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FLOURISHING UNDER FIRE: RESILIENCE AS A PROTOTYPE OF CHALLENGED THRIVING

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Positive human functioning is perhaps most remarkable when evident in contexts of significant life challenge and adversity. It is then, when individuals are being tested, that much becomes known about human strengths—what they are, how they come about, how they are nurtured or undermined. The growing literature on human resilience addresses this juxtaposition of being well in the face of difficulty. In this chapter, we briefly examine previous research on resilience—how the construct has been defined and measured and what have been identified as key protective factors and resources to account for such resilience. We consider these questions with a brief focus on studies of children as well as more lengthy consideration of research on adults and elderly individuals (where our own work has been conducted). Investigations of resilience are increasingly prominent in both phases of life. We then compare studies of resilience conducted at these early and later periods of the life course, giving emphasis to how the two literatures inform each other. We conclude the chapter with a discussion of targeted research priorities designed to extend and apply knowledge of positive human functioning in the face of challenge—in other words, the capacity to flourish under fire.

What follows this introduction rests on the premise that the study of flourishing (i.e., delineating positive features of the human condition) and

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the study of resilience (i.e., elaborating the capacity to prevail in the face of adversity) yield fruitful advances when joined together. Conceptions of flourishing articulate the nature of human strengths and well-being and thereby offer enriched formulations of what it means to thrive under challenge. Much of the literature on resilience has emphasized the avoidance of negative outcomes (e.g., psychological, social, emotional, or physical problems), rather than the presence of positive outcomes. Alternatively, the study of resilience brings to the literature on flourishing greater insight about how human strengths come to be, including the observation that they are sometimes forged in trial and tribulation. At the extreme end, in fact, is the proposition that particular heights of the human experience, what some call thriving, are known *only* by those who have run the gauntlet. Whether ultimate human strengths emerge from extremes of human suffering is an open and controversial question. We do not invoke the necessity that one must know pain to find the essence of what is good in life; rather, we see research on resilience as a valuable realm of balance. That is, it draws on the negative in human experience by articulating the many ways in which life can be hard, but it also emphasizes the positive in describing how some, despite (or because of) their travail, are able to love, work, play—in short, embrace life. Such a combination avoids the sometimes excessively upbeat tone that accompanies studies of well-being or the overdone darkness characterizing research on human maladies. William James (1902/1958) richly depicted this contrast long ago, with his juxtaposition of “healthy-mindedness” and “the sick soul.” A leading challenge of the present era is to recognize both darkness and light as central to understanding the human condition.

RESILIENCE IN CHILDHOOD: CLASSIC STUDIES AND NEW VENUES

In reviewing the literature on childhood resilience, we first examine five types of adversity to which children have been exposed, and then consider the factors studied as possible protective influences. We also address work that conceptualizes resilience from a personality perspective. We conclude the section on childhood with consideration of needed next steps to advance the research.

Varieties of Childhood Risk

The study of resilience in childhood was launched by several classic investigations that revolved around children living under adverse conditions.

Rutter's 10-year study, for example, focused on children whose parents were diagnosed as mentally ill. The intriguing finding was that many of these children did not themselves become mentally ill or exhibit maladaptive behaviors (Rutter, 1985, 1987; Rutter, Maughan, Mortimore, & Ouston, 1979). Based on these observations, Rutter formulated resilience as the positive pole of an individual's response to stress and adversity (Rutter, 1990). *Positive* in Rutter's work frequently referred to the absence of the negative (e.g., adverse temperament, conduct disorders, affective disorders, depression) in overall functioning.

In other classic work, Garmezy and colleagues (Garmezy, 1991, 1993; Garmezy, Masten, & Tellegen, 1984) followed children from low socioeconomic status backgrounds who lived among negative family environments. Again, although some showed less competence and more disruptive profiles, others of these disadvantaged children were judged to be competent (by teachers, peers, school records) and did not display behavior problems. Studies of children of schizophrenic mothers also played a crucial role in Garmezy and Masten's formulations of childhood resilience. Many of these children thrived despite their high-risk status (Garmezy, 1974; Garmezy & Streitman, 1974; Masten, Best, & Garmezy, 1990). In these investigations, resilience was formulated as the capacity for recovery and maintaining adaptive functioning following incapacity (Garmezy, 1991) or the positive side of adaptation after extenuating circumstances (Masten, 1989).

Other pioneering research was conducted by Werner and colleagues (Werner, 1993, 1995; Werner & Smith, 1977), who followed a cohort of children born in Kauai for more than three decades, one third of whom were designated as high-risk because they were born into poverty and lived in troubled environments (parental psychopathology, family discord, poor child-rearing conditions). Of these high-risk children, one third grew up to be competent, confident, and caring adults. Werner's conception of resilience emphasized sustained competence under stress (Werner, 1995; Werner & Smith, 1992).

Protective Factors

Across these studies, there was pervasive interest in factors that could help account for positive responses to stress or adversity (Masten & Garmezy, 1985; Rutter, 1985). The aim was to show *how* children exposed to chronic poverty, parental psychopathology, parental divorce, serious care-giving deficits, or the horrors of war did not show psychological or health dysfunction. Werner (1995) referred to such factors as the mechanisms that moderate (ameliorate) a person's reaction to a stressful situation or chronic adversity so that adaptation is more successful than if protective factors were absent.

Frequent candidates to account for stress resistance in children have included temperament and personality attributes, family cohesion and warmth, and external social supports (Garmezy, 1993), as well as high IQ, problem-solving abilities, quality parenting, stable families, and high socioeconomic status (Garmezy et al., 1984). Masten's (1999) "short list" of protective factors included parenting quality, intellectual functioning, and self-perceptions (e.g., self-efficacy). Proffering an organizational framework, Werner (1995) distinguished between protective factors *within the individual* (e.g., affectionate and good-natured in infancy and early childhood; outgoing, active, autonomous, bright, and possessing positive self-concepts in middle childhood and adolescence); those *in the family* (close bonds with at least one nurturing, competent, emotionally stable parent); and those *in the community* (support and counsel from peers and elders in the community). Analytically, such protective factors have been construed as compensatory factors that have direct, independent effects on outcomes (Garmezy et al., 1984; Masten, 1989) or as interactive influences that moderate the effects of exposure to risk (Rutter, 1985, 1987; Zimmerman & Arunkumar, 1994).

