

Chapter 1

Pathways to Resilience in Context

Margaret O'Dougherty Wright and Ann S. Masten

Following their parents' contentious divorce, a 3 year old African American girl and her 4 year old brother traveled alone by train to live with their paternal grandmother in Arkansas. Four years later their father arrived without warning and moved the children to live with their biological mother, who now resided in Missouri. At the age of eight, the child was brutally raped by her mother's boyfriend. He was soon murdered, most likely by the child's uncles. In the aftermath of this trauma, the child became mute for almost 5 years and was sent back to live with her grandmother. Following recovery of her speech, she was sent again to live with her mother, who now resided in California. By age 17 she had become pregnant, and began a precipitous slide into poverty and criminal activities, while also working as a cook and waitress to provide for her young son. As a young adult, she struggled to raise her son without training or an advanced education. Given her exposure to a multitude of psychosocial risks and struggles to adapt during her early life, one would not have predicted that she would someday become a world-renowned writer, poet, performer, and influential voice in the American Civil Rights Movement. This is the early life story of Maya Angelou.

Angelou's memoirs provide rich insights into factors that may have facilitated her recovery and remarkable turnaround later in life (Angelou, 1970, 1974, 1981). She credits a teacher with helping her to speak again, igniting her extraordinary love for books, and encouraging her to observe and write about the world around her. Other salient compensatory and protective factors that stand out in her memoirs are the steady presence and guidance of her grandmother who provided financial stability during economically perilous times and modeled incredible strength of character and resolve in dealing with numerous experiences with racism and

M.O. Wright (✉)

Department of Psychology, Miami University, Oxford, OH, USA

e-mail: wrightmo@miamioh.edu

A.S. Masten

University of Minnesota, Minneapolis, MN, USA

discrimination. The love of her brother, vitality and support of her mother, and opportunities within the African American community to participate actively in the struggle for civil rights likely fostered her resilience as well. And, of course, Angelou also brought to these interactions the power of intellect, creativity, performing skills, a vibrant personality, and indomitable spirit.

Compelling case histories of resilience, like that of Angelou and many others, have inspired pioneering research to understand the processes that account for the capacity to recover and thrive following extremely difficult life circumstances. When researchers began to follow “at risk” children into adolescence and adulthood, they observed dramatic variations in adjustment, including cases of unexpectedly consistent positive development, or, as in the example of Maya Angelou, evidence for dramatic turnarounds later in life. Early groundbreaking studies of children facing a variety of stressful life events and psychosocial adversities (Garmezy, Masten, & Tellegen, 1984; Murphy & Moriarty, 1976; Rutter, 1987; Werner & Smith, 1982) led to decades of research as investigators across the globe set out to understand the phenomenon of resilience in diverse contexts. Theory and research on the role of culture in resilience was neglected in the early decades, but now is burgeoning (Masten, 2014b; Panter-Brick & Leckman, 2013; Ungar, Ghazinour, & Richter, 2013).

In this chapter, we overview key resilience concepts and terminology, delineate various models examining resilience processes, and highlight very briefly what has been learned over the past half century about pathways to resilience. Resilience is conceptualized within a dynamic, embedded, ecological systems framework, encompassing interactions across multiple levels, from the level of genes to person, family, community, and cultural group (Cicchetti, 2013; Wright, Masten, & Narayan, 2013).

1.1 What Is Resilience?

The terms ‘resilience’ or ‘resilient’ are now widely recognized and familiar to many in the lay public. These terms are often used by doctors, therapists, policy makers, teachers, academics, and the popular press to refer to individuals who “bounce back” after significant stress and adversity. Despite its popularity, however, the “deceptively simple construct of resilience” (Kaplan, 2005, p. 39) has been the topic of many definitional debates and its utility as an explanatory construct has been questioned. Resilience derives from the Latin verb ‘resilire’, meaning to leap or spring back; to rebound, recoil. It was first introduced into the scholarly literature in 1818, when Thomas Tredgold used the term to describe a property of timber, and to explain why some types of wood were able to accommodate a sudden and severe load without breaking (cited in McAslan, 2010). Forty years later, Mallet (cited in McAslan, 2010) developed a way to measure the ‘modulus of resilience’ to assess the ability of materials to withstand severe conditions. After many years of productive usage in engineering and physics, the term was adopted by ecologists and

developmental scientists as a metaphor for the capacity of a dynamic system (e.g., a rain forest, a family, a community) to respond to challenges and threats, survive, and continue to prosper (Gunderson & Holling, 2002; Masten & Obradović, 2008).

1.2 Key Concepts and Terminology

Although definitional issues continue to be the subject of some debate, there is broad consensus on key concepts. (Masten, 2014b, p. 10) has defined *resilience* as “The capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development”. This definition is intentionally broad and scalable across system levels and disciplines. However, it requires further delineation in the context of application, to define the meaning of “capacity” or “adapt successfully” or “significant challenges.” Research on resilience requires conceptual and operational definitions of these components, and culture plays many roles in how resilience is defined.

Definitions of resilience always consider both the nature of the threat to adaptation and the quality of adaptation following threat exposure. Threats to adaptation are typically conceptualized by a variety of terms such as *risk*, *adversity*, and *stressful life events*. Positive adaptation is also defined and assessed in a variety of ways, including absence of psychopathology, success in age-salient *developmental tasks*, subjective well-being, and relational *competence* (see Table 1.1 for our definition of key terms).

It is critical to remember that risk is a probabilistic term. It signifies an elevated probability of a negative outcome for members of a designated risk group, but it does not indicate the precise nature of the threat to an individual or differentiate which individuals in the risk group will demonstrate a negative outcome. Risk is often multifaceted and risk factors frequently co-occur in the lives of individuals. As a result, investigators often have focused on assessments of *cumulative risk* (Evans, Li, & Sepanski Whipple, 2013; Obradović, Shaffer, & Masten, 2012). Risk categories, such as “parents divorced,” include children with widely varying experiences of pre- and post-divorce interparental conflict, family violence, economic strain, and life disruptions known to affect the well-being of children. At the same time, individual children experience even the same events differently as a function of their age, gender, development, and many other individual differences in biological, psychological, and social function. A closer analysis of divorce effects often reveals that consideration of cumulative risk, together with individual differences, provides clearer insights into the processes impacting long term adjustment among children of divorced parents (Hetherington & Stanley-Hagan, 1999; Kelly & Emery, 2003).

