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Child and Family Resilience: A Call for Integrated Science, Practice, and Professional Training

Science and practice focused on child resilience and family resilience have deep and intertwined roots, yet there have been surprisingly few efforts to systematically integrate the theory, findings, and implications of these two traditions of work. In this article, the authors discuss parallels in concepts and processes that link the sciences of child and family resilience and the potential of relational developmental systems theory to provide an integrative framework for understanding and promoting resilience in children and families. The authors describe components of an integrated approach to child and family resilience, highlighting examples from recent research, and discuss implications for research, practice, and professional training.

Resilience has been conceptualized and studied for decades at the level of the individual child (Cicchetti, 2013; Masten, 2013, 2014b) and also at the level of the family (Becvar, 2013; Goldenberg & Goldenberg, 2013; Walsh, 2006, 2011). The family as an adaptive system and a context for human development has played central roles in the science on risk and resilience.

Many parallel concepts have emerged in the literature on individual and family resilience, and there are numerous processes linking the two fields, conceptually and in practice. Yet there have been surprisingly few efforts to integrate these bodies of work. In this paper, we suggest that contemporary developmental systems theory offers a theoretical framework for integrating these two traditions. Resilience is defined broadly to encompass multiple, interacting systems and key components of an integrated approach to child and family resilience are delineated, with examples from recent research. Potential benefits of integration for science, practice, and professional training concerned with human resilience are discussed.

Shared Roots

There are striking parallels in the evolution of resilience concepts and science in the scholarship focused on families and individual children. Both have roots in general systems theory (von Bertalanffy, 1968) and clinical fields focused on understanding and treating psychopathology. Beginning in the 1960s and emerging rapidly in the 1970s and 1980s, pioneering investigators studying the etiology of mental health and developmental problems shifted their attention to individuals in high-risk categories who were doing well and even flourishing, in an effort to improve theory and practice (Masten, 2014a, 2014b). These pioneers recognized early that family function and caregiving quality played central roles in the resilience of high-risk children (Masten & Coatsworth, 1998). This early work generated waves of subsequent research focused on resilience in developmental science (Wright, Masten, & Narayan, 2013) that highlighted previously neglected positive predictors, outcomes, processes, and goals. This body

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of work had transformative effects on theory, research, and practice, resulting in a shift from deficit- to strength-based frameworks (Masten, 2011, 2014b).

Similar transformative effects can be noted in the history of family resilience theory, which shares some of the same roots in general systems theory but also has important and distinctive roots in family systems theory and therapy (Goldenberg & Goldenberg, 2013; Nichols, 2013; Small & Memmo, 2004; Walsh, 2006). As noted by Walsh (2011), the concept of family resilience shifted attention from family as a resource or protective system for the individual members of a family to the function of the family unit as a whole, studied in terms of family adaptation or maladaptation in the context of adversity and the family processes that sustain family resilience. McCubbin, J. M. Patterson, and their colleagues were particularly influential in shifting family theory and practice toward a focus on family adaptation to stress (e.g., Boss, 2001; McCubbin & Patterson, 1982). Akin to the effects of child resilience research, family resilience theory, research, and therapy spurred a profound shift to strength-based approaches (Nichols, 2013; J. M. Patterson, 2002; Walsh, 2006, 2011).

Definitions of Resilience in Dynamic Living Systems

Over the decades, definitions of *resilience* in sciences concerned with child and family systems have become more dynamic, multilevel, and process oriented in focus, reflecting a broad theoretical shift toward a relational developmental systems framework in life course human developmental science and related fields (e.g., Overton, 2013; Zelazo, 2013). This perspective integrates ideas from general systems theory, ecological theory (Bronfenbrenner & Morris, 1998), developmental systems theory (e.g., Lerner, 2006; Sameroff, 2010), biology (Lickliter, 2013), family systems theory (see Goldenberg & Goldenberg, 2013), developmental psychopathology (Cicchetti, 2013; Sroufe, Egeland, Carlson, & Collins, 2005), and resilience theory (Cicchetti, 2013; Masten, 2013, 2014b).

From this prospective, human adaptation and development arise from continuous interactions across many levels of function within individuals as well as between individuals and their environments. The course of development reflects those myriad interactions, from the molecular level to the societal level. Similarly, adaptation and development of a family reflects many levels of interaction within the family and with the systems the family encounters. In other words, contemporary systems models assume that many systems interact or "coact" to shape the course of development in an individual or a family.

Definitions of resilience in a systems-oriented conceptual framework underscore the emergent nature of manifested resilience, emphasizing processes and interactions among interdependent systems. Resilience is not construed as a trait, though numerous individual and family attributes are associated with the emergence of positive adaptation in the presence of threats and elevated risk (DeHaan, Hawley, & Deal, 2013; Masten, 2013). Instead, resilience refers to the capacity for adapting successfully in the context of adversity, typically inferred from evidence of successful adaptation following significant challenges or system disturbances. Resilience "in action" can be observed most directly when the processes of adaptation to a major disturbance are in progress. Yet resilience also can be inferred from evidence that the system is "likely" to respond well given the resources and adaptive capabilities available to the system. Efforts to prepare individuals, families, communities, and other systems for anticipated challenges often have the goal of building system capacity for positive responses to disturbances.

Concomitant with the shift toward increasingly dynamic models of resilience, there is growing interest in definitions of resilience and related concepts that are scalable across system levels of interest and fields of science, not only in child and family resilience literatures, but also many other fields, such as ecology (Masten, 2011; Masten & Obradović, 2008). Scalable definitions were particularly motivated by global challenges, such as disaster, climate change, and war, that call for integrated sciences, practices, and policies to prepare for and facilitate resilience across interconnected systems. Given this growing interest in scalable definitions, *resilience* can be defined broadly as "the capacity of a dynamic system to adapt successfully to disturbances that threaten its function, viability, or development" (Masten, 2014a p. 10). This definition of resilience could apply to an individual, family, computer system, economy, or ecosystem, among other systems. The capacity

of any given system to adapt to challenges depends on the function of many interacting, changing systems. The resilience of children and their families are intertwined and also linked to supports and systems beyond the family in community, culture, and the physical environment.