Resilient Personalities

Other lines of resilience research in childhood emerged, not from the study of children growing up under adverse circumstance but from longitudinal studies of personality. The typological work of Jack Block (1971; Block & Block, 1980) described the "ego-resilients" among adolescents and young adults as those who were well-adjusted and interpersonally effective. Other personality studies (Robins, John, Caspi, Moffitt, & Stouthamer-Loeber, 1996) have adopted a typological approach to resilience. In a mixed ethnic sample of adolescent boys, those with resilient personality profiles were described as assertive, verbally expressive, energetic, personable, dependable, open-minded, smart, and self-confident. They explored implications of such characteristics for subsequent developmental problems and outcomes—those with resilient personalities were found to be successful in school, unlikely to be delinquents, and relatively free of psychopathology.

Luthar (1991) also focused on high-risk adolescents, defining risk both in terms of negative life events and sociodemographic variables (e.g., family size, ethnicity, parents' education, and occupation). The central question was why some inner-city ninth graders with high profiles of risk were able to maintain socially competent behaviors (measured by teacher ratings, grades, peer ratings). Moderator variables such as intelligence, internal locus of control, social skills, ego development, and positive life events were investigated. Ego development was found to be a compensatory factor directly related to competence, whereas locus of control and social skills emerged

as interactive, moderating factors. It is important to note that this study revealed that those labeled as resilient were also significantly more depressed and anxious than competent children from low-stress backgrounds. Thus, their apparent strengths were accompanied by select areas of vulnerability.

Needed Next Steps

Recent reviews of the burgeoning literature on resilience in childhood and adolescence (Glantz & Sloboda, 1999; Luthar, Cicchetti, & Becker, 2000; Masten, 1999) underscore the need for greater operational precision and consistency in defining resilience as well as in specifying protective and vulnerability factors. The multidimensional nature of resilience—the fact that resilience in one realm does not guarantee resilient in all realms (e.g., educationally, emotionally, behaviorally)—has received increased attention, along with greater emphasis on the “ontogenetic instability” of resilience (i.e., whether high-risk individuals *maintain* consistently positive adjustment over the long term). Complexity is another recurrent theme in these reviews—the idea that resilience involves a complex interplay of multiple influences over time and that magic-bullet explanations are not likely to be found. Although personal characteristics of individuals continue to receive attention, there is growing emphasis on the important contexts surrounding children’s lives (Taylor & Wang, 2000)—in the family, in the community and neighborhood, and even the surrounding cultural context. Across these reviews, resilience researchers underscore the need to *measure* risk factors, rather than infer them or assume they are present. Not all children exposed to parental psychopathology or alcoholism have experienced abusive or neglectful parenting, for example.

From the perspective of human flourishing, it is noteworthy that scholars of childhood resilience struggle with the task of delineating what constitutes positive adaptation: Should it be construed as secure attachments, development of autonomous self, emotional health, academic success, or positive relationship with peers? Further, should these constructs be integrated to create composite constructs of positive adaptation? Distinctions between adequate versus excellent functioning, between surviving and thriving are recurrently emphasized. Luthar and Cushing (1999), for example, distinguish between competence and absence of maladjustment in defining resilient outcomes. There is also growing awareness of the need to assess adjustment from multiple vantage points: parents, teachers, peers, as well as levels of academic success or performance on standardized achievement tests. Comparative referents may be important—in other words, good adjustment among those in high-risk groups may not indicate competence among those in more typical, low-risk groups.

RESILIENCE IN ADULTHOOD AND LATER LIFE

After childhood and adolescence, the literature on resilience takes two primary forms. The first deals directly with the challenges of aging and how they are successfully negotiated. The second addresses the emergent literature growth through trauma—in other words, how it is possible that positive outcomes can be products of suffering. Both of these realms are briefly summarized next, although comparatively greater emphasis is given to the challenges of aging, because this is the emphasis of our research.

Challenges of Aging

Among researchers who explicitly address the life course significance of resilience, Staudinger, Marsiske, and Baltes (1995) have distinguished between resilience as maintenance of development despite the presence of risk and resilience as recovery from trauma. They have given particular emphasis to the idea of reserve capacity, a construct from life-span developmental theory referring to an individual's potential for change, especially continued growth. Their chapter provides an extensive review of previous research in multiple aging domains (i.e., cognition, self, social transactions). Although the aging studies document positive functioning in diverse areas, they do not frequently incorporate assessments of the actual challenges or risks of aging, and few investigations include explicit measures of developmental reserve/continued growth particularly as linked with risk or threat.

Extending the childhood emphasis on resilience as a personality characteristic, Klohnen has emphasized an adult version of ego resiliency, which is defined as a "personality resource that allows individuals to modify their characteristic level and habitual mode of expression of ego-control so as to most adaptively encounter, function in, and shape their immediate and long-term environmental contexts" (1996, p. 1067). Klohnen has found strong relationships between ego resiliency and effective functioning in diverse areas of life (e.g., global adjustment, work and social adjustment, physical and psychological health).

Our program of research has emphasized the distinction between resilience as an outcome and resilience as a dynamic process (Ryff, Singer, Love, & Essex, 1998). As an outcome, we have defined resilience as the *maintenance, recovery, or improvement in mental or physical health following challenge*. Such a formulation goes beyond earlier conceptions focused on absence-of-illness indicators of resilience (e.g., *not* becoming depressed, anxious, or physically ill in the face of adversity). Mentally, we have focused on psychological well-being, which is a multidimensional model that gives emphasis to positive self-regard, quality ties to others, capacity to manage

one's surrounding environment, having purpose and meaningful engagement, and continued growth and development (see Ryff, 1989; Ryff & Keyes, 1995). We also bring physical health into the definition of resilience, thereby underscoring a joint emphasis on the mind and the body in understanding optimal functioning in adulthood and later life. Positive physical health, like mental health, includes not only the absence of illness (e.g., avoidance of disease, chronic conditions, health symptoms, physical limitations) but also the presence of the positive (e.g., functional abilities, aerobic capacities, healthy behaviors—diet, exercise, sleep).

