998; Park, Cohen, & Murch, 1996; Tedeschi & Calhoun, 1996), allowing for the assessment of positive change in a variety of areas. Still, the desire to measure growth in a simple way should not preclude researchers from

In this article, the term stress-related growth is preferred to the term posttraumatic growth for two reasons: First, in the psychological literature, trauma refers to severe events or conditions involving perceived threat to life or bodily integrity, whereas, as Tedeschi and Calhoun (this issue) note, the phenomenon under study encompasses a broader range of stressful events. Research has documented growth from many stressful encounters that may not have reached the level of trauma, but that seem to fall under the purview of the phenomenon described here. Second, in deference to those individuals who have truly suffered traumatic experiences, I reserve the term trauma only to describe situations that truly are.

asking the most basic questions of definition regarding growth. For example, Carver (1998) laid out a set of complex scenarios that could represent growth, such as faster recovery from a future stressor or the ability to tolerate more stress in the future without breaking down. These ways of conceptualizing growth cannot be easily assessed by questionnaire items about such things as developed coping skills, but they are important to keep in mind, at least on a conceptual level, if not on an operational one, when examining stress-related growth. Researchers should heed the urging of Saakvitne et al. (1998) to conduct more descriptive work in this area before foreclosing on the operationalization of growth.

The development of scales to measure growth, however, represents an advance in capturing the construct. Questionnaires can be useful in conducting research on this phenomenon if used with the caution that these scores likely represent only a portion of what we might consider growth. Of course, investigators determine what goes into these scales, and it appears that no particular scale captures all of the domains of growth that have been identified to date. For example, in a sample of people living with AIDS, Siegel and Schrimshaw (2000) found that health behavior change was one of the primary domains of growth identified, but health behavior change items (or other concrete instrumental changes) are rarely included on any of the measures of growth currently in common use.

There is little agreement at present on the dimensions of growth that should be assessed, or whether, in fact, dimensions are meaningful. The dimensions that are assessed by most scales encompass changes in personal strengths and competencies, social relationships, and personal life philosophies (Schaefer & Moos, 1992), but factor analyses using a variety of questionnaires have produced many different factor structures. For example, Tedeschi and Calhoun (1996) identified five domains (greater appreciation of life and changed sense of priorities, warmer and more intimate relationships with others, greater sense of personal strength, recognition of new possibilities or paths for one's life, and spiritual development); McMillen and Fisher (1998) found eight (lifestyle changes, material gain, self-efficacy, family closeness, community closeness, faith in people, compassion, and spirituality); Armeli, Gunthert, and Cohen (2001), excluding well-being, found six (affect regulation, treatment of others, self-understanding, belongingness, personal strength, and optimism); and McFarland and Alvaro (2000), excluding well-being, identified a rather different six (positive social orientation, wisdom and skills, self-insight and appreciativeness, honesty and reliability, spirituality, and opportunities in life).

Thus, the types of growth that people experience appear to differ depending on the instruments used to measure it. It also appears that different populations and different types of stressful events may yield differ-

ent dimensions of growth. For example, in their study of elderly Latinas who were dealing with arthritis, Abraido-Lanza, Guier, and Colon (1998) found patience to be one of the primary dimensions of growth reported; they suggested that the prominence of patience may be a function of this particular group. Even within similar groups dealing with similar stressful situations, however, factor structures seem to shift. Using Behr et al.'s (1992) scale to assess multiple domains, Tomich and Helgeson (2002) found only two factors (personal growth and acceptance) in a sample of women who had survived breast cancer, and in a different sample of breast cancer survivors, they again identified only two factors, but found that these factors were highly correlated and had a factor structure that suggested that there was just one common dimension of growth. Antoni et al. (2001) reported a similar finding; a factor analysis of their 17-item measure of growth comprised only one underlying factor.