Components of Resilience Frameworks in Children and Families

Resilience viewed from the perspective of contemporary developmental systems theory suggests a framework for integrating distinct traditions of science and practice to forge a more integrated science and practice on resilience that could encompass the levels of child and family, as well as additional, interacting systems. We suggest that an integrated framework for child and family resilience requires the following core components and integrative processes.

- Definitions of positive adaptation at the level of child and family and processes that link adaptive function across system levels
- Delineation of pathways of adaptive function in child and family over time and the interplay of these adaptive pathways
- Identifying promotive processes for adaptive development in children and families and processes by which these effects spread across systems
- Identifying risks to positive adaptation or development for child and family and processes by which risk spreads across systems
- Identifying protective processes that prevent or mitigate adverse effects or boost recovery from adversity in a child or a family and processes by which protective influences spread across systems.

Integrated models would consider the processes by which one functional domain and level of a system comes to influence another domain or level over time, such as a change in family routines altering the behavior or immune function of a child. These processes can be described as "multilevel dynamics" (Masten, 2007) and the effects of these processes could alter the course of development, within a family system, a child, or across generations. Such changes have been called "snowball" effects or "developmental cascades" (Masten & Cicchetti, 2010). In the following section, we discuss these components and processes as they pertain to

integrating resilience science in children and family systems.

Positive Adaptation in Children and Families

What does it mean for a system, a child, or a family to be "doing well" or "OK"? Child resilience investigators have long recognized that resilience is inferred from judgments about risk (discussed further below) and adaptive function or development (Luthar, Cicchetti, & Becker, 2000; Masten & Coatsworth, 1998). What are the criteria or standards by which we identify whether a person, a family, or any other system is adapting well? What is this system "supposed" to be doing? How can we tell if things are going well or not? Who decides?

Issues in defining positive child development, adaptation, competence, or success have received considerable attention in child resilience science (e.g., Masten & Coatsworth, 1998; Wright et al., 2013). These criteria vary across the life course, historical time, geographical location, and sociohistorical context. One major approach to the criteria for judging adaptation is positive, focused on age-related expectations for behavior and achievement defined by communities and societies, often termed "developmental tasks" (McCormick, Kuo, & Masten, 2011). Some of these psychosocial or physical milestones reflect species-typical achievements, such as learning to walk or talk, whereas others are more specific to a culture or time in history, such as learning written language or how to hunt bison.

There is widespread agreement that competence and developmental tasks are multidimensional. Some studies of psychosocial resilience focus on one particular dimension or competence domain, such as academic achievement, whereas others use multiple criteria to define resilience (i.e., doing well in all major developmental tasks for a given age period).

A second approach for judging adaptation, defined by low levels or absence of symptoms or disorder, stems from the initial focus on children at risk for psychopathology in the history of child resilience science. This negative approach has been criticized theoretically (e.g., Kaplan, 1999) and also from a common-sense perspective. When asked to think of a person who has shown resilience, most people would not nominate individuals who manage to avoid illness but instead people who succeed in life by criteria

important in their culture and time. Nonetheless, investigators understandably sometimes compare those who became ill with those who did not in an effort to determine what confers "resilience" with respect to that disorder.

What does it mean for a family system to be doing well or fulfilling its functions effectively? McCubbin and Patterson (1983; J. M. Patterson, 2002) described the desired outcomes of family resilience in terms of success in fulfilling important expected functions of the family. These tasks included functions such as providing a sense of belonging and meaning, affording economic support, educating and socializing family members, and protecting vulnerable members of the family (J. M. Patterson, 2002). The effectiveness or success of a family would then be judged according to these expectations. Again, the criteria were multidimensional.

Family research and therapy approaches also sometimes use negative criteria to define family resilience, usually in regard to interventions to prevent family dysfunction, such as child neglect or abuse. In this case, family resilience might be defined in terms of reduced incidence of maltreatment, rather than a positive goal of improving the quality of family relationships.

Developmental perspectives also are important for defining how well a family is doing. Families form, develop, and change over time, moving through life cycles related to the development of individuals within a family and multiple generations (Goldenberg & Goldenberg, 2013; Walsh, 2011). Expected functions of the family depend on life cycles of the family and its members. For instance, parents in a family are not judged on how well they are rearing children unless or until children join the family. When an individual or couple in a family has children, caring for children becomes a developmental task for the family. Later, socializing children to behave according to sociocultural norms is a family task. Some tasks are cultural and some are legal. Failure to meet expectations can result in criticism, legal action, or both.

Family responsibilities, however, extend beyond the well-being and socialization of children. Effective families have responsibilities for all individual members and also obligations beyond the family itself. Families often are expected to support and contribute to their communities, cultures, and other important systems in societies, such as schools or religious organizations (Harkness & Super, 2012; Walsh, 2012).

In family theory, qualities of effective or adaptive families have been described for decades. For example, Pratt (1976) described the "energized family" as responsive, involved, open, flexible, connected to the community, active in problem solving, and providing age-appropriate parenting to their children. Olson et al. (Olson, 2000; Olson & Gorall, 2003) described good family function in terms of the circumplex model, in which well-functioning families were balanced on dimensions of cohesion and flexibility, in addition to good communication.

Over the years, effective parenting has also been described in reference to desirable outcomes in children, such as school success. The construct of authoritative parenting depicts competent parenting in terms of high warmth, effective structure or discipline, and high expectations (Baumrind, 1966; Steinberg, 2001). Variations were noted in relation to context; for example, in a dangerous environment, parents may respond by becoming very strict to protect their children (Baumrind, 1996). Other important parenting behaviors associated with academic success, at least in developed economies, include talking and reading to young children before they enter school (e.g., Hart & Risley, 1995).