There is now a substantial body of research documenting that outcomes generally worsen, and resilience becomes less likely, as risk factors pile up and persist (Evans et al., 2013; Obradović et al., 2012). As a result, contemporary resilience research usually considers risk from a cumulative and contextual perspective,

Table 1.1 Definition of key terms

Resilience: The capacity of a dynamic system to adapt successfully to significant disturbances and continue or recover to healthy function or development.
Risk Factor: A variable associated with an elevated probability of a negative outcome for a group of individuals
Cumulative Risk: The summation of all risk factors that the individual has experienced or an index of the overall severity of adversity experienced; this can include multiple separate risk events or repeated occurrences of the same risk factor
Stress: The condition or experience of an imbalance in demands impinging on a person and the actual or perceived resources available to meet those challenges, disrupting the quality of functioning at some level
Stressful or adverse life events or conditions: Experiences that typically lead to stress responses in individuals
Adversity: Stressful life experiences that threaten adaptation or development
Promotive Factors (assets, resources): Measurable characteristics of individuals associated with better adaptation (for a designated outcome) in both high and low risk conditions; variables with equally beneficial effects regardless of risk level; correlates of positive adaptation
Protective Factors: Measurable characteristics of individuals associated with positive outcomes particularly in the context of high risk or adversity; a favorable moderator of risk or adversity
Cumulative Protection: The presence of multiple protective factors or influences in an individual's life
Differential susceptibility (sensitivity to context): Individual differences in reactivity or sensitivity to experience, associated with moderating effects of experience on individual function or development; such moderators may be associated with good reactions to positive environments and poor responses to negative environments
Developmental Tasks: Psychosocial milestones or accomplishments expected of members in a given society or culture in different age periods; these milestones often represent criteria by which individual development can be evaluated within the culture
Competence: The adaptive use of personal or contextual resources to attain age-appropriate developmental tasks

acknowledging that there will be dose-response gradients that reflect multiple risks piling up in the lives of individuals. For example, greater risk is presumably posed to individuals who experience an acute new adversity in the midst of ongoing poverty, war, or maltreatment than there would be for a similar, but isolated, acute adverse experience (Masten & Narayan, 2012). Past research on risk gradients has provided ample documentation of the adaptive difficulties that ensue with exposure to increasing levels of stress and cumulative risk exposure (Adler & Ostrove, 1999; Cicchetti, Rogosch, Lynch, & Holt, 1993; Pine, Costello, & Masten, 2005). Finally, it should also be noted that typically as risk gradients rise, assets and/or resources decline. This reflects the fact that risk factors and resources are often inversely related to each other and in some cases (e.g., low and high SES, poor and effective parenting) reflect opposite ends of the same continuum.

Positive adaptation can be defined at the level of the individual, family, community or other systems. In research on individual human resilience, the criteria for evaluating positive adaptation are often based on normative expectations for behavior or development in the context of age, culture, community, society, and

history. These expectations are often called developmental tasks (McCormick, Kuo, & Masten, 2011; Wright et al., 2013). Some developmental tasks, such as learning to walk or talk or care for children, are universal; some are common in contemporary societies, such as attending school and learning to read; and others vary by geography or culture, such as learning to fish or meditate or perform traditional songs or dances. Sometimes adaptive success is defined negatively, in terms of the absence of problems, but that is usually in the context of research on risk for particular disorders or symptoms, when the goal of the research is preventing the problem.

Issues regarding defining and measuring the criteria for successful adaptation in research on resilience have received considerable attention in resilience science over the years. Different decisions about criteria and measures made it difficult to compare findings in systematic meta-analytic studies, while at the same time diverse studies often revealed similar conclusions about important predictors of resilience.

As studies of resilience spread across cultures and situations, the complexity of defining positive adaptation became more evident. Studies of acculturation highlighted differences in the developmental task expectations for young immigrants navigating sometimes conflicting expectations at home and at school (see Masten, Liebkind, & Hernandez, 2012, and Telzer & Fuligni, 2009). Efforts to apply measures developed in one cultural context to study adaptive behavior in a very different context proved inappropriate or invalid in many instances, while developing new, context-specific measures was a daunting task. Qualitative studies in different cultures expanded and enriched the scope of possible criteria, while also posing more challenges for cross-contextual research (see Ungar, 2012). Some situations also challenged the meaning of successful adaptation, such as when youth voluntarily become involved in popular uprisings against perceived oppression in areas of prolonged political conflict (see Barber, 2009).

The “capacity for adapting” is typically described in terms of general resources associated with positive adaptation under most circumstances (also called assets and promotive influences) and protective factors or processes, which refer to adaptive capacities that play a special role when risk or adversity is high (Masten, 2014b; Wright et al., 2013). Resilience investigators were searching for understanding of “what makes a difference?” to account for the striking variability in adaptive outcomes among individuals confronting what seemed to be similar adversities. Many of the factors widely associated with resilience in children, for example, were well-established predictors of success in multiple domains of child development at any level of risk, such as good cognitive skills and effective parents. But evidence also accrued that there were some factors that played a larger role when the level of threat was high and others that only mattered in particular emergencies, like an automobile airbag, the fire department, or specific antibodies. Parents could play both kinds of roles, normal caregiver and emergency responder. It also became clear that the same attribute of a child or environment could function as protective in one regard and a liability in another situation. A highly inhibited child, for example, might be more susceptible to social stressors and anxiety

responses but protected from getting into dangerous situations and responding with aggression. More recently, there is growing attention to individual differences in sensitivity to experience that result in better adaptation in favorable environments and worse adaptation in unfavorable environments (Belsky & Pluess, 2009; Boyce & Ellis, 2005). These person-in-context effects are discussed further below.

Promotive and protective influences are not always well-differentiated for methodological reasons. When only a high-risk sample is studied, for example, it is not clear whether the correlates of resilience are promotive or protective influences, or both. Ignoring the distinction in order to summarize findings in the literature over the years, reviewers have observed remarkable consistency in the correlates or predictors of positive adaptation, defined in a variety of ways, under diverse conditions of adversity, also defined in a variety of ways (e.g., Luthar, 2006; Wright et al., 2013). Masten (2001, 2004) described the commonly observed correlates of resilience for young people as “the short list,” positing that these frequently reported factors linked to resilience (e.g., good cognitive abilities, a close relationship to sensitive and responsive caregivers, socioeconomic advantages, and effective schools) represent fundamental adaptive systems both within and outside the individual. These systems reflect both biological and sociocultural evolutionary processes that support human development under many conditions. One of the lessons learned from this body of research is that most individuals who manifest resilience do not possess mysterious, unique, or exclusive qualities. Rather, they have been able to draw from common resources of adaptive capacity, within the person, their relationships, and their connections to other systems. Table 1.2 highlights some of these bio-psycho-social-cultural adaptive systems and processes.