Life challenge is fundamental to our conception of resilience as a process. Thus, the model is not about lives of smooth sailing where all goes well and one manages to evade adversity but rather is about successful *engagement* with difficult events and experiences. The later years are replete with such challenge (i.e., acute health events, loss events such as retirement or widowhood, chronic stress such as caregiving, transitions such as relocation), making old age a particularly valuable period for understanding how challenges are successfully negotiated. A central feature of our studies is the tracking of these naturally occurring challenges as well as their accumulation over time. How individuals remain healthy and well in the face of cumulative challenge is a fundamental route to understanding resilience as a dynamic process.

The specific naturally occurring life challenges we have studied include normative transitions, critical and unexpected events, and chronically occurring difficulties. To illustrate the more planned and typical challenges of adult life, we have studied the experience of having and raising children (i.e., the challenges of being a parent) to assess its impact on the well-being of parents (Ryff, Lee, Essex, & Schmutte, 1994; Ryff & Seltzer, 1996). Other investigations have focused on the physical health challenges that accompany aging (Heidrich & Ryff, 1993a, 1993b, 1996) or on later life transitions (studied longitudinally), such as community relocation (Kling, Ryff, & Essex, 1997; Kling, Seltzer, & Ryff, 1997; Smider, Essex, & Ryff, 1996). Related investigations, using psychological well-being as outcome measures, have examined the challenges of caregiving (Li, Seltzer, & Greenberg, 1999; Marks, 1998), marital transitions (Marks & Lambert, 1998), career achievements (Carr, 1997), and goal pursuits (McGregor & Little, 1998).

Regarding unexpected and adverse experiences, we have also studied how growing up with an alcoholic parent (Tweed & Ryff, 1991) or having a child with Down syndrome (Van Riper, Ryff, & Pridham, 1992) influences adult psychological well-being. Drawing connection to the growing literature on social inequalities, we have examined how position in the socioeconomic hierarchies, such as persistent educational and economic disadvantage, is tied to psychological well-being (Marmot, Ryff, Bumpass, Shipley, & Marks,

1997; Ryff, Magee, Kling, & Wing, 1999). Finally, in recent work with the Wisconsin Longitudinal Study, we have examined the influence of cumulative life adversity (and advantage) on well-being (Singer & Ryff, 1999; Singer, Ryff, Carr, & Magee, 1998). This latter work goes beyond the focus on single life challenges to assessment of the impact of cumulative experience in multiple life domains.

Across these numerous investigations, empirical findings have documented that, indeed, many individuals are able to maintain, or even enhance, their well-being as they encounter various life challenges. For example, our longitudinal research on community relocation has shown that a substantial proportion of aging women sustain high levels of well-being, or actually improve, over the course of this later life transition (Ryff et al., 1998). Speaking to the question of protective resources, these studies have also clarified that those who show *gains* in multiple aspects of well-being following relocation are persons with flexible self-concepts (i.e., the capacity to change what is defined as central to one's self-definition; Kling, Ryff, et al., 1997) and effective coping strategies (e.g., problem-focused coping; Kling, Seltzer, et al., 1997). We have also documented that having psychological resources (e.g., high levels of environmental mastery or autonomy) before the move (i.e., pre-move levels of well-being) clarifies who will show positive emotional reactions shortly after the move (Smider et al., 1996).

In other aging studies, both cross-sectional and longitudinal, our work has shown that some individuals are able to maintain high levels of well-being in the face of increased chronic health conditions (Heidrich & Ryff, 1993a, 1993b, 1996). The respondents' levels of social integration (e.g., having meaningful roles and reference groups) and their effective use of social comparison processes (e.g., perceiving that one is doing well relative to others in multiple domains of life) have helped differentiate those who sustain high well-being from those who do not. These aging studies intersect with epidemiological research (e.g., Singer & Manton, 1998), which shows that rates of later life disability are, at the population level, *declining*. Our more targeted studies with smaller, frequently longitudinal samples provide clues to the kinds of psychological and social factors that possibly contribute to the maintenance of health and well-being in the later years. Alternatively, the population profiles of chronic conditions and functional capacities show trends toward better health but lack formulation and assessment of factors to account for such changes. Both agendas underscore the theme of positive health and well-being in later life.

Regarding more atypical and unexpected life challenges, such as having a child with mental retardation or growing up with an alcoholic parent (Seltzer & Ryff, 1994; Tweed & Ryff, 1991; Van Riper et al., 1992), our studies again have documented that many parents of children with disabilities do, in fact, have high well-being (at levels comparable to matched

parents of nondisabled children) and that many adult children of alcoholics also show numerous psychological strengths. Still other investigations of parenting (in both the normative and nonnormative cases) have clarified *how* particular psychosocial processes (e.g., coping strategies, social comparisons, attribution processes) differentiate between parents who do, and do not, have high well-being with regard to the challenges of parenting (Kling, Seltzer, et al., 1997; Ryff et al., 1994; Ryff, Schmutte, & Lee, 1996).

Most of the findings described have explored the impact of single events or specific experiences on well-being. A key objective has also been to shift the focus to more *cumulative* profiles of life adversity and advantage (Singer et al., 1998). Such questions emerged from earlier work on career trajectories of women in science, where the accumulation of negative events was a guiding theme in explaining differential achievement patterns (Cole & Singer, 1991). These ideas were incorporated into our work with the Wisconsin Longitudinal Study (WLS), where we quantified cumulative experience in a life history framework. This research focused on a particular version of resilience—namely, the recovery of high well-being following the experience of major depression. We asked what are the life histories of such individuals who recover high levels of psychological well-being following an episode of depression? What have been their previous experiences of adversity, likely implicated in their experiences with depression, but also what have been their experiences of advantage, possibly contributing to their recovery from depression?

Our analyses of such resilient women in the WLS used person-centered life history techniques to identify multiple life pathways to midlife recovery of high well-being. Some of these individuals had experienced adverse events early in life (e.g., parental alcoholism, death of parent, limited parental income or education), but such difficult beginnings were accompanied by later experiences of advantage (e.g., upward occupational mobility, close ties to spouse). Other women experienced major adversity in adult life (e.g., unemployment, single parenting, spousal drinking, having caregiving roles), but their challenges were offset by good starting resources (e.g., high school abilities, adequate parental income and education; see Singer et al., 1998, for details of four primary pathways of histories).