Pathways of Adaptation and Resilience

The observable pattern, course, or trajectory over time of adaptive function in a system – child, adult, or family – is often called a pathway. Pathways reflect the combined net influence of all the interacting systems that shape the life course of any specified domain of adaptive behavior, illustrating the ups and downs of adaptive success by whatever criterion is being considered. The adaptive success of an individual or other system can be plotted over time to show a steady course of positive adaptation, a breakdown and recovery, or any other fluctuations in the adaptive course of the system that could be related to changing risks, resources, vulnerabilities, or protective processes. Theoretical pathway models of positive and negative adaptation in the context of acute and chronic risk have been portrayed by a number of scholars (e.g., Gottesman, 1974; Masten & Narayan, 2012; Sroufe, 1997).

Family therapists also describe pathways of family function as they adapt in the face of challenges or journey through the process of family therapy (Walsh, 2006). In early descriptions of

families, for example, the metaphor of a roller coaster was used to capture the course of family adjustment (DeHaan et al., 2013). Hawley and DeHaan (1996) described family resilience in terms of "the path a family follows as it adapts and prospers in the face of stress, both in the present and over time" (p. 293). Family therapists also have depicted family system patterns through timelines with verbal descriptions of events and changing family function (Hawley & DeHaan, 1996; Walsh, 2011). In one of the important early articles on their double ABCX model of family crisis and adaptation, McCubbin and Patterson (1983, Figure 1, p. 12) depicted levels of adaptation (from "bonadaptation" to "maladaptation") in relation to time following a family crisis, implying pathways of adaptation.

In individual and family resilience science multiple pathways are described reflecting the influence of many interactions and variations among individuals and families as they progress through life. There is no single "right path" to resilience; there are many paths.

Since the beginnings of resilience science, qualitative studies of individual cases have been used to illustrate different pathways. With recent advances in statistical modeling techniques, it now is possible to study pathways empirically, through methods such as growth curve modeling and mixed-models or trajectory analysis (e.g., Grimm, Ram, & Hamagami, 2011). As a result, empirical studies of adaptive and maladaptive pathways are emerging, though the studies to date are limited by the challenges of collecting repeated measures of individual or family function that are required to study pathways using these new strategies.

Pathways can be defined at multiple levels of adaptive function, including behavioral (e.g., social, cognitive, emotional) and biological (e.g., stress, immunological, neural, epigenetic) levels. Betancourt, McBain, Newnham, and Brennan (2013) analyzed trajectories of internalizing symptoms in former child soldiers. Similarly, La Greca et al. (2013) have studied pathways of trauma symptoms in children following Hurricane Andrew. In both studies, a majority of young people showed response/recovery patterns indicative of resilience. Luo et al. (2012) examined pathways for the stress hormone, cortisol, by sampling hair in adolescent girls after the massive 2008 earthquake in China. Cortisol embeds in hair as it grows, providing a "diary" of changing cortisol levels (pre- and postearthquake) that could be analyzed in trajectories related to earthquake exposure and posttraumatic symptoms.

Some of the best examples of family-level growth curve analyses can be found in prevention studies. Investigators at the Oregon Social Learning Center were early leaders in applying growth curves to targeted processes in the family. For example, they showed through growth modeling that improvements in parenting, measured by gold-standard observational strategies, predict improvements in child function (G. R. Patterson, Forgatch, & DeGarmo, 2010). Similarly, Dishion and colleagues (2008) demonstrated that the Family Check-Up intervention promotes positive change in observed parenting related to improved behavior in children. These examples illustrate the possibility of linking family to child pathways, an exciting direction for future research integrating child and family resilience.

Promotive Processes

In the literature on resilience in human development, factors and processes associated with adaptive success independent of risk or adversity level have been distinguished from factors that play a demonstrably different role in the context of high risk or adversity (Masten, 2013). The former are usually termed "promotive" factors or processes (also called assets or resources), whereas the latter are termed "protective" factors or processes. A similar distinction has been recognized in the family literature on resilience (e.g., Bogenschneider, 1996).

Regardless of risk level, managing everyday life and meeting developmental tasks expectations for human development require skills, resources, and supports. For healthy development and overall success in life, children need care, nutrition, skills, health services, learning opportunities, and many other economic and social resources. They also need an array of learning, communication, and behavioral skills that depend on brain development and socialization. These resources can be viewed as aspects of the general capacity for growth and development (see Wright et al., 2013, for a list of examples). Promotive factors for positive development include internal capabilities, such as problem-solving abilities, and external

resources in a person's ecology, such as a good teacher or school system.

Families make up the early learning environment in many ways, providing countless hours of interactions that shape the development of neurocognitive systems and influence the basic tools of learning (Galinsky, 2010; Hart & Risley, 1995). These interactions hone basic learning and adaptive skills, including language, memory, attention, social and emotional skills, and multiple aspects of self-regulation. Coregulation by skilled parents scaffolds the development of self-regulation skills in children (Thompson, 2014).

Better parenting quality is generally associated with many aspects of future competence in children, including academic achievement, social competence, and parenting quality in the next generation (Masten & Coatsworth, 1998; Sroufe et al., 2005). Moreover, intervention experiments to improve parenting quality result in improved child outcomes, consistent with a causal role (G. R. Patterson et al., 2010; Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011).

Effective families also require resources and capabilities. Families depend on the skills of their internal members and the resources embedded in their social networks of extended kin and friends, as well as economic resources from employment or other sources, government supports, and community resources, including housing, community safety systems, water and sewer systems, and health care systems (Britto, Engle, & Super, 2013; Harkness & Super, 2012; Lundberg & Wuermli, 2012). Sociocultural systems, transmitted across generations, provide families with ways of living, belief systems, and many other supportive resources.