Capturing the phenomenon of growth accurately is critically important to answering the questions we pose of it. In addition to domains and factor structures, researchers have raised other concerns about current questionnaire-based assessment. Some researchers have argued that scales should assess negative as well as positive change to more adequately capture the experience of change (cf. Armeli et al., 2001). However, as Park (1998) noted, assessing negative changes in characteristics and resources may not only be distinct from the construct of interest, growth, but may also add little to the literature regarding decrements in functioning and resources following stressful experiences (cf. Armeli et al., 2001). However, there is reason to believe that assessing negative as well as positive changes in the same instrument may facilitate the accurate assessment of growth (i.e., positive change). Because measures of growth often consist of only positive change, they may induce a socially desirable mindset, reducing the validity of the scale (Tomich & Helgeson, 2003). New scales may need to be designed that correct this tendency for a socially desirable response set by embedding negative items, even if those items are treated as filler items. In summary, it appears that the measurement of stress-related growth has a long way to go. It is likely that many researchers will continue to use the available growth questionnaires, but it is hoped that others will take on the difficult but necessary task of carefully examining the conceptual and psychometric issues and developing more sound second-generation measures of growth.

Validity

In their target article, Tedeschi and Calhoun (this issue) describe growth as consisting of "veridical transformative life changes that go beyond illusion"

and that are experienced as "an outcome or ongoing process" rather than a "coping mechanism." It seems that most (e.g., McMillen & Fisher, 1998; Siegel & Schrimshaw, 2000) but not all (e.g., Collins, Taylor, & Skokan, 1990) researchers in this area take a similar conceptual view. However, one of the most difficult aspects of this research is empirically establishing the validity of stress-related growth as a construct independent of people's attempts to make themselves feel better, either as a self-enhancing protective motive or as a deliberate coping effort.

There is a long tradition in the social psychology literature that speaks to motivated self-enhancement, wherein people are motivated to perceive themselves in ways that make them feel better about their current self relative to others or to a previous self (e.g., Ross & Conway, 1986; cf. "response shift," Sprangers & Schwartz, 1999), such that the standards by which one judges oneself or one's quality of life are altered, leading to perceptions of positive change. A recent series of studies directly examined the self-enhancement motive relative to perceptions of stress-related growth (McFarland & Alvaro, 2000). Participants were asked to describe their previous and current selves under a variety of experimental conditions. Essentially, findings indicated that participants reporting on their personal changes following a stressful experience tended to shift their self-reports of their previous selves to be more negative (relative to controls), whereas their current ratings of themselves did not differ from controls who were not reporting on growth. The net effect of denigrating recollected previous selves was to give an impression of positive change. These results suggest that reports of positive change are, at least in part, illusory, and call into question the validity of self-reports of growth. This set of studies is not conclusive, however; for example, participants were not selected because of their experiencing of a particular stressful event. Further, it is possible that asking participants to focus on a previously experienced negative event could create a marker in time by which people would be able to more accurately recollect who they were at that point. Still, researchers must take this challenge to our self-report methodology seriously and design research that can address the issue of self-enhancement tendencies.

A related problem concerns the common tendency of people to cope with stressful situations by identifying positive aspects of the situation (e.g., positive reinterpretation; Carver, Scheier, & Weintraub, 1989). These coping strategies are often related to growth (e.g., Park & Fenster, in press). In other words, individuals may be motivated to cope with trauma by perceiving growth from it, but this perception does not necessarily reflect genuine positive change. Instead, individuals may exaggerate self-improvement to help alleviate their distress. It is true that growth is often ac-

companied by high scores on measures of distress, in particular posttraumatic stress disorder (PTSD) symptomatology (e.g., Park et al., 1996). Although, as discussed later, some researchers maintain that growth and adjustment are independent constructs, one might be less convinced of the veridicality of reports of high levels of growth from a person who is also reporting high levels of distress and coping efforts than from someone who reports high levels of growth, low levels of distress and coping, and, perhaps, high levels of event resolution. The issue of event resolution has rarely been addressed in research but may be a promising way to disentangle issues of coping and growth (Cohen, Hettler, & Pane, 1998).

Another suggestion that awaits rigorous empirical testing involves examining the extent to which individuals report both positive and negative changes following a stressor, the idea being that this combination might reveal the extent of defensiveness that an individual is exhibiting, and that those lower on defensiveness (i.e., reporting a balance of positive as well as negative changes) would be more likely to be reporting accurately on their growth (e.g., Tomich & Helgeson, 2003). This is a promising idea, but empirical tests will require a more sophisticated methodology than that presently used by most investigators.