As the definition of resilience became more systems oriented and consequently, more dynamic, the capacity for resilience also was conceptualized in terms of interacting systems, congruent with relational developmental systems theory (Overton, 2013; Zelazo, 2013). In dynamic, open systems, the behavior of the individual system is influenced by many interactions inside the individual system and with other systems. As a result, human individual adaptation and development emerges from the interplay of many systems and the capacity for adaptive responses to a challenge will also depend on other systems. In other words, human capacity for adaptive responses to challenges is distributed across interacting systems, including adaptive systems within the person and embedded in relationships and connections to other systems, in the family, community, and culture (Masten, 2014b).

Table 1.2 Examples of bio-psycho-social-cultural systems and processes potentially implicated in fostering resilience for children and families

Within the individual
Genetic moderators and epigenetic processes
Positive physical health and immune function
Adaptive self-regulation system (physiological, emotional, cognitive, and behavioral)
Adequacy of stress response systems
Strong cognitive and problem-solving abilities
Agency and an effective mastery motivation system
Adaptive temperament and personality
Within the family
Close attachment relationships
Positive extended family and kinship ties
Cohesiveness, structure, and support within the family
Effectiveness of parenting in the cultural context
Family rituals, values, and beliefs
Financial stability
Within the community
Safety of the physical environment
Affordable housing
Effective education system
Peer friendships with positive values and norms
Presence of religious and spiritual communities
Good public health care and social services
Employment opportunities
Adequate access to emergency (police, fire, medical) and legal services
Access to recreational facilities
Within the culture and society
Belief systems that give life meaning and purpose
Protective child policies (child labor, child health and welfare policies)
Socioeconomic policies and health of local and national economy
Availability and adequacy of emergency response systems
Access to material resources
Human rights; Adequacy of general laws and legal systems for protection of citizens
Prevention of and protection from oppression and political violence
Global relationships with international community
Peaceful political situation and some degree of national security

1.3 Key Issue: Is Resilience an Individual Trait or a Dynamic Multi-determined Process?

One area of enduring debate in resilience theory over the years was whether resilience should be viewed as a trait or as a dynamic process (Bonanno & Diminich, 2013; Luthar, 2006; Masten, 2013; Rutter, 1979). This controversy

stemmed in part from the challenge of judging the status of a dynamic developing system in a meaningful way with respect to a specific point in time. Curtis and Cicchetti (2003) argued persuasively that a living system, by its very nature, is characterized by “dynamic process that is influenced by neural and psychological self-organization, as well as transactions between the ecological context and the developing organism” (p. 776).

The focus on resilience as a trait has been more common in adult than child literature, where resilience has sometimes been characterized as a personality characteristic that offers protection against life stress and adversity. However, there is little evidence to support a singular, broad trait of resilience and a considerable downside to this notion (Masten, 2013, 2014b; Panter-Brick & Leckman, 2013; Wright et al., 2013). Many individual and contextual factors have been linked to resilience and, as noted above, the same characteristic can pose as vulnerability in one context and protection in a different context. Moreover, many of the processes associated with resilience (like a close relationship or community support) are not “in” the person. The notion of resilience as a trait also carries a high risk of blaming the victim when an individual does not manifest resilience in a difficult situation. As Garbarino remarked, following decades of research with high risk inner city youth: “Being unable to protect oneself against the accumulation of risk factors does not constitute moral turpitude. Some environments are too much for anyone” (2005, p. xiii). We need to be vigilant in guarding against such judgments. Even characteristics commonly linked to resilience (e.g., good problem-solving skills) do not provide absolute buffers to stressful life events; there are situations so hostile and threatening, such as prolonged deprivation and maltreatment, that no child would be expected to develop well (Cicchetti, 2013).

Developmental scholars have described resilience in terms of adaptive, developmental process promoting positive adjustment (e.g., Egeland, Carlson, & Sroufe, 1993). In a dynamic, systems model of development, all adaptive behavior and development itself arise from continual interactions of systems within the individual and also the interaction of the individual with the environment, including other people and other systems (e.g., physical ecology, educational systems, and employment resources). Given the interplay among many embedded, interacting systems in contributing to the adaptation of individuals, it may be most accurate to say that resilience involves many processes and the capacity for resilience is distributed across interacting systems (see Table 1.2).

Table 1.2 provides an overview of some of the many bio-psycho-social-cultural systems and processes potentially implicated in fostering resilience. To illustrate, the capacity of a child to deal with adversity is likely to depend on the child’s own capabilities for regulating emotion and stress, the child’s cognitive abilities, the capabilities of an effective caregiver watching out for the child, and resources available to the child directly or indirectly through the family or the community and culture. How well the caregiver handles the situation is likely to depend on how well the family is functioning and supports available to the family, including routine and emergency services in the community, and cultural beliefs and practices. Families and communities transmit cultural practices that may promote

resilience in children in addition to providing support during times of needs. Both the social and the physical ecologies of child development contribute to resilience (Wachs & Rahman, 2013).

An individual's adaptation is also dynamic and can change over time. Consequently, the same individual may show maladaptive functioning at one point in time and resilience later in development or vice versa, depending on recent exposure to stress and the broader context of resources in his or her life. An individual person might also be resilient with respect to some kinds of stressors and not others, and a person might be resilient with respect to some adaptive outcomes, but not others (e.g., work competence but not relational competence) (Luthar & Cicchetti, 2000; Masten & Wright, 2010; Rutter, 2007). Such complexity highlights the importance of adopting an ecological, transactional approach to understanding resilience (Cicchetti, 2013; Cowen & Durlak, 2000; Ungar, 2012; Ungar et al., 2013). Research informed by a transactional perspective underscores the importance of studying processes across multiple interconnected bio-psycho-social-cultural domains that can change over time, with changes in one domain of functioning potentially cascading to affect other domains (Masten & Cicchetti, 2010). Since adversity, challenges, and opportunities can occur at any point in development, with consequences that potentially alter development over the immediate and/or the long term, a lifespan developmental perspective is essential for a full understanding of resilience.

1.4 Models of Resilience

Three types of resilience models are discussed here: person-focused, variable-focused, and hybrid models. These models guided the strategies for assessment and analyses that operationalized and tested ideas about the connections among risks, adaptive function, and other factors that might play a role in resilience.