Many of the important promotive processes for child and family well-being and development involve interactions with other systems in their communities, societies, and cultures. Economic upturns can improve resources and opportunities available to communities, families, and children, potentially altering family well-being and parenting (e.g., Akee, Copeland, Keeler, Angold, & Costello, 2010). Children and families may directly benefit from community-level promotive factors such as public safety, affordable housing, and libraries. In addition, policies that support family well-being, such as the earned income tax credit or parenting classes, can benefit children through a variety of indirect processes.

Interventions and policies that promote healthy development in a child or the family as a system have the potential for spreading positive effects over levels and time. The observation that "competence begets competence" in human development (Masten, 2011) may well apply to family units as well as individuals in a family. In family theory and practice, family adaptation is viewed as an ongoing process with developmental changes and challenges, passing through life cycles where success or failure to adapt can influence the subsequent function and well-being of the family as a unit, as well as for individual family members (Goldenberg & Goldenberg, 2013; Walsh, 2006). Thus, in the lives of children or families, well timed and targeted interventions may cascade forward to influence future adaptation at multiple levels. Moreover, these cascade effects can be evaluated in terms of costs and benefits to identify the most cost-effective and strategic approaches to investing in human and social capital.

Challenges, Disturbances, and Risks

The concepts of threats and disturbances also have parallels in resilience studies at the individual and family levels, and there is a body of literature linking risk across these levels. Early child resilience science was focused on single risk factors (e.g., fetal alcohol exposure, low birth weight, divorce, depressed mother) that forecasted elevated probabilities of specified undesirable outcomes. Investigators soon realized that risk factors often co-occur or pile up in a person's life, and high "cumulative risk" was a better predictor of negative outcomes than individual risk factors (Evans, Li, & Whipple, 2013; Masten, 2013).

Family resilience scholars also focused on cumulative risk and multiplicity of threats. McCubbin and Patterson (1983) described a "pile-up of family demands" in the double ABCX model (p. 13). J. M. Patterson (2002) noted further that families, like individuals, may face a chain of interrelated hazards that pile up over time, particularly in situations of chronic adversity (e.g., prolonged illness, poverty, or family violence).

Additionally, challenges faced by individual children and families often are shared (e.g., homelessness and poverty) or interrelated. For instance, in the case of family violence, brutality within one dyad often co-occurs with violence

among other family members; domestic violence poses a risk for child abuse in the same family (Tolan, Gorman-Smith, & Henry, 2006). Serious threats to family effectiveness from internal (e.g., depressed mother, domestic violence) or external (e.g., economic recession, natural disaster) sources raise risks for children. Conversely, threats to a child pose challenges to the family responsible for the well-being of that child.

For children, the family often is a source or mediator of risk. Families play such a critical role in child care and socialization that breakdowns in family function represent a serious threat to child development. Divorce, interparental conflict, or mental illness in parents threaten the functional roles of parents for child rearing in addition to whatever direct emotional stress is posed for children. Divorce can be a prolonged and complex process punctuated by interparental conflict, economic hardship, changes in schools or homes, and other adversities that generate stress for children and parents before, during, or after the divorce, sometimes enduring for years (Greene, Anderson, Forgatch, DeGarmo, & Hetherington, 2012). Extensive research has documented the role of family in generating stress when there is interparental conflict (Cummings, 2006; Cummings, Davies, & Campbell, 2000; Kouros, Cummings, & Davies, 2010).

Families also can mediate the exposure of children to adversities arising outside the family, such as economic downturns or problems in the workplace. Elder's studies of the Great Depression (Elder, 1974/1999) and Iowa farm crisis (e.g., Elder & Conger, 2000) demonstrated how economic recessions disrupt family function, spilling over to affect children. Conger et al. (R. D. Conger & Elder, 1994; K. J. Conger, Reuter, & Conger, 2000) developed the family stress model to account for the processes by which family processes mediate effects of economic hardship on children through changes in parent mood, marital interaction, and parenting behavior. Similarly, war and disasters can damage function of families, injuring or harming parents outright or generating overwhelming stress (Masten & Narayan, 2012).

One of the greatest threats to child development in the family context is maltreatment, especially when deterioration of caregiving is combined with outright danger arising within the family, as happens in situations of family-based abuse and neglect (Cicchetti, 2013; Dubowitz

& Poole, 2012). Child maltreatment can be viewed as a stressor or risk for children and their development, but also as an indicator of maladaptive function at the family level. In most societies, child abuse, domestic violence, and neglect of any family member's needs would indicate that the family is failing to meet fundamental responsibilities. Child abuse and neglect often co-occur with other known risk factors, including poverty, domestic violence, unsafe neighborhoods, and poor schools, which can make it difficult to isolate the unique risks posed by specific forms of maltreatment.

Families also mediate stressors through biological pathways (Repetti, Robles, & Reynolds, 2011). "Risky families" characterized by chronic stress appear to generate immediate distress in children but also long-term sequelae for health. Repetti et al. (2011) suggested that these long-term effects are mediated by "allostatic load" on members of the family. *Allostatic load* refers to the debilitating consequences of chronic stress on the body, when the capacity for adaptive responses to stress is depleted by continuing adversity (McEwen, 1998; McEwen & Gianaros, 2011). As a result of chronic stress, including family stress, dysregulation can occur in stress-regulation systems (e.g., hypothalamic-pituitary-adrenal function) or the immune system, with lasting effects on health. There is growing concern about the long-term potential consequences of such stress in early childhood (Shonkoff et al., 2012).

The idea that family stress can become biologically embedded in individual family members is an example of dynamic, multilevel processes that link one level of interacting systems (e.g., family function) to another level (e.g., allostatic load in the individual). Another example is provided by recent research linking marital conflict, individual stress reactivity, and child symptoms. Koss et al. (2014) examined individual biological responses in two physiological stress systems (cortisol and alpha-amylase sampled from saliva) in children (around age 8) who observed video clips of marital conflict. Results suggested complex patterns of interaction among stress reactivity (in response to the videos), exposure to marital conflict, and current and subsequent emotional and behavioral problems. This study reflects a growing trend of multiple-level assessments by investigators studying risk and resilience.