To date, researchers have attempted to demonstrate the validity of growth in several ways, including relying on informant reports of growth, examining changes in psychosocial resources across time, and examining growth in the context of adjustment. Only a few studies have attempted to establish the existence of validity independent of self-report by asking informants to report on the growth experienced by the participants (e.g., Park et al., 1996; Weiss, 2002). Both of these studies found moderate correlations between self-reports and informant reports of growth. Because much that individuals regard as growth involves private inner processes, it is encouraging that significant others would be aware of it. However, it is possible that study participants discussed many of their perceived positive changes with informants and that these results simply reflect informants' reports of participants' self-reports to them.

Another way that researchers have attempted to establish the validity of growth is by examining changes in resources such as social support or personality across time. In two longitudinal studies of college students reporting on their most stressful event in the past 6 months, Park et al. (1996) found that stress-related growth was related to increases in positive affectivity, optimism, and social support, and Park and Fenster (in press) found that growth was related to increases in mastery and intrinsic religiousness across time. Future research might focus on examining correlates of reported positive change with changes in other self-report—or, better yet, behavioral—measures, as reflections of the validity of stress-related growth.

Finally, some researchers have attempted to establish the validity of stress-related growth by relating it to adjustment following the stressor. As Tedeschi and Calhoun (this issue) note, several points of view have been expressed (see Park, 1998): It may be that perceived growth is different from adjustment, and not necessarily related (e.g., existential frailty, vulnerability), or, alternately, that perceived growth is de facto evidence of adjustment, which involves taking people's self-reports at face value. A third possibility is that perceived growth is conceptually distinct from adjustment, but would be expected, under certain circumstances, to be related. As discussed in the later section on adjustment, there is little consensus on this issue or whether it is a useful venue for examining the issue of validity.

It behooves researchers in this area to take the issues of definition and validity very seriously. Findings such as those of McFarland and Alvaro (2000) present serious challenges to our self-report methodology and compel us to deal with this vexing issue head on. Only very carefully designed and sophisticated research that takes into account these problems will be helpful in establishing the validity of the construct as more than just illusion or coping and worthy of study in its own right.

Mechanisms

If we assume that stress-related growth is a valid, measurable phenomenon, how does it come about? In their target article, Tedeschi and Calhoun (this issue) place a heavy emphasis on worldview change, using the analogy of rebuilding after an earthquake. They propose that following a stressful experience, people rebuild their schemas to incorporate the trauma and possible future events, making them more shatterproof. According to Tedeschi and Calhoun, this "restructuring of the fundamental components of the assumptive world" is experienced as growth. This theory, although plausible, appears to be based primarily on anecdote and speculation. Studies that have examined worldviews that change following stressful encounters yield mixed results, but overall little evidence that there is much change compared to controls for people suffering a variety of life stressors (e.g., Overcash, Calhoun, Cann, & Tedeschi, 1996) including breast cancer (e.g., Tomich & Helgeson, 2002). When worldview change following trauma is documented, it appears to be primarily in those with difficulties such as PTSD (e.g., Foa, Ehlers, Clark, Tolin, & Orsillo, 1999). Even in studies finding differences in worldviews that are statistically significant, the differences are typically small in terms of actual magnitude (e.g., Janoff-Bulman, 1989) and typically concern views of oneself rather than of the world, such as self-esteem (e.g., Franklin, Janoff-Bulman, & Roberts,

1990). Thus, evidence of general "shattering" of worldviews is sparse, and documented relations between worldview change and growth are even sparser. On the contrary, one recent longitudinal study of college students found no evidence that worldview change predicted stress-related growth (Park & Fenster, in press).

On the other hand, Tedeschi and Calhoun (this issue) present an array of evidence that cognitive processing or rumination, broadly defined, is related to growth. Numerous recent studies have found that reports of growth are accompanied or predicted by high levels of cognitive processing (e.g., Bower, Kemeny, Taylor, & Fahey, 1998; Calhoun, Cann, Tedeschi, & McMillan, 2000; Park et al., 1996), although not all studies find relations (e.g., Cordova, Cunningham, Carlson, & Andrykowski, 2001). Tedeschi and Calhoun also describe some of the confusion in the assessment of cognitive processing. They settle on the term cognitive processing, but use the word to refer to what Martin and Tesser (1996) called rumination, defined as conscious thoughts that are instrumental in pursuing goals and that are "not necessarily unwanted or disruptive" (p. 7). Tedeschi and Calhoun maintain that "deliberate cognitive processing is crucial to growth outcomes" that goes beyond "intrusive, automatic thinking." Although some studies on growth have defined and assessed cognitive processing as a deliberate process (e.g., Bower et al., 1998), cognitive processing is usually considered to be automatic and is typically operationalized as experiences of intrusion and avoidance and typically assessed using the Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979; e.g., Lepore, Ragan, & Jones, 2000; Lutgendorf & Antoni, 1999).