Collectively, these investigations have illustrated that many midlife and aging adults are, in fact, able to maintain, or regain, their health and well-being following engagement with significant challenge, both expected (normative) and unexpected (nonnormative). These studies have used psychological well-being as a measure of flourishing in the face of such challenge, and with regard to understanding the process of resilience, have targeted various psychological and social protective factors (e.g., coping strategies, flexible self-concepts, quality relationships with others, positive comparison processes).

Growth Through Trauma: Thriving vis-à-vis Crisis

In the past decade, considerable interest has been given to the positive aftermath of life crises such as bereavement, illness, captivity, major accidents, chronic disability, abuse. This research does not have an explicit focus on aging or life-course perspectives, but rather is applied to samples of diverse ages confronting diverse challenges. The central theme, however, is that of articulating positive consequences of traumatic experience. Tedeschi and Calhoun (1995) suggested that growth after suffering can include such outcomes as new perceptions of one's self (e.g., feeling stronger and more self-assured, increased self-reliance); gains in recognizing and appreciating one's own vulnerability; change in relationships with others (e.g., closer family ties, greater appreciation of significant others, greater self-disclosure and emotional expressiveness); changed philosophy of life (e.g., taking things easier, knowing what is important, greater spirituality).

More recently, Tedeschi, Park, and Calhoun (1998) have elaborated ideas of rebirth, renewal, and bouncing back. Trauma in this framework thus becomes a possible springboard for additional growth and development. Posttraumatic growth (PTG), a term juxtaposed with posttraumatic stress disorder (PTSD), underscores the significant beneficial change that can occur in cognitive and emotional life (both having behavioral implications) following significant suffering. This realm of inquiry draws on existential philosophy, such as Frankl's logotherapy, and applies the perspectives to numerous contexts of bereavement, chronic illness and disability, HIV infection, cancer, heart attack, medical problems of children, transportation accidents, house fires, rape, and sexual abuse. Researchers in this area see PTG as related to constructs of resilience, sense of coherence, hardiness, stress inoculation, toughening, but their emphasis is on refining formulations of the types of growth that can follow crises: perceiving of oneself as survivor rather than victim; increased self-reliance and self-efficacy; heightened awareness of one's own vulnerability and mortality; improvement in ties to others—greater self-disclosure and emotional expressiveness, more compassion and capacity to give to others; clearer philosophy of life—renewed sense of priorities and appreciation of life, deeper sense of meaning and spirituality.

Personality researchers have also been drawn to ideas of growth through trauma. Aldwin and Sutton (1998) described life stress, for example, as a context for personality development in adulthood—in other words, a forum for increasing coping skills, self-esteem, self-confidence, and self-knowledge. Their work underscores the need for greater differentiation between growth and denial. Emmons, Colby, and Kaiser (1998) draw on goal perspectives to examine when losses lead to gains. They emphasize the importance of being able, in context of traumatic events, to feel pleasure when desirable events occur, to feel hopeful regarding the future, to plan and care about

plans. Their research shows that goal change does not necessarily follow trauma; rather, lack of goal change was associated with recovery from loss. Moreover, those committed to spiritual and religious goals were more likely to say they had both recovered from loss and found meaning in it.

Tennen and Affleck (1998) pointed to additional personality characteristics that seem to contribute to thriving in face of adversity, such as dispositional optimism and hope, cognitive- and self-complexity, and intrinsic religiousness. Park (1998) noted that some people describe their traumatic experience as the “best thing that ever happened to me,” and also suggested that optimism and hope, spirituality and religiousness, extraversion, and the appraisal and coping processes are personal characteristics relevant to understanding growth following adversity.

Carver distinguished between resilience and thriving, defining the former as a homeostatic return to earlier levels of functioning. Thriving, however, is more than recovery of homeostatic maintenance—it is being better off after the traumatic experience. The “person who experiences thriving comes to function at a continuing higher level than was the case before adverse event” (1998, p. 250). Such thriving can involve newly developed skills, confidence and sense of mastery, and strengthened personal relations. Similarly, Saakvitne, Tennen, and Affleck (1998) suggested that trauma can be transformative, leading to the reconstruction of meaning, renewal of faith, trust, hope, and connection, and redefinition of self, oneself, and sense of community.

Thus, this emergent literature on growth through trauma points to a variety of ways in which individuals’ self-evaluations, their life philosophies, their ties to others, and their spirituality can be significantly changed, indeed, enhanced, in the encounter with adverse experience. Numerous personality characteristics have been identified as factors that increase the likelihood of positive sequelae in the aftermath of life crises. To date, this is an area of inquiry where the conceptual ideas sometimes outdistance scientific findings, although proposed avenues of growth through trauma are increasingly subject to empirical scrutiny.

COMPARATIVE PERSPECTIVES ON RESILIENCE IN CHILDHOOD, ADULTHOOD, AND LATER LIFE

The child and adulthood research on resilience reveals notable points of convergence as well as areas of distinctiveness. Both realms address varieties of challenge that individuals confront as they travel across the life course. In childhood, the adversities have frequently been those of growing up under conditions of extreme poverty or having a parent with severe alcoholism or psychopathology. In adulthood and aging, the difficulties have

been more varied. On the one hand, they have included the losses (e.g., widowhood, functional decline), chronic stresses (e.g., caregiving), or acute events (e.g., relocation) that accompany aging. Alternatively, the adult studies have given considerable emphasis to unexpected traumas (e.g., major accidents, natural disasters, major health events, captivity, abusive experiences). Such unanticipated traumas are presumably evident in the lives of children as well, but as such, have received limited consideration in research agendas explicitly focused on childhood resilience.

Both child and adult literatures emphasize the need to assess positive outcomes in response to challenge. That is, the absence of negative effects (e.g., mental or physical illness) is viewed as insufficient to document full flourishing in the face of challenge. Child researchers have thus focused on such outcomes as secure attachments, self-development, academic success, and positive relationships with peers. In adulthood and aging, emphasis has been on multiple aspects of well-being, including positive self-regard, quality relations with others, a sense of purpose and meaning in life, continued growth and development, and the capacity to manage the surrounding environment. Positive physical health (functional capacities, good health behaviors) also received greater emphasis in the middle and later-life definitions of resilient outcomes.