A different example is provided by research on prenatal stress in mothers that has been linked to lasting changes in the fetus, and which has raised new concerns about the long-lasting consequences of maternal stress exposure. Research by Yehuda et al. (2010) suggests that prenatal exposure to trauma can alter long-term risk for posttraumatic stress disorder in offspring, most likely through programming of stress-regulation systems. Results from a study in Finland examined twins who were in gestation during the Chernobyl nuclear disaster (in nearby Ukraine), which generated widespread fear about radiation exposure, in comparison with twins born a year later, after these fears abated (Huizink et al., 2008). Differences were observed years later in stress hormones during adolescence, consistent with programming effects of maternal stress on fetal development that could result from epigenetic changes and may endure even into the next generation (Cicchetti, 2013; Meaney, 2010).

Serious threats to child well-being and development also pose great strain on families. Accidental injury or chronic illness in a child can undermine or disrupt effective family function in multiple ways. For example, mothers caring for chronically ill children have been found to have shorter telomere length (Epel et al., 2004), a biomarker of allostatic load. Alternatively, external experiences of a child in other systems can enter the family system; for example, bullying by peers at school "comes home" with the affected child.

Research thus supports the assertion that risks and threats imposing on child or family function or their relationships can spread to affect adaptive function in other systems and levels. However, protective influences and interventions also can spread, producing positive change.

Protective Processes

Protective factors or processes are distinguished from the function of promotive factors or processes by their special roles in facilitating adaption in the context of adversity or crisis. The same adaptive system that generally fosters positive child or family development may also play a special role under conditions of severe challenge. Parents, for example, may increase their level of monitoring or comforting of a child in the presence of a threat. However, there also may be protective systems that are only deployed or operate in special ways during a crisis,

analogous to emergency services, the airbag in an automobile, or administration of antibiotics. Parents may act to mobilize emergency supports or special services for their children during a crisis.

Again, there are notable parallels and interdependent processes observed in child and family resilience. Families function in diverse protective roles for children as well as all their other members. They nurture adaptive systems that lay the foundation for future resilience in their children and pass on the accumulated cultural wisdom and practices that also build capacity for adaptation. The potential in families for protecting children and facilitating their resilience make up important capacity available to children for adaptive responses in adverse contexts. Additionally, the capability of a family to provide this protective function to members of the family in the midst of adversity can be viewed as an indicator of family resilience.

Moderators of risk at the family level have been identified in terms of protective processes that mitigate risk or bolster recovery in families experiencing major adversities (J. M. Patterson, 2002; Walsh, 2013). These family processes often include qualities also identified in research on protective factors for individual family members, such as family closeness or cohesion, clear communication, comforting routines or rituals, and family beliefs or identity that convey meaning and hope. There are also protective processes for family resilience that arise in relationships beyond the family and other external protective systems. These include emergency systems to support family effectiveness, providing health care, shelter, food, financial aid, and respite care in crisis nurseries; as well as help from religious, cultural, or governmental systems that step in to help families during difficult times. Family therapy in a crisis can be viewed as an intervention to promote resilience in families, serving indirectly to protect children in the family.

Multiple protective processes and roles of parents have been identified, from the genetic to the sociocultural level. Parents may pass along an advantageous set of genes or epigenetic marks to their children; there is growing attention to the role of genetic and epigenetic influences on resilience in children and adults (Kim-Cohen & Turkewitz, 2012). Much of the recent work on genetic influences in the family considers gene–environment interactions,

recognizing that parents typically provide genes and environments, beginning with the prenatal environment. Parents, either intentionally or inadvertently, provide varied environments in the womb, at home, at daycare or school, and in the neighborhood or community as a result of their own biology, competence, education, economic resources, successes, and choices. They may also act to prevent exposure of their children to adversities or intervene to reduce their impact.

Family therapy and education programs, including family life education and parenting programs, often are designed to help parents establish routines, regulate their own emotions and behavior, monitor and discipline their children, reinforce positive behaviors in their children, or some combination of these strategies; such changes can alter family, parent, and child function at multiple levels, from a biological level within individuals to individual behavior to family interation patterns (e.g., Fisher, Gunnar, Dozier, Bruce, & Pears, 2006; G. R. Patterson et al., 2010; Sandler et al., 2011). For example, there is evidence that training foster parents to be more effective can normalize dysregulated stress systems in young children whose biology has been affected by stressful experiences (Fisher et al., 2006).

Although families support child resilience, family resilience is supported in turn by resilience in communities and societies (Becvar, 2013; R. D. Conger & Elder, 1994; Walsh, 2006). Communities provide emergency services as well as routine supports to family life, such as clean water or good schools. The importance and multiplicity of roles played by layers of religious, governmental, and nongovernmental organizations in communities and societies for family and child resilience is dramatically evident in the aftermath of mass-trauma events, including natural disasters, war, and terrorist attacks, when resilience at the level of family and child interacts with resilience of larger socioecological systems (Masten & Narayan, 2012; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008). There is considerable convergence in the recommendations based on field experience and research in this literature for supporting family and child resilience in these situations, ranging from reuniting families and restoring family routines, to resuming school and supporting cultural rituals of healing and forgiveness (Ager, Stark, Akesson,& Boothby, 2010; Masten, 2014a, 2014b).

Family Systems Nurture Adaptive Capacity in Children

Importantly, in addition to their direct roles in protecting children from immediate threats, families nurture an array of adaptive capabilities in children that build capacity for adaptive development and resilience in the future. This role of families is crucial for intergenerational transmission of resilience. The following examples illustrate several of the most widely implicated adaptive systems nurtured in families.