The use of the IES or similar measures of intrusions and other symptomatology to measure cognitive processing is somewhat problematic, because the IES (and similar measures) are also used to assess PTSD symptomatology. Studies that find that growth and the IES are positively related could be interpreted to mean, among other things, that cognitive processing leads to growth, or that growth is related to PTSD symptoms, or both, and there is some evidence that both are true (see Park et al., 1996). Clearly, more precision in conceptualization and measurement is needed. In particular, research examining both the automatic (e.g., intrusive thoughts) and the deliberate (e.g., positive reinterpretation coping) aspects of cognitive processing will be helpful in delineating the process of growth.

A meaning-making coping framework is useful in integrating the existing findings on the process of growth following stressful life events (O'Leary, Alday, & Ickovics, 1998; Park & Folkman, 1997). It appears that events or experiences that are traumatic or challenging might challenge or violate in-

dividuals' worldviews (e.g., fairness, justice, control) as well as their goals and purposes (Park & Folkman, 1997). In responding to such major challenges, individuals respond with a variety of problem- and emotion-focused coping strategies, but they also often do an immense amount of internal coping focused on changing the meaning of either their worldviews (global beliefs and goals) the stressful situation, or both. In other words, they process this information cognitively in search of reducing the violation of their beliefs and goals, a process also called meaning making. Although sometimes the violation of global beliefs and goals is so immense that "seismic changes" are made in them (Janoff-Bulman, 1992), it is much more likely that over time individuals come to see the stressful situation and their changed circumstances in more positive and less stressful ways, and perhaps slightly modify their beliefs and major life goals (e.g., Park & Blumberg, 2002). This process of meaning making itself is often considered of value to people because it provides them with an opportunity to rethink their views, goals, priorities, and situations, and they often identify positive changes in themselves as a result of this review, or they make positive changes in response to it (see O'Leary et al., 1998, for a review). Thus, stress-related growth can be viewed as an outcome of this meaning-making coping process.

Tedeschi and Calhoun (this issue) describe some of the individual characteristics that appear to facilitate growth, such as extraversion and openness to new experience. There are other characteristics that have shown up fairly consistently in the literature that should be included in future studies. For example, numerous studies have found that women report more growth than do men (e.g., Tedeschi & Calhoun, 1996). Regarding age, in some studies, age is positively related to growth (e.g., McMillen, Zuravin, & Rideout, 1995), whereas in others, age is inversely related to growth (e.g., Lechner et al., 2002). One other fairly consistent predictor of growth that should be mentioned is that of religiousness and spirituality. In virtually every study that has examined this relation, religious or spiritual variables (including intrinsic, extrinsic, and quest orientations; religious attributions; and religious coping) have been identified as strong correlates or predictors of growth (e.g., Calhoun et al., 2000; Pargament, Koenig, & Perez, 2000; Park & Fenster, in press; Tarakeshwar & Pargament, 2001), and, as noted earlier, changes in religiousness and spirituality are often reported as positive outcomes of the stressful experience as well. Research is needed that focuses on the roles of religiousness and spirituality as multidimensional determinants of growth as well as changes in these dimensions that are experienced as growth.

Relation of Growth and Adjustment

What does growth mean in the lives of those who experience it? The answer to this question is unclear, both theoretically and empirically. In their target article, Tedeschi and Calhoun (this issue) argue that growth "involves a movement beyond pretrauma levels of adaptation" and "qualitative change in functioning" but also that growth can "coexist with the residual distress." The importance of this question, to some extent, turns on whether growth (or the perception of growth) is considered an important outcome in and of itself, or whether its value as a construct of study is related to some other consequence, such as how people feel, function, and behave. In other words, growth can be conceptualized as being totally independent of adjustment, and therefore, its relations with other variables might be of passing interest, but the central focus of research and clinical work would be on growth per se, or growth can be considered an important outcome because it has some implications for the life of the individual. According to this second perspective, the issue of growth and adjustment is a central one, because growth, in the absence of any improvement in feeling, functioning, or behavior, would be of little import.