How or why individuals are resilient in the face of challenge is of central interest in both literatures. That is, both realms of inquiry have formulated “protective resources” that help explain positive outcomes with respect to difficult life experiences. Childhood researchers examine a variety of protective factors including attributes within the individual child (e.g., temperament, intelligence, self-esteem, self-efficacy); close, nurturing ties to family members; as well as connections with others in the community (e.g., teachers, peers). The contexts of children’s lives (e.g., family, community, neighborhood) have thus received considerable attention. The adulthood and aging literature, in contrast, gives little emphasis to contextual factors that might contribute to resilience. Apart from the emphasis on social support, which addresses the proximal social environment, limited attention is given to assessment of community or neighborhood contributions to understanding later life resilience. What receives primary attention are individual characteristics (e.g., coping strategies, personality traits, flexible self-concepts, social comparisons, optimism and hope, religion and spirituality). Some of these have been studied in childhood investigations of resilience, but others (e.g., coping strategies, optimism, spirituality) have not, and thus, offer possible avenues for future inquiry.

Finally, it is largely in the adulthood literature that researchers have emphasized ideas of growth through trauma. This realm of inquiry points to a variety of gains that can follow suffering: increased self-knowledge and self-reliance, heightened awareness of personal vulnerabilities, greater

emotional expressiveness and disclosure to others, increased compassion for others, deeper levels of spirituality. These ideas and their assessment are generally missing in childhood studies of resilience, although they may have relevance for early life as well. Alternatively, the childhood research has increasingly pointed to possible “costs” that may accompany resilient profiles. That is, children of adversity may do well in certain areas (e.g., competence in school) and yet continue to suffer in certain areas of vulnerability (e.g., limited capacity to establish close ties to others). This recognition—that resilience may exact psychosocial tolls that exist side by side with the psychosocial strengths it hones—is an important insight for those attempting to understand flourishing under fire in adulthood and later life.

CONCLUSION

These comparisons point to numerous areas in which the child and adult literatures on resilience can inform and extend each other. In this final section we suggest multiple directions for future research that are pertinent to studies of resilience across the life course. It should be noted that the preceding literature review has been restricted only to those research agendas that are explicitly focused on resilience (in childhood or adulthood and aging). That is, we have made no attempt to link this body of work to other related realms, such as the enormous literature on stress and coping that sometimes gives emphasis to effective management of life stress (e.g., Folkman, 1997; Thoits, 1994). Increased interplay between these surprisingly separate domains of inquiry is in itself a fruitful future direction, but one that we do not elaborate.

We identify five venues for future inquiry next. The first two points underscore and extend observations made in earlier sections of our chapter. The three latter points are suggestions that call for substantially new directions in the study and promotion of human resilience.

First, we strongly endorse the view expressed by multiple investigators in these various literatures that it is essential to assess resilience with indicators that encompass more than the absence of illness (mental or physical). The avoidance of psychopathology, negative behavioral outcomes, or illness is no guarantee that one will also flourish and be well in multiple realms of life. This observation underscores the important interchange needed between those who study human resilience and those who study human flourishing. These largely separate realms have much to offer each other. Scholars of flourishing, such as those in this volume, push forward novel formulations (and measures) of what it means to function positively. It is critical to bring more of these components of wellness into the research on resilience, both in childhood and adulthood and later life. Alternatively,

scholars of resilience remind those who would envision the positive side of the human condition that sometimes the heights of efficacy, love, and engagement in and appreciation of life are intricately woven together with some of the greatest challenges and trials that are also a part of the human journey.

Second, extant studies of resilience, from childhood through old age, have given limited attention to the stressors and challenges that constitute what individuals actually rise above. In many instances, particular life challenges (e.g., parental psychopathology, poverty, widowhood, acute health events, major accidents) are assumed to be stressful rather than including actual empirical assessments of levels of stress experienced. As those who study resilience in childhood have increasingly conveyed, it is scientifically unsound to assume that all children growing up under poverty or with a parent having mental illness are subject to extensive stress. Some are, and others are not; failure to include these assessments has contributed to the slippage that subsequently occurs in predicting childhood outcomes.

Similarly, at the other end of the life course, the growing literature on successful aging (Baltes & Baltes, 1990; Berkman et al., 1993; Bond, Cutler, & Grams, 1995; Rowe & Kahn, 1987; Schulz & Heckhausen, 1996) has delineated high levels of physical, cognitive, and personal functioning in later life and explored their correlates (sociodemographic, behavioral, physiological), but has frequently neglected how such profiles of success intersect with the *actual challenges or stresses of later life*. Without consideration of such challenges, including assessment of the actual difficulties associated with them, it is impossible to map the dynamic processes through which resilience occurs.

Third, we underscore the need to study resilience as a long-term, longitudinal process. Paradoxically, much of the early work on resilience in childhood has been conducted with longitudinal studies, but the identification of factors to account for stress resistance has been largely post-hoc (i.e., protective factors were identified after resilience has been established). Such an approach makes it difficult to determine which factors are necessary, and which may be peripheral, in explaining resilient outcomes. Prospective longitudinal studies that include a priori prediction and testing of hypothesized risk or protective factors need a much greater presence in extant literature. Extending the time frame of previous studies (i.e., tracking resilient or vulnerable children into early adulthood and midlife) would also significantly strengthen understanding of the long-term sequelae of difficult early experience that, at least in childhood, did not adversely affect development and well-being.

Later life is also an auspicious time to implement such prospective studies because this is a period in which life challenges are rapidly accumulating and individual differences in health and well-being become more pro-

nounced. The adulthood and aging literature would, however, also benefit from richer understanding of earlier life challenges and reactions to them. That is, are individuals who show noticeable resilience in the face of later life adversity also those with strong profiles of resistance to illness (mental or physical) in dealing with earlier life stresses, including those in childhood?

Of particular importance in such life course studies is the need to track cumulative profiles of adverse experience or stress. In childhood studies, Masten (1999) has called for greater attention to the compounding and pile up of stress across time, whereas in adulthood our research has given explicit emphasis to the accumulation, both of adversity and advantage (Singer et al., 1998), in describing various pathways to resilience. We would note that careful study of individual lives frequently provides useful illustrations for how life difficulties can accumulate as well as how some have been able to escape their debilitating consequences. Our review of the life of Mark Mathabane (1986; see Singer & Ryff, 1997), who as a child suffered the atrocities of apartheid in South Africa but managed in young adulthood to rise above his horrific early experiences, provides one such case example. Higgins (1994) illustrated numerous other real-life examples of human resilience, thereby furthering understanding, at the individual level, of how life difficulties can be compounded through time and yet routes out of these difficulties are nonetheless found.