Attachment and Cohesion: Emotional Bonding and Security. Families provide emotional security and a sense of belonging and connectedness. Secure relationships among family members foster exploration, learning, self-efficacy, and social development in a host of ways delineated in developmental theory (e.g., Bandura, 1997; Bowlby, 1969/1982; Cassidy & Shaver, 2008) and family theory (Goldenberg & Goldenberg, 2013; Walsh, 2006, 2011). In the child literature, these relationships and functions are described in terms of attachment bonds that form initially between infants and their caregivers and later with other people in and outside the family. At the family level, similar concepts appear in the form of "cohesion" (circumplex model; Olson, 2000) and broad constructs of closeness and belonging described as key resilience processes (e.g., Walsh, 2006).

Secure attachment relationships serve to regulate arousal and stress in children. Biological stress responses of young children to a frightening stimulus will be attenuated by proximity to the secure-base figure (Gunnar & Quevedo, 2007). Infants reared in neglectful institutions with inadequate care and stimulation can become strikingly apathetic or depressed, taking little interest in their surroundings (Zeanah, Smyke, & Settles, 2006). The importance of proximity to a secure base in the form of a caregiver or other family members for the well-being of children and adults is also prominent in the literature on war and disaster (Masten & Narayan, 2012); the observed effects of separation are so powerful that disaster planning and humanitarian relief place a major emphasis on minimizing separations and reuniting families.

Interventions designed to improve family function, parenting, or the quality of attachment relationships in families have been developed to promote resilience in children at risk for diverse reasons, with considerable success (see Sandler

et al., 2011). These include home-visitation programs (e.g., Olds, 2006; see Howard & Brooks-Gunn, 2009), interventions for families experiencing divorce (e.g., Sigal, Wolchik, Tein, & Sandler, 2012) or at risk for maltreating children (e.g., Lieberman & Van Horn, 2011; Toth & Gravener, 2012; see Cicchetti, 2013), and efforts to improve the quality of care in foster families (e.g., Dozier, Peloso, Lewis, Laurenceau, & Levin, 2008; Fisher et al., 2006).

Meaning Making. Another protective system implicated by individual and family resilience literatures is meaning making and the role of belief systems. Belief that life has meaning appears to play an important role in the resilience of older children and youth, as well as adults faced with severe adversity (Crawford, Wright, & Masten, 2006; Wright et al., 2013). Beliefs may be unique to a family or part of a cultural or religious tradition. Children learn systems of belief directly from parents and also through the activities their families encourage, such as religious or cultural education. Walsh (2006, 2011) argued that shared meaning and beliefs in families play a central role in family resilience, providing hope, a sense of coherence and purpose, and reassurance or forgiveness. Family therapists often focus on achieving or restoring a shared sense of meaning in the family. In child and family resilience theory, the family plays a central role in building, restoring, and transmitting belief systems and a protective sense that life has meaning.

Family Routines and Regulatory Roles. Families also have a number of regulatory functions in the lives of children and adult members that serve to foster positive development in very general ways (promotive) and also function to protect children and other family members in the context of adversity (protective). Walsh (2006) described many roles of rituals and routines in family resilience. Among other functions, these practices support belief systems and coherence in families and often connect the family to cultural beliefs and practices (discussed further below).

A family system with children, usually led by one or more parents, develops rules, roles, and routines that serve to maintain the cohesion and stability of the family as a balanced system and restore family function following disturbances (Fiese, 2006; Masten & Shaffer, 2006; Pratt, 1976). Fiese (2006) has conducted a series of studies on family routines and their function. The routines of meals and bedtime, for example, help children regulate their behavior and arousal, as well as their hunger and wake–sleep cycles. These routines also provide a sense of security in the familiar for all family members. Chaotic family organization, lacking in routines and structure, is often viewed as an indicator of family dysfunction (Evans & Wachs, 2009).

Many interventions designed to promote child and family resilience encourage family rituals and routines, such as eating meals together. Family routines are so important for child function that, in disaster planning, facilitating family routines is viewed as an essential strategy for promoting the recovery of families, as well as their children (Masten & Narayan, 2012).

Attachment relationships, family routines, and discipline in the family all serve to foster the development of self-regulation in children (see Gross, 2007). In a family system, adults can serve as external modulators of arousal, emotion, and behavior in young children until they learn to regulate themselves. Beeghly and Tronick (2011) argued that the mutual coregulation experienced in infant–parent interactions shapes the regulatory capacity that is important later for competence and resilience in children. These interactions include arousal games like peek-a-boo and routine soothing when a child is injured, frightened, or upset. Children gain a sense of mastery and security in the context of these interactions, learning through gradual experience how to handle disturbances and recover.

Cultural Traditions. Families also convey cultural practices and affiliations that promote competence and resilience (Harkness & Super, 2012; Masten, 2014b; Ungar, 2012; Ungar, Ghazinour, & Richter, 2013). Religions and other cultural systems frequently transmitted through families proscribe rituals and practices for troubled times and many kinds of spiritual, social, and material support (Crawford et al., 2006; Ungar, 2012; Wright et al., 2013). Religious and other cultural ties often bring extensive resources to families, including educational resources and social support. Cultural organizations can rally around families during disasters and other difficult times, providing housing, meals, medical care, financial support, guidance, comfort, and numerous other resources. Within the family,

faith and a larger sense of purpose function to sustain hope and comfort family members as they endure adverse experiences (Walsh, 2006).

Benefits of Integrated Approaches to Child and Family Resilience

Clearly, there are striking parallels in the concepts and processes of child and family resilience and growing interest in how they are related. What might be gained from a more systematic effort to integrate these distinct but interrelated bodies of work, particularly for efforts to promote resilience? We suggest three major benefits: (a) advances in theory and knowledge from assembling scattered pieces of knowledge into a more cohesive science, (b) translational advances for practice and policy that illuminate new or more effective strategies for tailoring and timing interventions, and (c) better training of scientists and practitioners for collaborative research and intervention.