By now, a fair amount of research has accumulated addressing relations between growth and adjustment outcomes, and most of this research has reported positive relations between them. For example, in a longitudinal study, survivors of disasters (e.g., plane crash, mass killing, or tornado) who reported experiencing growth shortly afterward were less likely to have PTSD 3 years later (McMillen, Smith, & Fisher, 1997). As Tedeschi and Calhoun (this issue) noted, a small number of studies have even examined relations between stress-related growth and physical health outcomes, and these also report primarily positive relations between growth and health indexes. For example, a study of women with early-stage breast cancer found that increases in stress-related growth were related to reduced levels of serum cortisol (Cruess et al., 2000). On the other hand, a number of studies have reported no relations between stress-related growth and mental health outcomes. For example, in a longitudinal study of people who had rheumatoid arthritis. growth from their joint pain was unrelated to daily mood (Tennen, Affleck, Urrows, Higgins, & Mendola, 1992), and in their sample of women with breast cancer, growth was unrelated to measures of depression, PTSD symptomatology, or well-being (Cordova et al., 2001).

The relation between stress-related growth and adjustment is complicated by a number of factors that may account for these discrepant findings. For example, it may be that growth is more closely related to some measures of adjustment than to others, or that the relation depends on the time frame assessed, or

whether coping and denial are accounted for, or it may be that positive relations occur under certain circumstances or for some types of people or events.

Growth Measures

Some of the inconsistencies regarding growth and adjustment may be due to the differences in measures used. For example, in a sample of cancer survivors, Tomich and Helgeson (2002) found that reports of "perceiving benefits" were associated with positive affect, but using a scale of positive contributions, neither factor (personal growth or acceptance) was associated with quality of life.

Adjustment Measures

Stress-related growth may be more closely related to some measures of adjustment than others, and the variety of measures used in studies of growth may account for at least some of the inconsistencies among studies. Some researchers have theorized that growth may be related more closely to positive than to negative outcomes, or to measures that are less global and more closely tied to the event (e.g., Tomich & Helgeson, 2003).

Another sticky issue referred to earlier is that, in research on stress-related growth, the IES is one of the most commonly used measures of PTSD symptoms but is also a very widely used measure of cognitive processing (Park et al., 1996). This overlap is because intrusions and avoidance reflect the normal processes of integrating distressing material (Horowitz, 1997), but also reflect PTSD symptomatology. Therefore, studies attempting to describe the relation between growth and PTSD symptoms must be clear about how they are operationalizing symptomatology.

Time Frame

The time frame in which growth and adjustment are assessed may also determine whether and how growth is related to adjustment (Tomich & Helgeson, 2003). For example, when individuals are asked about benefits early in the coping process, perceptions of growth may be related to factors that may not be healthy (i.e., distress). In contrast, growth reported later in the coping process may reflect more lasting substantive life changes that have positive consequences for functioning. In a longitudinal study of family members' loss of a loved one, the relation between growth and adjuststronger over grew time (Davis, Nolen-Hoeksema, & Larson, 1998).

Active Coping, Denial, and Distress

Somewhat related to the issue of time frame, it may be that relations between growth and adjustment are most (or only) observable when the degree of current event stressfulness or resolution is taken into account. In other words, those who are less stressed or who have made meaning from their stressful situation and are no longer actively coping with it will be reporting on outcomes of their coping, whereas those who are more stressed and who are in the midst of coping may not have truly grown (yet; Park, 1998).