Fourth, like many others, we see the need for greater investment in multidisciplinary, integrative studies of resilience. Luthar, Cicchetti, and Becker (2000), in their recent review of childhood studies, give particular emphasis to the importance of adding biological factors, along with the psychological, social, and environmental influences that have been previously studied. Werner (1995) also noted that the majority of childhood protective factors have consisted of psychosocial factors, thereby neglecting biological insults as stressors as well as ignoring physiological factors that may constitute important protective resources. We have also called for the incorporation of biology into adult studies of resilience (Ryff et al., 1998). Specifically, we proposed possible connections between resilience and how the body responds to stress, how the immune system functions, and even how the brain reacts to various emotional stimuli.

To illustrate, we have connected social relational well-being to “allostatic load,” which measures cumulative wear and tear on multiple physiological systems (see McEwen & Stellar, 1993; Seeman, Singer, McEwen, Horowitz, & Rowe, 1997). High allostatic load has been found in longitudinal studies of aging to predict incident cardiovascular disease, decline in cognitive and physical functioning, and mortality. Our question was whether cumulative social relational strengths (i.e., the positive pathway) or cumulative relational problems (i.e., the negative pathway) would be linked with allostatic load. Based on a sample of midlife adults, we found that among

those on the positive pathway, a significantly lower proportion were found to have high allostatic load, compared to those on the negative pathway (Singer & Ryff, 1999).

Returning to the theme of resilience, we also asked whether the presence of good-quality social relationships (in childhood and adulthood) could afford protection against possible adverse physiological sequelae associated with persistent economic adversity. We found, as predicted, that those with cumulative profiles of economic disadvantage were more likely to have high allostatic load compared to those with persistent profiles of economic advantage. However, among those on the negative economic pathway, those who had persistently positive relational experiences were less likely to have high allostatic load than those who suffered both economic and relational adversity. That is, good-quality social relationships appeared to afford protection against the adverse biological sequelae of economic disadvantage. Our ongoing studies of resilience, involving longitudinal studies of middle- and older aged adults and a team of multidisciplinary investigators, are extending these lines of inquiry by building bridges to immune function (measured in terms of antibody response to vaccines) as well as to brain structure and function (measured in terms of hippocampal volume and cerebral activation asymmetry).

Fifth, although most earlier research on resilience has been descriptive, or more recently involved hypothesis-testing efforts to account for positive outcomes in the face of adversity, surprisingly little work in the field of resilience has been focused on intervention. This no doubt reflects the view held in many circles that not enough is currently known about how resilience comes about to embark on efforts to foster or facilitate it. To this view, we submit that active efforts to nurture positive outcomes with regard to challenge are already underway. Giovanni Fava has, for example, developed "well-being therapy" to prevent relapse among those suffering from recurrent depression (Fava, Rafanelli, Gvandi, Conti, & Bellwardo, 1998). The essence of the therapy is to give people the cognitive, emotional, and behavioral tools for having more positive, salubrious experience in their daily lives, and this is what promotes their recovery from major depression. Steve Danish (1997), in addition, directs a program among high-risk adolescents called "Going for the Goal," which is designed to teach the life skills needed to set and pursue significant life goals. Teenagers participating in this program have shown positive profiles of health behaviors and school performance. Both of these examples illustrate the potential that exists for improving the human condition by giving ever greater segments of the population (particularly those suffering from disadvantage) the resources, insight, and behaviors needed to flourish, even under fire. A key direction for the future must thus be to incorporate more of these programs into the vision and practice of public health. What we learn about those who prevail in the

face of adversity provides the foundation for a new era of public education about tools for positive health promotion (Ryff & Singer, 2000).

In summary, there are numerous avenues for enriching extant research on challenged thriving. Some involve pushing forward explicit assessments of what it means to flourish (i.e., mastery, purpose, quality relationships, positive self-regard); others require more detailed evaluation of the “under fire” part—in other words, the nature and degree of adversity experienced. Long-term studies, covering wide segments of the life course, are particularly critical to understanding how life difficulties may be compounded, and for some, how life strengths may be honed in the process. Mapping the linkages between resilience as a psychosocial phenomenon and resilience as a biological process is also central to understanding the neurophysiological mechanisms that underlie the capacity to thrive in the face of adversity. Finally, the need to promote, at the level of public education and community intervention programs, the “tools” that afford resilience (e.g., positive outlooks, coping effectiveness, emotion regulation, social integration) is fundamental to promoting the greatest possible good for the largest possible segment of society.

REFERENCES

- Aldwin, C. M., & Sutton, K. J. (1998). A developmental perspective on posttraumatic growth. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Post-traumatic growth: Positive changes in the aftermath of crisis* (pp. 43–64). Mahwah, NJ: Erlbaum.
- Baltes, P. B., & Baltes, M. M. (Eds.). (1990). *Successful aging: Perspectives from the behavioral sciences*. New York: Cambridge University Press.
- Berkman L. F., Seeman, T. E., Albert, M., Blazer, D., Kahn, R., et al. (1993). High, usual and impaired functioning in community-dwelling older men and women: Findings from the MacArthur Foundation Research Network on Successful Aging. *Journal of Clinical Epidemiology*, 46, 1129–1140.
- Block, J. H. (1971). *Lives through time*. Berkeley, CA: Bancroft Books.
- Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In W. A. Collins (Ed.), *Development of cognition, affect, and social relations: The Minnesota Symposium on Child Psychology* (Vol. 13, pp. 39–101). Hillsdale, NJ: Erlbaum.
- Bond, L. A., Cutler, S. J., & Grams, A. (Eds.). (1995). *Promoting successful and productive aging*. Thousand Oaks, CA: Sage.
- Carr, D. (1997). The fulfillment of career dreams at midlife: Does it matter for women’s mental health? *Journal of Health and Social Behavior*, 38, 331–344.
- Carver, C. S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues*, 54, 245–266.