Advancing the Science of Resilience. Resilience perspectives had transformative effects on the study of risk in children and families, bringing attention to the variation in adaptive function among individual and families faced with adversity, and motivating a search for understanding how some children and families managed so well whereas others floundered. Pioneering investigators in both fields realized that key evidence and processes crucial for understanding adaptation and recovery had been overlooked or omitted from theories about development, psychopathology, and intervention. Major waves of theoretical and empirical work followed as investigators began to build the science of child and family resilience. Yet synthesis across these domains of work is limited.

It is time to integrate these related bodies of science more systematically to deepen the understanding of resilience processes that span system levels. There are some areas of clear overlap with rich data; for example, research on family stress and parenting. But there also are likely to be "white spots" or neglected areas that need more research but are difficult to discern when the evidence is fragmented.

There appear to be ample ways that investigators focused on children or family systems could benefit from the advances in the other area of study, pooling methods, findings, and expertise, while also advancing research on intersystem processes that may be vitally important for promoting resilience. These include research on processes by which stress or competence spreads through families and generations and how to initiate positive cascades across levels or interrupt negative cascades before they progress through multiple systems. As noted earlier, intriguing new research is showing the possibilities for modeling change in adaptive function at multiple levels, from the genetic to the social-ecological, and delineating the processes by which changes in one level or system can alter function at another level.

Advancing the Practice of Promoting Resilience. Integrated models of resilience also offer potential advancements for practice. A relational developmental systems perspective underscores the interplay of resilience in individuals and other systems generally, and particularly the interdependence of family and child resilience. There is a rich and growing science on prevention and intervention focused on either individual change or family change, aiming to reduce or mitigate risk and stress, boost promotive influences, and/or mobilize protective systems (Hawley, 2013; Masten, 2011; Walsh, 2013). The evidence on multilevel change or efforts to generate cascades across systems is more limited, though compelling examples were noted earlier (e.g., Fisher et al., 2006; G. R. Patterson et al., 2010).

Pooling evidence and expertise could inform policy and practice efforts about what works best, which system or systems to target, at what levels, and when. Given the paucity of data, the most important initial benefit may be highlighting gaps in intervention evidence. In some situations, such as major disasters, it may be crucial to intervene simultaneously at multiple levels through coordinated actions to generate change or recovery. In other situations, there may be a window of opportunity that opens in one domain or level of interacting, interdependent systems, where strategic, targeted intervention in one system or process can trigger changes across multiple domains and levels of function. Living systems show periods of varying plasticity when they are more or less likely to change, some arising from developmental changes and some arising from perturbations. Assembling a more integrated understanding of opportunity windows and potential cascades across systems should illuminate basic resilience

processes while also serving to guide the design of interventions and policies to promote resilience.

Integrated system perspectives on resilience emphasize the dynamic nature of adaptation in children, adults, and families and the role of many other systems in their resilience. This does not mean that a given intervention should address all systems, which is impossible and impractical, but rather that the design of interventions would proceed with an awareness of the possibility that other systems may be important in regard to threats and disturbances imposing on the child or family, available resources and protective influences, and possible targets of change. The location of best leverage for change among interconnected systems can vary with development in all the relevant systems, as well as changing circumstances.

Most fundamentally, an integrated perspective would acknowledge that multisystem expertise is important for designing interventions that are well timed and targeted to protect a child, adult, or family threatened by adversity and promote continued adaptation and development. Some of the most promising interventions mentioned in this article brought together experts on different systems or levels of adaptation to promote change across systems or in their interactions. These include changing the behavior of parents to facilitate adaptive behavior in children at a behavioral or biological level or adapting promising family interventions to diverse cultural contexts. For instance, improving foster care to reprogram stress-reactivity systems in foster children required knowledge and support from experts on the foster care system, parenting, and the stress biology of children (Fisher et al., 2006).

It is noteworthy that resilience science and practice concerned with disasters, epidemics, and other mass-trauma events is moving in an integrated direction, as are the sciences concerned with global economic and ecological crises (Masten, 2014a). Integrated sciences and interventions are rising in response to situations that call for urgent and coordinated preparation or responses to avert calamity. Humanitarian agencies concerned with promoting positive development in high-risk regions of the world often aim to boost capacity for families struggling to make it in risky environments. Many of the interventions developed by the United Nations and the World Bank for improving global human and economic capital target the family, ranging from microloans to nutrition programs (Britto et al., 2013; Lundberg & Wuermli, 2012). Such programs assume that there will be cascading benefits from programs to family and child and, eventually, to the community or society as a whole. Contemporary efforts to promote resilience in high-risk children from inner-city neighborhoods and address achievement disparities may well have reached this level of urgency, calling for integrated science, policy, and interventions that align protective processes in families, schools, and communities (e.g., Tough, 2008).

Advancing Professional Training for Resilience Science and Practice. Finally, we suggest that integrating models, knowledge, and intervention approaches concerned with resilience in children and families could enhance professional training of future scientists and practitioners. It is not feasible for any individual scholar or practitioner to master all of the information or methods that could play key roles in understanding or promoting human resilience. Collaboration is becoming the norm for basic and translational research, with teams of experts coming together with shared respect for the knowledge and skills each person, sector, or discipline brings to the table. Specialized training approaches, journals, scientific conferences, and professional organizations that were effective in the initial waves of resilience science and practice may not be optimal for the integrative challenges ahead. Innovative and integrative conferences, networks, summer schools, and other multisystem training and mentoring opportunities focused on resilience may be crucial to advancing the capacity of future scientists and professionals to collaborate in the interest of better science, policy, and practice.