Moderators

It may be that growth is related to measures of adjustment when moderator effects are taken into account. That is, for some people, under some circumstances, growth is related to adjustment. Among others, potentially important moderators to examine include personality variables, psychosocial resources, stressfulness of the event, and type of event. Tedeschi and Calhoun (this issue) describe some of the inconsistent findings regarding optimism and growth and theorize that those low in optimism may be the ones who would benefit most from growth. Armeli et al.'s (2001) sophisticated cluster analysis of growth patterns indicates that certain types of appraisals and coping are predictive of more growth when they occur in the presence of more psychosocial resources. For example, higher threat appraisals were related to higher growth when individuals also had higher levels of social support. It is possible that events that are moderately stressful but not overwhelmingly so would lead to more growth and possibly to better adjustment. For example, one study of breast cancer patients found that growth for those with more severe cancer was associated with more emotional distress (Tomich & Helgeson, 2003). Finally, certain types of event may give rise to particular types of growth as well as closer links between growth and adjustment than others, although little research is available to address this issue at present.

Given all of these considerations, it appears that the question of whether growth is related to adjustment is far too simplistic, and that more refined versions of the question may yield more helpful answers in future research.

Conclusions

The research that has been conducted on the notion of stress-related growth to date is promising. Findings with a variety of populations, using a variety of operationalizations, and employing a variety of methodologies, provide converging evidence for the exis-

stress-related of growth and characterization of how it might come about and how it is related to adjustment. However, research in this field is still very early in its development, and with empirically rigorous future research, opportunities for significant advances in our understanding abound. As Tedeschi and Calhoun (this issue) note, longitudinal, prospective research is needed. New studies using sophisticated conceptualizations and methods should examine a variety of stressful events and attend to the issues raised here, including the processes through which growth occurs, particularly within a meaning-making framework. Attention must be given to issues such as construct validity, timing, process, and individual differences.

One other intriguing area of investigation is that of how cultural theories and cultural differences might influence the experience of growth following stressful experiences. Several studies have reported that race and socioeconomic status (SES) may make a difference in rates of reported growth. For example, in studies of women with breast cancer, Cordova et al. (2001) found that SES was positively related to growth, but Tomich and Helgeston (2003) found higher levels of growth in lower SES and minority participants. Meyerowitz, Richardson, Hudson, and Leedham (1998) described how different cultural and subcultural theories about stressful events and suffering might influence their responses to illness. Cultural theories might influence the amount of growth that individuals expect and experience as well (McFarland & Alvaro, 2000), a hypothesis that awaits future research.

Note

Crystal L. Park, Department of Psychology, 406 Babbidge Road, Unit 1020, University of Connecticut, Storrs, CT 06269–1020. E-mail: crysdara@aol.com

References

- Abraido-Lanza, A. F., Guier, C., & Colon, R. M. (1998). Psychological thriving among Latinas with chronic illness. *Journal of Social Issues*, 54, 405–424.
- Antoni, M. H., Lehman, J. M., Kliboum, K. M., Boyers, A. E., Culver, J. L., Alferi, S. M., et al. (2001). Cognitive-behavioral stress management intervention decreases the prevalence of depression and enhances benefit finding among women under treatment for early-stage breast cancer. *Health Psychology*, 20, 20–32.
- Armeli, S., Gunthert, K. C., & Cohen, L. H. (2001). Stressor appraisals, coping, and post-event outcomes: The dimensionality and antecedents of stress-related growth. *Journal of Social and Clinical Psychology*, 20, 366–395.
- Behr, S. K., Murphy, D. L., & Summers, J. A. (1992). User's manual: Kansas Inventory of Parental Perceptions. Lawrence: University of Kansas Press.