1.4.1 *Person-Focused Models*

Person-focused models, initially inspired by compelling case studies, have the individual person as their primary focus of analysis. There are a variety of different person-focused approaches, including qualitative and quantitative approaches which differ in their emphasis on inductive versus deductive reasoning, respectively. Quantitative research focuses specifically on a context of validation whereas qualitative research focuses on a context of discovery (Sullivan, 1998). In variable-based quantitative research, there is a tendency to generalize from aggregate group data to individual cases, converting the numbers into a narrative to explain how a developmental process occurs. In contrast, qualitative methods work directly from narratives and are better able to preserve the specific meanings that an individual

attributes to his or her experiences and actions. Thus, qualitative methods are particularly well-suited to discovering and understanding the subjective experience of individuals encountering highly stressful life conditions and capturing the complexity of their social context (Sullivan, 1998; Wright, Fopma-Loy, & Oberle, 2012).

Quantitative studies have two basic forms. One approach involves classification of high-risk individuals into groups according to the quality of their adaptation, followed by comparisons on variables that may account for the differences in outcome. A classic example is provided by widely-cited findings from the Kauai study by Werner and Smith (1982, 1992, 2001). These investigators identified a subgroup of resilient young people and compared them to their less successful high-risk peers of similar background. This type of model classifies individuals as either resilient or not and subsequent analyses attempt to determine the moderating and mediating factors that differentiate these groups of individuals. This model has been extended to include comparisons across four groups differing in exposure to risk, including a resilient subgroup (high risk, high adaptation), a vulnerable group (high risk, low adaptation), a competent low risk group (high adaptation, minimal exposure to risk or adversity) and a maladaptive subgroup that has not been exposed to a high level of risk and is functioning poorly. Research utilizing all four groups has typically reported a lower frequency of people in the low-risk maladaptive category, reflecting perhaps the overall bias in human development towards adaptive outcomes and/or the exclusion of some highly vulnerable participants from participation in research studies (Masten et al., 1999).

Recent person-focused approaches have utilized latent growth modeling in an effort to explore resilient pathways over time. These models will be discussed subsequently as hybrid models because of their ability to capture both the variability in individual growth curves over time as well as between-person and between-group differences in developmental trajectories.

1.4.2 Variable-Focused Models: Testing Promotive, Protective, Mediating, and Preventive Effects

In variable-focused models, multivariate statistics are employed to test different kinds of effects, representing hypotheses about the ways in which risks, resources, and potential mediators or moderators of risk may contribute to adaptive outcomes. The statistical tests, in effect, are evaluating the likelihood of a functional relation among the variables, although causal effects cannot be determined. Direct effects of a variable on an outcome, reflecting main effects, suggest factors that may function as risk or promotive factors. Some variables (e.g., maltreatment) have generally negative consequences (defining a risk factor or adversity) and some variables (e.g., a good sense of humor) have generally positive consequences. Many other

variables reflect a bidirectional continuum that is generally related to adjustment (e.g., quality of parenting or intellectual ability).

It is also possible to test for mediating effects of adversity or risk on some outcomes via an indirect effect of the purported mediator. A classic example is the hypothesis that adversity harms children by undermining the quality of parenting available. Economic strain, for example, affects the parents (e.g., they become depressed or fight more with each other), which in turn degrades the quality of their parenting, which then affects the child. Conger and colleagues (Conger & Conger, 2002; Conger, Rueter, & Conger, 2000) have tested this kind of indirect effect in their family stress model, showing for example, that the Iowa farm crisis may have had such effects on adolescents, mediated by parenting quality.

Investigators often test moderating effects as well, where a potential moderator is believed to alter the possible impact of risk or adversity on the outcome of interest. Statistically, these effects reflect significant interactions of the risk variable with the moderating variable in predicting the outcome of interest. Moderating effects have been described in terms of protective effects, vulnerability, and differential susceptibility or sensitivity to context. These distinctions reflect judgments about the nature of the effects in relation to what is normative or expected at a given level of adversity and the nature of the moderating variable (see Masten, 2013). Protective factors are associated with better than expected outcomes at high levels of risk and vulnerability factors are associated with worse than expected outcomes under high risk conditions. Sometimes the same variable can function as a promotive and protective factor, as noted above. In this case, a main effect and an interaction effect would be expected. Differential susceptibility, or sensitivity to context effects, discussed above and also below in the next section reflect a different kind of moderator. When risk is high, this kind of moderating variable shows a vulnerability pattern, but when risk is low (the context is favorable), the same variable shows a promotive pattern. In other words, the effect depends on the context.

Recently there has been great interest in models that examine differential reactivity to context. These models explore the possibility that some children are more reactive than others to both negative (risk-promoting) and positive (development-enhancing) environmental conditions. This enhanced sensitivity increases developmental responsiveness or reactivity to the environment (Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007; Belsky & Pluess, 2009; Boyce & Ellis, 2005; Ellis & Boyce, 2011). That is, the particular characteristics of a child that might make him or her disproportionately vulnerable to stress might also make the child more likely to benefit from contextual support and resources (e.g., responsive to protective factors). As so aptly put in the title of the seminal article by Belsky and colleagues (2007, p. 300), the influence of a differential susceptibility variable depends on the context, “for better or for worse.” This concept underscores a point made early in the resilience field that it is the function of an attribute in a given context that matters, which can vary depending on the situation (Rutter, 1987; Masten, 2013). For example, infant and toddler negative emotionality and difficult temperament have been explored as potential differential

susceptibility factors. Supporting this hypothesis, Pluess and Belsky (2009) found that children with difficult temperaments displayed more behavioral problems when raised in low quality environments, but fewer behavior problems when the quality of the rearing environment was high than did children with easy temperaments, who did not differ as dramatically based on the rearing environment. The findings in this area highlight the importance of examining not only the person but also the context to understand what leads to both vulnerability and resilience.

Transactional and cascade models reflect another variation on variable-focused models that have received considerable attention in recent years. These models often apply structural equation modeling or path analysis to test more complex patterns of interaction over time among multiple latent constructs or measured variables. In a seminal 1968 review, Bell drew attention to bidirectional effects, highlighting the importance of reciprocal influences in parent-child and other social relationships. His review highlighted that children were not passive recipients of their parents' socialization practices, but rather played an active role in both eliciting and altering their social experience. Following this critical review, Sameroff and Chandler (1975) proposed a transactional model that proposed that the child's development was the result of continuous, dynamic interactions of the child with the experiences provided in his or her environment.