- Cole, J. R., & Singer, B. (1991). A theory of limited differences: Explaining the productivity puzzle in science. In H. Zuckerman, J. R. Cole, & J. T. Bruer (Eds.), *The outer circle: Women in the scientific community* (pp. 277–340). New York: W. W. Norton.
- Danish, S. J. (1997). Going for the goal: A life skills program for adolescents. In G. Albee & T. Gullotta (Eds.), *Prevention works* (pp. 291–312). Newbury Park, CA: Sage.
- Emmons, R. A., Colby, P. M., & Kaiser, H. A. (1998). When losses lead to gains: Personal goals and the recovery of meaning. In P. T. P. Wong & P. S. Fry (Eds.), *The human quest for meaning: A handbook of psychological research and clinical applications* (pp. 163–178). Mahwah, NJ: Erlbaum.
- Fava, G. A., Rafanelli, C., Grandi, S., Conti, S., & Belluardo, P. (1998). Prevention of recurrent depression with cognitive behavioral therapy. *Archives of General Psychiatry*, 55, 816–821.
- Folkman, S. (1997). Positive psychological states and coping with severe stress. *Social Science and Medicine*, 45, 1207–1221.
- Garmezy, N. (1974). The study of competence in children at risk for severe psychopathology. In E. J. Anthony & C. Koupernick (Eds.), *The child in his family. Vol. 3: Children at psychiatric risk* (pp. 77–97). New York: Wiley.
- Garmezy, N. (1991). Resiliency and vulnerability of adverse developmental outcomes associated with poverty. *American Behavioral Scientist*, 34, 416–430.
- Garmezy, N. (1993). Vulnerability and resistance. In D. C. Funder, R. D. Parke, C. Tomlinson-Keasey, & K. Widaman (Eds.), *Studying lives through time: Personality and development* (pp. 377–398). Washington, DC: American Psychological Association.
- Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for development. *Child Development*, 55, 97–111.
- Garmezy, N., & Streitman, S. (1974). Children at risk: The search for the antecedents of schizophrenia: Conceptual models and research methods. *Schizophrenia Bulletin*, 8, 14–90.
- Glantz, M. D., & Sloboda, Z. (1999). Analysis and reconceptualization of resilience. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 109–128). New York: Kluwer Academic/Plenum Press.
- Heidrich, S. M., & Ryff, C. D. (1993a). Physical and mental health in later life: The self-system as mediator. *Psychology and Aging*, 8, 327–338.
- Heidrich, S. M., & Ryff, C. D. (1993b). The role of social comparison processes in the psychological adaptation of elderly adults. *Journal of Gerontology*, 48, P127–P136.
- Heidrich, S. M., & Ryff, C. D. (1996). The self in later years of life: Changing perspectives on psychological well-being. In L. Sperry & H. Prosen (Eds.), *Aging in the twenty-first century: A developmental perspective* (pp. 73–102). New York: Garland.

- Higgins, G. O. (1994). *Resilient adults: Overcoming a cruel past*. San Francisco: Jossey-Bass.
- James, W. (1902/1958). *The varieties of religious experience*. New York: New American Library.
- Kling, K. C., Ryff, C. D., & Essex, M. J. (1997). Adaptive changes in the self-concept during a life transition. *Personality and Social Psychology Bulletin*, 23, 989–998.
- Kling, K. C., Seltzer, M. M., & Ryff, C. D. (1997). Distinctive late life challenges: Implications for coping and well-being. *Psychology and Aging*, 12, 288–295.
- Klohn, E. C. (1996). Conceptual analysis and measurement of the construct of ego-resiliency. *Journal of Personality and Social Psychology*, 70, 1067–1079.
- Li, L. W., Seltzer, M. M., & Greenberg, J. S. (1999). Change in depressive symptoms among daughter caregivers: An 18-month longitudinal study. *Psychology and Aging*, 14, 206–219.
- Luthar, S. S. (1991). Vulnerability and resilience: A study of high-risk adolescents. *Child Development*, 62, 600–616.
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71, 543–562.
- Luthar, S. S., & Cushing, G. (1999). Measurement issues in the empirical study of resilience: An overview. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 129–160). New York: Kluwer Academic/Plenum Press.
- Marks, N. F. (1998). Does it hurt to care: Caregiving, work–family conflict, and midlife well-being. *Journal of Marriage and the Family*, 60, 952–966.
- Marks, N. F., & Lambert, J. D. (1998). Marital status continuity and change among young and midlife adults: Longitudinal effects on psychological well-being. *Journal of Family Issues*, 19, 652–686.
- Marmot, M., Ryff, C. D., Bumpass, L. L., Shipley, M., & Marks, N. F. (1997). Social inequalities in health: Converging evidence and next questions. *Social Science and Medicine*, 44, 901–910.
- Masten, A. S. (1989). Resilience in development: Implications of the study of successful adaptation for developmental psychopathology. In D. Cicchetti (Ed.), *The emergence of a discipline: Rochester Symposium on Developmental Psychopathology* (Vol. 1, pp. 261–294). Hillsdale, NJ: Erlbaum.
- Masten, A. S. (1999). Resilience comes of age: Reflections on the past and outlook for the next generation of research. In M. D. Glantz & J. L. Johnson (Eds.), *Resilience and development: Positive life adaptations* (pp. 281–296). New York: Kluwer Academic/Plenum Press.
- Masten, A. S., Best, K., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, 2, 425–444.