- Bower, J. E., Kemeny, M. E., Taylor, S. E., & Fahey, J. L. (1998). Cognitive processing, discovery of meaning, CD4 decline, and AIDS-related mortality among bereaved HIV-seropositive men. Journal of Consulting and Clinical Psychology, 66, 979–986.
- Calhoun, L. G., Cann, A., Tedeschi, R. G., & McMillan, J. (2000). A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *Journal of Trau*matic Stress, 13, 521–527.
- Carver, C. S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues*, 54, 245–266.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267–283.
- Cohen, L. H., Hettler, T. R., & Pane, N. (1998). Assessment of posttraumatic growth. In R. G. Tedeschi, C. L. Park, & L. Calhoun (Eds.), Posttraumatic growth: Positive changes in the aftermath of crisis (pp. 23–42). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Collins, R. L., Taylor, S. E., & Skokan, L. A. (1990). A better world or a shattered vision? Changes in life perspectives following victimization. Social Cognition, 8, 263–285.
- Cordova, M. J., Cunningham, L. L. C., Carlson, C. R., & Andrykowski, M. A. (2001). Posttraumatic growth following breast cancer: A controlled comparison study. *Health Psychology*, 20, 176–185.
- Cruess, D. G., Antoni, M. H., McGregor, B. A., Kilbourn, K. M., Boyers, A. E., Alferi, S. M., et al. (2000). Cognitive-behavioral stress management reduces serum cortisol by enhancing benefit finding among women being treated for early stage breast cancer. *Psychosomatic Medicine*, 62, 304–308.
- Davis, C. G., Nolen-Hoeksema, S., & Larson, J. (1998). Making sense of loss and benefiting from the experience: Two construals of meaning. *Journal of Personality and Social Psy*chology, 75, 561–574.
- Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. M. (1999). The Posttraumatic Cognitions Inventory (PTCI): Development and validation. *Psychological Assessment*, 11, 303–314.
- Franklin, K. M., Janoff-Bulman, R., & Roberts, J. E. (1990). Long-term impact of parental divorce on optimism and trust: Changes in general assumptions or narrow beliefs? *Journal of Personality and Social Psychology*, 59, 743–755.
- Horowitz, M. J. (1997). Cognitive psychodynamics: The clinical use of states, person schemas, and defensive control process theories. In D. J. Stein (Ed.), Cognitive science and the unconscious (pp. 189–205). Washington, DC: American Psychiatric Press.
- Horowitz, M., Wilner, N., & Alvarez, W. (1979). Impact of Event Scale: A measure of subjective distress. *Psychosomatic Medi*cine, 41, 209–218.
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. Social Cognition, 7, 113–136.
- Janoff-Bulman, R. (1992). Shattered assumptions: Towards a new psychology of trauma. New York: Free Press.
- Lechner, S., Zakowski, S. G., Antoni, M. H., Greenhawt, M., Block, K., & Block, P. (2002). Do sociodemographic and disease-related variables influence benefit-finding in cancer patients? Psycho-Oncology, 11, 1–9.
- Lepore, S. J., Ragan, J. D., & Jones, S. (2000). Talking facilitates cognitive-emotional processes of adaptation to an acute stressor. *Journal of Personality & Social Psychology*, 78, 499–508.
- Lutgendorf, S. K., & Antoni, M. H. (1999). Emotional and cognitive processing in a trauma disclosure paradigm. Cognitive Therapy and Research, 23, 423–440.
- Martin, L. L., & Tesser, A. (1996). Some ruminative thoughts. In R. S. Wyer (Ed.), Ruminative thought: Advances in social cogni-

- tion (Vol. 9, pp. 1–48). Mahwah, NJ: Lawrence Erlbaum Associates. Inc.
- McFarland, C., & Alvaro, C. (2000). The impact of motivation on temporal comparisons: Coping with traumatic events by perceiving personal growth. *Journal of Personality and Social Psy*chology, 79, 327–343.
- McMillen, J. C., & Fisher, R. H. (1998). The Perceived Benefit Scales: Measuring perceived positive life changes after negative events. Social Work Research, 22, 173–186.
- McMillen, J. C., Smith, E. M., & Fisher, R. H. (1997). Perceived benefit and mental health after three types of disaster. *Journal of Consulting and Clinical Psychology*, 65, 733–739.
- McMillen, C., Zuravin, S., & Rideout, G. (1995). Perceived benefit from child sexual abuse. *Journal of Consulting and Clinical Psychology*, 63, 1037–1043.
- Meyerowitz, B., Richardson, J., Hudson, S., & Leedham, B. (1998).
 Ethnicity and cancer outcomes: Behavioral and psychosocial considerations. *Psychological Bulletin*, 123, 47–70.
- O'Leary, V. E., Alday, C. S., & Ickovics, J. R. (1998). Models of life change and posttraumatic growth. In R. G. Tedeschi, C. L. Park, & L. Calhoun (Eds.), Posttraumatic growth: Positive changes in the aftermath of crisis (pp. 127–151). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Overeash, W. S., Calhoun, L. G., Cann, A., & Tedeschi, R. G. (1996). Coping with crises: An examination of the impact of traumatic events on religious beliefs. *Journal of Genetic Psychology*, 157, 455–464.
- Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of Clinical Psychology*, 56, 519–543.
- Park, C. L. (1998). Post-traumatic growth and adjustment. In R. Tedeschi, C. L. Park, & L. Calhoun (Eds.), Post-traumatic growth: Theory and research on processes of change in the aftermath of crises (pp. 153–178). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Park, C. L., & Blumberg, C. J. (2002). Disclosing trauma through writing: Testing the meaning-making hypothesis. *Cognitive Therapy and Research*, 26, 597–616.
- Park, C. L., & Cohen, L. H. (1993). Religious and nonreligious coping with the death of a friend. Cognitive Therapy and Research. 17, 561–577.
- Park, C. L., Cohen, L. H., & Murch, R. (1996). Assessment and prediction of stress related growth. *Journal of Personality*, 64, 71–105.