Recent models have extended earlier formulations by drawing attention to mediating mechanisms and cascading effects across key developmental periods (e.g., Dodge, Greenberg, Malone, & The Conduct Problems Prevention Research Group, 2008; Masten & Cicchetti, 2010) and incorporating multilevel approaches to studying resilience (Cicchetti, 2013). One of the most empirically well-supported applications of the transactional model, highlighting the importance of reciprocal influences, explored the development of antisocial and aggressive behavior in youth. Patterson (1982) delineated a coercion model, whereby initial interactions between a parent(s) who lacked skill in discipline and a mildly noncompliant, temperamentally difficult child set in motion a gradual escalation of parent-child conflict, typically resulting in the parents using increasingly harsh discipline techniques in an attempt to gain control over their child. These harsh discipline practices often served to escalate the child's noncompliant behaviors, rather than reduce them. This sets in motion a coercive cycle that can result in a child who is even more difficult to discipline, and increasingly more noncompliant, hostile and aggressive, taxing the parents' coping even further. There have been many empirical confirmations of this theory over the years, highlighting reciprocal patterns of negative interchanges resulting in later problems with aggression and antisocial behavior (Eddy, Leve, & Fagot, 2001; Pardini, 2008; Patterson, 2002). The findings have significantly informed treatment approaches aimed at breaking these coercive interactions between parents and children and promoting more adaptive long-term outcomes (Brestan & Eyberg, 1998; Pardini, 2008; Patterson, Forgatch, & DeGarmo, 2010).

1.4.3 Pathways and Trajectories: Hybrid Models

Recent advances in the mixed modeling of change over time within and across individuals (e.g., growth and trajectories; see Grimm, Ram, & Hamagami, 2011; Nagin, 2005) have yielded hybrid models that combine features of person-focused and variable-focused models (Masten, 2013). Pathway models focus on identifying different developmental trajectories and provide an opportunity to explore turning points in individuals' lives that might promote resilience as well as setbacks that might impede positive adaptation. Longitudinal data are required for such analyses and allows for the examination of within person changes and between person differences over time which can provide valuable information on processes that serve to produce stability or change in adjustment.

Prior theory and research have identified at least four distinct patterns of positive functioning following acute or chronic life stressors (Bonanno & Diminich, 2013; Masten & Obradović, 2008; Masten & Wright, 2010; Norris, Tracy, & Galea, 2009). *Stress resistance* refers to a pattern in which the individual seems relatively undisturbed by the adversity encountered. In this pattern the individual is able to maintain reasonably steady and positive adaptive behavior even in the presence of ongoing threats. An example would be a child who demonstrates good functioning in all age-salient developmental tasks despite growing up in a poor family in a dangerous neighborhood, or living with a parent who struggles with substance abuse or depression. A second pattern is indicated by a trajectory in which the individual may experience some initial negative reaction following the experience of a stressful life event or an adversity, but then returns (rebounds) to pre-event functioning. This can be referred to as a *recovery pattern* which can vary considerably in terms of speed of recovery. Typically the time frame for recovery of normal function is short, reflecting the capacity to rebound fairly quickly. In other breakdown and recovery trajectories an individual's prior adaptive functioning declines significantly following the experience of adversity but does return to his or her pre-event level of functioning at a later time. This pattern is often expected to occur in situations of severe or chronic adversity or sudden catastrophe. Such conditions represent stressors that are so challenging that maintaining good adaptation is not expected. For example, when a severe natural disaster has occurred, recovery is expected after the threat has diminished and the community's living conditions have improved. Similarly, a child who is subjected to severe ongoing abuse or neglect is not expected to function well until there has been improvement in his or her caretaking environment. Recovery may be gradual, or it can be significantly delayed, particularly if the adversity continues. Consequently, if the evaluation of an individual's resilience occurs within a short time frame following a disaster or in the midst of chronic adversity, a later-recovering individual would not be identified as resilient at that time, but might be subsequently if the cohort was followed over time. Similarly, in the case of an individual who appeared to regroup quickly but then later fell apart, the identification of resilience for that person would depend on the timing of the assessment of resilience. *Normalization* (termed

emergent resilience by Bonanno & Diminich, 2013) describes a trajectory that occurs when a child begins life in an adverse rearing environment (such as an orphanage where neglect is present) and then the child's situation improves (e.g., through adoption into a loving home). Following a positive change in the environmental conditions, a child may show accelerated development and biopsychosocial changes that result in movement towards a normal developmental trajectory (Beckett et al., 2006; Rutter and the English and Romanian Adoptees Study Team, 1998). Finally, *transformational or growth patterns* refer to trajectories where an individual's adaptive functioning actually improves in significant ways in the aftermath of trauma or adversity. This type of pattern has also been described as post-traumatic growth (Linley & Joseph, 2004; Tedeschi & Calhoun, 1995). Rutter (2012) also refers to this pattern of response to adversity or trauma as a 'steeling' effect, in which the individual is actually strengthened by his or her encounter with the stressful or traumatic experience. This type of response fits well with challenge models of accounting for resilience. We view *all* of these patterns as examples of resilience trajectories which differ predominantly in the time frame for recovery and degree of initial disruption of functioning following the experience of trauma or adversity.

Empirical studies of these trajectories are now emerging in the resilience literature. One study by Norris and colleagues explored resilient trajectories in adults following an acute, severe stressor (Norris et al., 2009). They utilized longitudinal data to examine the ability of adults to cope with two different types of extreme stress, severe floods and mudslides in Mexico in 1999 and the terrorist attacks in New York City (NYC) on September 11, 2001. Semi-parametric group-based modeling was utilized to identify trajectories of posttraumatic stress symptoms across 3 follow-up points spanning approximately 24 months post disaster and 30 months following the terrorist attack. Overall the combined prevalence for a resilient outcome (stress resistance and recovery trajectory patterns) was very high in both Mexico (78 %) and NYC (72 %). A delayed dysfunction group only emerged in NYC (14.3 %) but chronic dysfunction was evident in both Mexico (22 %) and NYC (13 %). A relapsing/remitting pattern of symptoms was not seen in either location following either of these stressors (Norris et al., 2009). Overall, the study provided strong longitudinal support for resilience in the overwhelming majority of adults exposed to an acute severe disaster and a life threatening situation.

Several studies of trajectories in young people also have been published. These include trajectories of recovery in child soldiers (Betancourt, McBain, Newnham, & Brennan, 2013), children post-Hurricane Andrew (La Greca et al., 2013), and adolescent girls following a devastating earthquake in China (Luo et al., 2012). In all cases, repeated measures were collected over time and then analyzed using a mixed models statistical strategy to capture distinct group trajectories of intra-individual change. The Betancourt group studied levels of internalizing symptoms over time, while La Greca and colleagues studied post-traumatic symptoms. Both studies found stress resistant and recovering patterns, as well as stable, maladaptive trajectories, and also that the majority of individuals showed resilience over time.

Luo et al. analyzed patterns of change in adolescent females over time in cortisol levels, a biomarker of stress found in hair, which were related to exposure, time, and the presence of post-traumatic stress disorder.