- Masten, A. S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In B. B. Lahey & A. E. Kazdin (Eds.), *Advances in clinical child psychology* (Vol. 8, pp. 1–52). New York: Plenum Press.
- Mathabane, M. (1986). *Kaffir boy*. New York: Penguin Books.
- McEwen, B. S., & Stellar, E. (1993). Stress and the individual. *Archives of Internal Medicine*, 153, 2093–2101.
- McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology*, 74, 494–512.
- Park, C. L. (1998). Implications of posttraumatic growth for individuals. In R. E. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive changes in the aftermath of crisis* (pp. 153–178). Mahwah, NJ: Erlbaum.
- Robins, R. W., John, O. P., Caspi, A., Moffitt, T. E., & Stouthamer-Loeber, M. (1996). Resilient, overcontrolled, and undercontrolled boys: Three replicable personality types. *Journal of Personality and Social Psychology*, 70, 157–171.
- Rowe, J. W., & Kahn, R. L. (1987). Human aging: Usual and successful. *Science*, 237, 143–149.
- Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *British Journal of Psychiatry*, 147, 598–611.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, 22, 323–356.
- Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Neuchterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181–214). New York: Cambridge University Press.
- Rutter, M., Maughan, N., Mortimore, P., & Ouston, J. (1979). *Fifteen thousand hours: Secondary schools and their effects on children*. Cambridge, MA: Harvard University Press.
- Ryff, C. D. (1989). Happiness is everything, or is it?: Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57, 1069–1081.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological well-being revisited. *Journal of Personality and Social Psychology*, 69, 719–727.
- Ryff, C. D., Lee, Y. H., Essex, M. J., & Schmutte, P. S. (1994). My children and me: Midlife evaluations of grown children and of self. *Psychology and Aging*, 9, 195–205.
- Ryff, C. D., Magee, W. J., Kling, K. C., & Wing, E. H. (1999). Forging macro-micro linkages in the study of psychological well-being. In C. D. Ryff & V. W. Marshall (Eds.), *The self and society in aging processes* (pp. 247–278). New York: Springer.
- Ryff, C. D., Schmutte, P. S., & Lee, Y. H. (1996). How children turn out: Implications for parental self-evaluation. In C. D. Ryff & M. M. Seltzer (Eds.), *The*

- parental experience in midlife (pp. 383–422). Chicago: University of Chicago Press.
- Ryff, C. D., & Seltzer, M. M. (1996). The uncharted years of midlife parenting. In C. D. Ryff & M. M. Seltzer (Eds.), *The parental experience in midlife* (pp. 3–25). Chicago: University of Chicago Press.
- Ryff, C. D., & Singer, B. (2000). Interpersonal flourishing: A positive health agenda for the new millennium. *Personality and Social Psychology Review*, 4, 30–44.
- Ryff, C. D., Singer, B., Love, G. D., & Essex, M. J. (1998). Resilience in adulthood and later life: Defining features and dynamic processes. In J. Lomranz (Ed.), *Handbook of aging and mental health* (pp. 69–96). New York: Springer-Verlag.
- Saakvitne, K., Tennen, H., & Affleck, G. (1998). Exploring thriving in the context of clinical trauma theory: Constructivist self development theory. *Journal of Social Issues*, 54, 279–300.
- Schulz, R., & Heckhausen, J. (1996). A life span model of successful aging. *American Psychologist*, 51, 702–714.
- Seeman, T. E., Singer, B. H., McEwen, B. S., Horwitz, R. I., & Rowe, J. W. (1997). The price of adaptation—Allostatic load and its health consequences: MacArthur Studies of Successful Aging. *Archives of Internal Medicine*, 157, 2259–2268.
- Seltzer, M. M., & Ryff, C. D. (1994). Parenting across the life-span: The normative and nonnormative cases. In D. L. Featherman, R. M. Lerner, & M. Perlmutter (Eds.), *Life-span development and behavior* (Vol. 12, pp. 1–40). Hillsdale, NJ: Erlbaum.
- Singer, B., & Manton, K. G. (1998). The effects of health changes on projections of health service needs for the elderly population of the United States. *Proceedings of the National Academy of Sciences*, 95, 15618–15622.
- Singer, B., & Ryff, C. D. (1997). Racial and ethnic inequalities in health: Environmental, psychosocial, and physiological pathways. In B. Devlin, S. E. Feinberg, D. Resnick, & K. Roeder (Eds.), *Intelligence, genes, and success: Scientists respond to the Bell Curve* (pp. 89–122). New York: Springer-Verlag.
- Singer, B., & Ryff, C. D. (1999). Hierarchies of life histories and associated health risks. In N. E. Adler, B. S. McEwen, & M. Marmot (Eds.), *Socioeconomic status and health in industrialized nations. Annals of the New York Academy of Sciences*, 896, 96–115.
- Singer, B., Ryff, C. D., Carr, D., & Magee, W. J. (1998). Life histories and mental health: A person-centered strategy. In A. Raftery (Ed.), *Sociological methodology, 1998* (pp. 1–51). Washington, DC: American Sociological Association.
- Smider, N. A., Essex, M. J., & Ryff, C. D. (1996). Adaptation to community relocation: The interactive influence of psychological resources and contextual factors. *Psychology and Aging*, 11, 362–371.
- Staudinger, U. M., Marsiske, M., & Baltes, P. B. (1995). Resilience and reserve capacity in later adulthood: Potentials and limits of development across the life span. In D. Cicchitti & D. J. Cohen (Eds.), *Developmental psychopathology* (Vol. 2: Risk, Disorder, and Adaptation, pp. 801–847). New York: Wiley.

- Taylor, R. D., & Wang, M. C. (Eds.). (2000). *Resilience across contexts: Family, work, culture, and community*. Mahwah, NJ: Erlbaum.
- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage.
- Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (Eds.). (1998). *Posttraumatic growth: Positive changes in the aftermath of crisis*. Mahwah, NJ: Erlbaum.
- Tennen, H., & Affleck, G. (1998). Personality and transformation in the face of adversity. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.), *Posttraumatic growth: Positive changes in the aftermath of crisis* (pp. 65–98). Mahwah, NJ: Erlbaum.
- Thoits, P. A. (1994). Stressors and problem-solving: The individual as a psychological activist. *Journal of Health and Social Behavior*, 35, 143–159.
- Tweed, S., & Ryff, C. D. (1991). Adult children of alcoholics: Profiles of wellness and distress. *Journal of Studies on Alcohol*, 52, 133–141.
- Van Riper, M., Ryff, C. D., & Pridham, K. (1992). Parental and family well-being in families of children with Down syndrome: A comparative study. *Research in Nursing and Health*, 15, 227–235.
- Werner, E. E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study. *Development and Psychopathology*, 5, 503–515.
- Werner, E. E. (1995). Resilience in development. *Current Directions in Psychological Science*, 4, 81–85.
- Werner, E. E., & Smith, R. S. (1977). *Kauai's children come of age*. Honolulu: University of Hawaii Press.
- Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.
- Zimmerman, M. A., & Arunkumar, R. (1994). Resiliency research: Implications for schools and policy. *Social Policy Report (Society for Research in Child Development)*, 8, 1–17.