- Park, C. L., & Fenster, J. A. (in press). Stress-related growth: Predictors of occurrence and correlates with psychological adjustment. *Journal of Social and Clinical Psychology*.
- Park, C. L., & Folkman, S. (1997). Meaning in the context of stress and coping. General Review of Psychology, 1, 115–144.
- Ross, M., & Conway, M. (1986). Remembering one's own past: The construction of personal histories. In R. M. Sorrentino & E. T. Higgins (Eds.). The handbook of motivation and cognition: Foundations of social behavior (pp. 122–144). New York: Guilford.
- Saakvitne, K., Tennen, H., & Affleck, G. (1998). Exploring thriving in the context of clinical trauma theory. *Journal of Social Issues*, 54, 279–300.
- Schaefer, J. A., & Moos, R. (1992). Life crises and personal growth.
 In B. Carpenter (Ed.), Personal coping: Theory, research, and application (pp. 149–170). Westport, CT: Praeger.
- Siegel, K., & Schrimshaw, E. W. (2000). Perceiving benefits in adversity: Stress-related growth in women living with HIV/AIDS. Social Science and Medicine. 51, 1543–1554.
- Sprangers, M. A. G., & Schwartz, C. E. (1999). Integrating response shift into health-related quality of life research: A theoretical model. Social Science & Medicine, 48, 1507–1515.
- Tarakeshwar, N., & Pargament, K. I. (2001). Religious coping in families of children with autism. Focus on Autism and Other Developmental Disabilities, 16, 247–260.
- Tedeschi, R. G., & Calhoun, L. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9, 455–471.
- Tennen, H., Affleck, G., Urrows, S., Higgins, P., & Mendola, R. (1992). Perceiving control, construing benefits, and daily processes in rheumatoid arthritis. *Canadian Journal of Behavioral Science*, 24, 186–203.
- Tomich, P. L., & Helgeson, V. S. (2002). Five years later: A cross-sectional comparison of breast cancer survivors with healthy women. *Psycho-Oncology*, 11, 154–169.
- Tomich, P. L., & Helgeson, V. S. (2003). Is finding something good in the bad always good? Benefit finding among women with breast cancer. Unpublished manuscript.
- Weiss, T. (2002). Posttraumatic growth in breast cancer survivors. Paper presented at the Annual Meeting of the American Psychosomatic Society. Phoenix, AZ.

Toward Understanding Posttraumatic Growth: Commentary on Tedeschi and Calhoun

Annette L. Stanton and Carissa A. Low

Department of Psychology University of California, Los Angeles

Along with others who catalyzed theoretical and empirical attention to the perception of positive change from extremely challenging experiences (e.g., Affleck, Tennen, Croog, & Levine, 1987; Park, Cohen, & Murch, 1996; Taylor, 1983), Tedeschi and Calhoun (this issue) are among the leaders in illuminating the phenomenon of posttraumatic growth. They and many other researchers have established without question that individuals undergoing trauma often perceive concomitant positive life changes. Our own research

and clinical experience with individuals and couples facing such health-related adversities as cancer and infertility also convince us that abundant gain can arise from struggle and loss. Important questions remain, however, regarding the conceptualization of posttraumatic growth, its antecedents and adaptive consequences, and the translation of findings regarding posttraumatic growth to the clinical arena. We briefly address each of these areas, with the goal of further stimulating theoretical and empirical progress in understanding posttraumatic growth.

Copyright of Psychological Inquiry is the property of Lawrence Erlbaum Associates and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.