1.5 The Importance of an Ecological Perspective in Resilience Science

During recent years, with the profound shift to a multilevel, dynamic systems model of risk and resilience, there is a new emphasis on the processes embedded in contexts of human life and particularly in cultural processes. Identification of multiple levels within a person's ecology that impact resilience enhances the possibility of targeting a variety of contexts in which to intervene in order to reduce risk, increase resources, and strengthen protective systems. Such an ecologically informed perspective may be critical in maximizing resilient outcomes.

Sociocultural systems provide individuals, often in the context of families and communities, with systems of belief, ways of living and coping with the common vicissitudes of life, and many other practices and pooled cultural knowledge that collectively serve to support positive adaptation under normal circumstances and resilience in very difficult situations (Harkness & Super, 2012). These adaptive traditions and knowledge are transmitted across generations, selected and honed through cultural evolution. Families and cultural institutions are often assigned the task of training the next generation in these cultural beliefs and practices. Although these traditions and belief systems have been studied and documented for generations by anthropologists, there has been relatively limited focus in resilience science on cultural protective factors and processes until relatively recently. Some early reviewers emphasized that context was important (e.g., Masten, Best, & Garmezy, 1990; Rutter, 1990), individual scholars called for more sociocultural focus (e.g., Ogbu, 1981), and there was specific research on resilience in particular cultural settings (e.g., LaFromboise, Hoyt, Oliver, & Whitbeck, 2006). However, systematic efforts to study cultural processes in resilience were rare.

With efforts in the twenty-first century to broaden the study of resilience, increase international collaborations, and conduct multi-national studies, there are finally signs of a true renaissance in resilience research with serious attention, at last, to cultural context (Masten, 2014b). This transformation owes a considerable debt to scholars around the world concerned with global crises who share an objective of informing policy or practice designed to promote resilience in diverse contexts. These scholars include a network of investigators focused on the social ecology of resilience (see Ungar et al., 2013), as well as researchers focused on the potential of immigrant youth (see Masten et al., 2012). International investigators who study disaster and political violence with the goal of promoting preparedness, recovery, or peace have played a key role in this globalization wave (for overviews, see Masten, Narayan, Silverman, & Osofsky, *in press*; Tol, Song, & Jordans, 2013).

International humanitarian and economic agencies, including UNICEF and the World Bank, also have provided both leadership and funding for a more diverse and global portfolio of research on resilience (e.g., Britto, Engle, & Super, 2013; Lundberg & Wuerml, 2012).

As a result of these international efforts, motivated in many cases by global threats to human development, research on resilience in diverse contexts is growing rapidly. Concomitantly, the definition, measures, methods, findings, and issues in resilience literatures in multiple disciplines are changing to reflect the evidence, challenges, and refinements indicated by this body of new work. Enriched and broadened knowledge on resilience over the lifespan in different cultural contexts holds the promise of elucidating both universal and unique adaptive processes and smarter strategies for fostering resilience in context. The chapters in this volume offer a preview of what can be accomplished.

References

- Adler, N. E., & Ostrove, J. M. (1999). Socioeconomic status and health: What we know and what we don't. *Annals of the New York Academy of Sciences*, 896, 3–15.
- Angelou, M. (1970). *I know why the caged bird sings*. New York, NY: Ballantine Books.
- Angelou, M. (1974). *Gather together in my name*. New York, NY: Random House.
- Angelou, M. (1981). *The heart of a woman*. New York, NY: Random House.
- Barber, B. K. (Ed.). (2009). *Adolescents and war: How youth deal with political violence*. New York, NY: Oxford University Press.
- Beckett, C., Maughan, B., Rutter, M., Castle, J., Colvert, E., Groothues, C., . . . Sonuga-Barke, E. J. S. (2006). Do the effects of early severe deprivation on cognition persist into early adolescence? Findings from the English and Romanian adoptees study. *Child Development*, 77, 696–711.
- Bell, R. Q. (1968). A reinterpretation of the direction of effects in studies of socialization. *Psychological Review*, 75, 81–95.
- Belsky, J., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2007). For better and for worse: Differential susceptibility to environmental influences. *Current Directions in Psychological Science*, 16, 300–304.
- Belsky, J., & Pluess, M. (2009). Beyond diathesis stress: Differential susceptibility to environmental influences. *Psychological Bulletin*, 135, 885–908.
- Betancourt, R. S., McBain, R., Newnham, E. A., & Brennan, R. T. (2013). Trajectories of internalizing problems in war-affected Sierra Leonean youth: Examining conflict and postconflict factors. *Child Development*, 84, 455–470.
- Bonanno, G. A., & Diminich, E. D. (2013). Annual research review: Positive adjustment to adversity—Trajectories of minimal-impact and emergent resilience. *Journal of Child Psychology and Psychiatry*, 54, 378–401.
- Boyce, W. T., & Ellis, B. J. (2005). Biological sensitivity to context: A. An evolutionary-developmental theory of the origins and functions of stress reactivity. *Development and Psychopathology*, 17, 271–301.
- Brestan, E. V., & Eyberg, S. M. (1998). Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology*, 27, 180–189.
- Britto, P. R., Engle, P. L., & Super, C. M. (Eds.). (2013). *Handbook of early childhood development research and its impact on global policy*. New York, NY: Oxford University Press.

- Cicchetti, D. (2013). Annual research review: Resilient functioning in maltreated children – Past, present, and future perspectives. *Journal of Child Psychology and Psychiatry*, *54*, 402–422.
- Cicchetti, D., Rogosch, F. A., Lynch, M., & Holt, K. (1993). Resilience in maltreated children: Processes leading to adaptive outcome. *Development and Psychopathology*, *5*, 629–647.
- Conger, K. J., Rueter, M. A., & Conger, R. D. (2000). The role of economic pressure in the lives of parents and their adolescents: The family stress model. In L. J. Crockett & R. K. Silbereisen (Eds.), *Negotiating adolescence in times of social change* (pp. 201–223). New York, NY: Cambridge University Press.
- Conger, R. D., & Conger, K. J. (2002). Resilience in Midwestern families: Selected findings from the first decade of a prospective, longitudinal study. *Journal of Marriage and Family*, *64*, 361–373.
- Cowen, E. L., & Durlak, J. A. (2000). Social policy and prevention in mental health. *Development and Psychopathology*, *12*, 815–834.
- Curtis, J., & Cicchetti, D. (2003). Moving resilience on resilience into the 21st century: Theoretical and methodological considerations in examining the biological contributors to resilience. *Development and Psychopathology*, *15*, 773–810.
- Dodge, K. A., Greenberg, M. T., Malone, P. S., & The Conduct Problems Prevention Research Group. (2008). Testing an idealized dynamic cascade model of the development of serious violence in adolescence. *Child Development*, *79*, 1907–1927.
- Eddy, J. M., Leve, L. D., & Fagot, B. I. (2001). Coercive family processes: A replication of Patterson's coercion model. *Aggressive Behavior*, *27*, 14–25.
- Egeland, B., Carlson, E., & Sroufe, L. A. (1993). Resilience as process. *Development and Psychopathology*, *5*(4), 517–528.
- Ellis, B. J., & Boyce, W. T. (2011). Differential susceptibility to the environment: Toward an understanding of sensitivity to developmental experiences and context. *Development and Psychopathology*, *23*(01), 1–5. doi:[10.1017/S095457941000060X](https://doi.org/10.1017/S095457941000060X).
- Evans, G. W., Li, D., & Sepanski Whipple, S. (2013). Cumulative risk and child development. *Psychological Bulletin*, *139*(6), 1342–1396.
- Garbarino, J. (2005). Foreword. In M. Ungar (Ed.), *Handbook for working with children and youth: Pathways to resilience across cultures and contexts* (pp. xi–xiii). Thousand Oaks, CA: Sage.
- Garnezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychology. *Child Development*, *55*, 97–111.
- Grimm, K. J., Ram, N., & Hamagami, F. (2011). Nonlinear growth curves in developmental research. *Child Development*, *82*, 1357–1371.
- Gunderson, L. H., & Holling, C. S. (2002). *Panarchy: Understanding transformations in human and natural systems*. Washington, DC: Island Press.
- Harkness, S., & Super, C. M. (2012). The cultural organization of children's environments. In L. C. Mayes & M. Lewis (Eds.), *The Cambridge handbook of environment in human development* (pp. 498–516). New York, NY: Cambridge University Press.
- Hetherington, E. M., & Stanley-Hagan, M. (1999). The adjustment of children with divorced parents: A risk and resiliency perspective. *Journal of Child Psychiatry and Psychology*, *40*, 129–140.
- Kaplan, H. B. (2005). Understanding the concept of resilience. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (pp. 39–47). New York, NY: Springer.
- Kelly, J. B., & Emery, R. M. (2003). Children's adjustment following divorce: Risk and resilience perspectives. *Family Relations*, *52*, 352–362.
- La Greca, A. M., Lai, B. S., Llabre, M. M., Silverman, W. K., Vernberg, E. M., & Prinstein, M. J. (2013). Children's postdisaster trajectories of PTSD symptoms: Predicting chronic distress. *Child & Youth Care Forum*, *42*, 351–369. doi:[10.1007/s10566-013-9206-1](https://doi.org/10.1007/s10566-013-9206-1).
- LaFromboise, T. D., Hoyt, D. R., Oliver, L., & Whitbeck, L. B. (2006). Family, community, and school influences on resilience among American Indian adolescents in the upper Midwest. *Journal of Community Psychology*, *34*(2), 193–209.

- Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress, 17*, 11–21.
- Lundberg, M., & Wuermli, A. (Eds.). (2012). *Children and youth in crisis: Protecting and promoting human development in times of economic shocks*. Washington, DC: The World Bank.
- Luo, H., Hu, X., Liu, X., Ma, X., Guo, W., Qiu, C., . . . Li, T. (2012). Hair cortisol level as a biomarker for altered hypothalamic-pituitary-adrenal activity in female adolescents with posttraumatic stress disorder after the 2008 Wenchuan earthquake. *Biological Psychiatry, 72*, 65–69.
- Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 3. Risk, disorder, and adaptation* (2nd ed., pp. 739–795). Hoboken, NJ: Wiley.
- Luthar, S. S., & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies. *Development and Psychopathology, 12*, 857–885.
- Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56*, 227–238. doi:10.1037/0003-066X.56.3.227.
- Masten, A. S. (2004). Regulatory processes, risk, and resilience in adolescent development. *Annals of the New York Academy of Sciences, 1021*(1), 310–319.
- Masten, A. S. (2013). Risk and resilience in development. In P. D. Zelazo (Ed.), *Oxford handbook of developmental psychology: Vol. 2. Self and other* (pp. 579–607). New York, NY: Oxford University Press.
- Masten, A. S. (2014a). Global perspectives on resilience in children and youth. *Child Development, 85*, 6–20.
- Masten, A. S. (2014b). *Ordinary magic: Resilience in development*. New York, NY: Guilford Press.
- Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2*, 425–444. doi:10.1017/S0954579400005812.
- Masten, A. S., & Cicchetti, D. (2010). Developmental cascades. *Development and Psychopathology, 22*, 491–495.
- Masten, A. S., Hubbard, J. J., Gest, S. D., Tellegen, A., Garmezy, N., & Ramirez, M. (1999). Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology, 11*(01), 143–169.
- Masten, A. S., Liebkind, K., & Hernandez, D. (Eds.). (2012). *Realizing the potential of immigrant youth*. New York, NY: Cambridge University Press.
- Masten, A. S., & Narayan, A. J. (2012). Child development in the context of disaster, war and terrorism: Pathways of risk and resilience. *Annual Review of Psychology, 63*, 257.
- Masten, A. S., Narayan, A. J., Silverman, W. K., & Osofsky, J. D. (in press). Children in war and disaster. In R. M. Lerner (Ed.), M. Bornstein & T. Leventhal (Vol. Eds.), *Handbook of child psychology and developmental science: Vol. 4. Ecological settings and processes in developmental systems* (7th ed.). New York, NY: Wiley.
- Masten, A. S., & Obradović, J. (2008). Disaster preparation and recovery: Lessons from research on resilience in human development. *Ecology and Society, 13*. Retrieved from <http://www.ecologyandsociety.org/vol13/iss1/art9/>
- Masten, A. S., & Wright, M. O. (2010). Resilience over the lifespan: Developmental perspectives on resistance, recovery, and transformation. In J. W. Reich, A. J. Zautra, & J. S. Hall (Eds.), *Handbook of adult resilience* (pp. 213–237). New York, NY: Guilford.
- McAslan, A. (2010). *The concept of resilience: Understanding its origins, meaning and utility*. Adelaide, SA: Torrens Resilience Institute.
- McCormick, C. M., Kuo, S. L.-C., & Masten, A. S. (2011). Developmental tasks across the lifespan. In K. L. Fingerman, C. Berg, T. C. Antonucci, & J. Smith (Eds.), *The handbook of lifespan development* (pp. 117–140). New York, NY: Springer.
- Murphy, L. B., & Moriarty, A. E. (1976). *Vulnerability, coping, & growth: From infancy to adolescence*. New Haven, CT: Yale University Press.

- Nagin, D. S. (2005). *Group-based modeling of development*. Cambridge, MA: Harvard University Press.
- Norris, F. H., Tracy, M., & Gallea, S. (2009). Looking for resilience: Understanding the longitudinal trajectories of responses to stress. *Social Science & Medicine*, *68*, 2190–2198.
- Obradović, J., Shaffer, A., & Masten, A. S. (2012). Risk and adversity in developmental psychopathology: Progress and future directions. In L. C. Mayes & M. Lewis (Eds.), *The Cambridge handbook of environment in human development environment of human development: A handbook of theory and measurement* (pp. 35–37). New York, NY: Cambridge University Press.
- Ogbu, J. U. (1981). Origins of human competence: A cultural-ecological perspective. *Child Development*, *52*, 413–429.
- Overton, W. F. (2013). A new paradigm for developmental science: Relationism and relational-developmental systems. *Applied Developmental Science*, *17*, 94–107.
- Panter-Brick, C., & Leckman, J. F. (2013). Editorial commentary: Resilience in child development – Interconnected pathways to wellbeing. *The Journal of Child Psychology and Psychiatry*, *54*, 333–336.
- Pardini, D. A. (2008). Novel insights into longstanding theories of bidirectional parent-child influences: Introduction to the special issue. *Journal of Abnormal Child Psychology*, *36*, 627–631.
- Patterson, G. R. (1982). *Coercive family processes*. Eugene, OR: Castalia.
- Patterson, G. R. (2002). The early development of coercive family process. In J. B. Reid, G. R. Patterson, & J. J. Snyder (Eds.), *Antisocial behavior in children and adolescents: A developmental analysis and the Oregon model of intervention* (pp. 25–44). Washington, DC: American Psychological Association.
- Patterson, G. R., Forgatch, M. S., & DeGarmo, D. S. (2010). Cascading effects following intervention. *Developmental Psychopathology*, *22*, 941–970.
- Pine, D. S., Costello, J., & Masten, A. (2005). Trauma, proximity, and developmental psychopathology: The effects of war and terrorism on children. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology*, *30*(10), 1781–1792. Retrieved from <http://dx.doi.org/10.1038/sj.npp.1300814>
- Pluess, M., & Belsky, J. (2009). Differential susceptibility to rearing experience: The case of child care. *Journal of Child Psychology and Psychiatry & Allied Disciplines*, *50*, 396–404.
- Rutter, M. (1979). Protective factors in children's responses to stress and disadvantage. In M. W. Kent & J. E. Rolf (Eds.), *Primary prevention of psychopathology: Vol. 3. Social competence in children* (pp. 49–74). Hanover, NH: University Press of New England.
- Rutter, M. (1987). Psychosocial resilience and protective mechanisms. *American Journal of Orthopsychiatry*, *57*(3), 316–331.
- Rutter, M. (1990). Psychosocial resilience and protective mechanisms. In J. E. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), *Risk and protective factors in the development of psychopathology* (pp. 181–214). New York, NY: Cambridge University Press.
- Rutter, M. (2007). Resilience, competence, and coping. *Child Abuse & Neglect*, *31*, 205–209.
- Rutter, M. (2012). Resilience: Causal pathways and social ecology. In M. Ungar (Ed.), *The social ecology of resilience: A handbook of theory and practice* (pp. 33–42). New York, NY: Springer.
- Rutter, M., & The English and Romanian Adoptees (ERA) Study Team. (1998). Developmental catch-up and deficit, following adoption after severe global early privation. *Journal of Child Psychology and Psychiatry*, *39*, 465–476.
- Sameroff, A. J., & Chandler, M. J. (1975). Reproductive risk and the continuum of caretaking casualty. In F. D. Horowitz, E. M. Hetherington, S. Scarr-Salapatek, & G. M. Siegel (Eds.), *Review of child development research* (Vol. 4, pp. 187–243). Chicago, IL: University of Chicago Press.
- Sullivan, M. L. (1998). Integrating qualitative and quantitative methods in the study of developmental psychopathology in context. *Development and Psychopathology*, *10*, 377–393.

- Tedeschi, R. G., & Calhoun, L. G. (1995). *Trauma and transformation: Growing in the aftermath of suffering*. Thousand Oaks, CA: Sage Publications.
- Telzer, E. H., & Fuligni, A. J. (2009). Daily family assistance and the psychological well-being of adolescents from Latin American, Asian, and European backgrounds. *Developmental Psychology, 45*, 1177–1189.
- Tol, W. A., Song, S., & Jordans, M. J. D. (2013). Annual research review: Resilience and mental health in children and adolescents living in areas of armed conflict—A systematic review of findings in low- and middle-income countries. *Journal of Child Psychology and Psychiatry, 54*, 445–460. doi:[10.1111/jcpp.12053](https://doi.org/10.1111/jcpp.12053).
- Ungar, M. (Ed.). (2012). *The social ecology of resilience: A handbook of theory and practice*. New York, NY: Springer.
- Ungar, M., Ghazinour, M., & Richter, J. (2013). Annual research review: What is resilience within the social ecology of human development? *Journal of Child Psychology and Psychiatry, 54*, 348–366.
- Wachs, T. D., & Rahman, A. (2013). The nature and impact of risk and protective influences on children's development in low-income countries. In P. R. Britto, P. L. Engle, & C. M. Super (Eds.), *Handbook of early childhood development research and its impact on global policy* (pp. 85–122). New York, NY: Oxford University Press.
- Werner, E. E., & Smith, R. S. (1982). *Vulnerable but invincible: A study of resilient children*. New York, NY: McGraw-Hill.
- Werner, E. E., & Smith, R. S. (1992). *Overcoming the odds: High risk children from birth to adulthood*. Ithaca, NY: Cornell University Press.
- Werner, E. E., & Smith, R. S. (2001). *Journeys from childhood to midlife: Risk, resilience, and recovery*. Ithaca, NY: Cornell University Press.
- Wright, M. O., Fopma-Loy, J., & Oberle, K. (2012). In their own words: The experience of mothering as a survivor of childhood sexual abuse. *Development and Psychopathology, 24*, 537–552.
- Wright, M. O., Masten, A. S., & Narayan, A. J. (2013). Resilience processes in development: Four waves of research on positive adaptation in the context of adversity. In S. Goldstein & R. B. Brooks (Eds.), *Handbook of resilience in children* (2nd ed., pp. 15–37). New York, NY: Springer.
- Zelazo, P. D. (2013). Developmental psychology: A new synthesis. In P. D. Zelazo (Ed.), *The Oxford handbook of developmental psychology: Vol. 1. Body and mind* (pp. 3–12). New York, NY: Oxford University Press.