Conclusion

The literature on resilience in the adaptation and development of child and family systems is burgeoning, yet there remains considerable work to do on the multilevel processes that link child resilience with family resilience. New frontiers of research are opening up with advances in technologies and global concerns about resilience in individuals and families. Advances in statistics are making it possible to model complex system dynamics and trajectories over time. Research

on epigenetic processes is providing plausible explanations for the spread of stress in families, the intergenerational transmission of trauma, the protective role of good parenting through gene expression, the moderating effects of gene variations on interventions, and many other processes of interest to resilience scientists who study children and families (Cicchetti, 2013; Kim-Cohen & Turkewitz, 2012; Meaney, 2010). Research on acculturation and the resilience of immigrant and refugee youth and families also is expanding in response to global concerns (Masten, Liebkind, & Hernandez, 2012). Similarly, there is a rapidly expanding literature on the resilience of families in war, political conflict, and disaster (Masten & Narayan, 2012; Tol, Song, & Jordans, 2013). What these domains of research all have in common is an urgent concern about resilience in children and families, as well as other individual adults and groups, combined with a new emphasis on multilevel dynamics, as investigators attempt to understand processes that shape development of individuals and families in context (Becvar, 2013; Masten, 2011, 2013, 2014a; Panter-Brick & Leckman, 2013).

Investigators focused on resilience in children or families have much to offer a new wave of multiple-level, integrated systems research on resilience. Shared history, concepts, and goals provide considerable common ground for building a unified science that will inform evidence-based practice to promote resilience. At the same time, each tradition offers distinct evidence, tools, and conceptual strengths to contribute to a more comprehensive understanding of resilience. The time is ripe for a more concerted effort to integrate theory and knowledge from the child and family resilience traditions, as well as other fields of research on human resilience over the lifespan, in the interests of improving science, intervention, and professional training.

References

Ager, A., Stark, L., Akesson, B., & Boothby, N. (2010). Defining best practice in care and protection of children in crisis-affected settings: A Delphi study. *Child Development, 81*, 1270–1286. doi:10.1111/j.1467-8624.2010.01467.x

Akee, R. K. Q., Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2010). Parents' incomes and children's outcomes: A quasi-experiment using transfer payments from casino profits. *American Economic Journal: Applied Economics, 2*, 86–115.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.

Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child Development, 37*, 887–907.

Baumrind, D. (1996). The discipline controversy revisited. *Family Relations, 45*, 405–414.

Becvar, D. S. (Ed.). (2013). *Handbook of family resilience*. New York, NY: Springer.

Beeghly, M., & Tronick, E. (2011). Early resilience in the context of parent-infant relationships: A social developmental perspective. *Current Problems in Pediatric and Adolescent Health Care, 41*, 197–201.

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. doi:10.1111/j.1467-8624.2012.01861.x

Bogenschneider, K. (1996). An ecological risk/protective theory for building prevention programs, policies, and community policy to support youth. *Family Relations, 45*, 127–138.

Boss, P. (2001). *Family stress management: A contextual approach* (2nd ed.). Thousand Oaks, CA: Sage.

Bowlby, J. (1982). *Attachment and loss*. New York, NY: Basic Books. (Original work published 1969)

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.

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 1: Theoretical models of human development* (5th ed., pp. 993–1028). Hoboken, NJ: Wiley & Sons.

Cassidy, J., & Shaver, P. (Eds.). (2008). *Handbook of attachment: Theory, research, and clinical applications* (2nd ed.). New York, NY: Guilford.

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. doi/10.1111/j.1469-7610.2012.02608.x

Conger, R. D., & Elder, G. H. (1994). *Families in troubled times: Adapting to change in rural America*. New York, NY: Aldine de Gruyter.

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.

Crawford, E., Wright, M. O., & Masten, A. S. (2006). Resilience and spirituality in youth. In E. C. Roehlkepartain, P. E. King, L. Wagener, &

P. L. Benson (Eds.), *The handbook of spiritual development in childhood and adolescence* (pp. 355 – 370). Thousand Oaks, CA: Sage.

Cummings, E. M. (2006). Marital conflict and children's functioning. *Social Development, 3*, 16 – 36. doi:10.1111/j.1467-9507.1994.tb00021.x

Cummings, E. M., Davies, P. T., & Campbell, S. B. (2000). *Developmental psychopathology and family process*. New York, NY: Guilford.

DeHaan, L. G., Hawley, D. R., & Deal, J. E. (2013). Operationalizing family resilience as process: Proposed methodological strategies. In D. S. Becvar (Ed.), *Handbook of family resilience* (pp. 17 – 29). New York, NY: Springer.

Dishion, T. J., Shaw, D., Connell, A., Gardner, F., Weaver, C., & Wilson, M. (2008). The Family Check-Up with high-risk indigent families: Preventing problem behavior by increasing parents' positive behavior support in early childhood. *Child Development, 79*, 1395 – 1414. doi:10.1111/j.1467-8624.2008.01195.x

Dozier, M., Peloso, E., Lewis, E., Laurenceau, J.-P., & Levine, S. (2008). Effects of an attachment-based intervention on the cortisol production of infants and toddlers in foster care. *Developmental Psychopathology, 20*, 845 – 859. doi:10.1017/S0954579408000400

Dubowitz, H., & Poole, G. (2012). *Child neglect: An overview*. In *Encyclopedia on early childhood development*. Retrieved from http://www.child-encyclopedia.com/pages/PDF/Dubowitz-PoolANGxp1.pdf

Elder, G. H., Jr. (1999). *Children of the great depression: Social change in life experience*. Boulder, CO: Westview Press. (Original work published 1974)

Elder, G. H., Jr., & Conger, R. D. (2000). *Children of the land: Adversity and success in rural America*. Chicago, IL: University of Chicago Press.

Epel, E. S., Blackburn, E. H., Lin, J., Dhabhar, F. S., Adler, N. E., Morrow, J. D., & Cawthon, R. M. (2004). Accelerated telomere shortening in response to life stress. *Proceedings of the National Academy of Sciences of the United States of America, 101*, 17312 – 17315. doi:10.1073/pnas.0407162101

Evans, G. W., Li, D., & Whipple, S. S. (2013). Cumulative risk and child development. *Psychological Bulletin*, *139*, 1342 – 1396. doi:10.1037/a0031808.

Evans, G. W., & Wachs, T. D. (2009). *Chaos and its influence on children's development*. Washington, DC: American Psychological Association.

Fiese, B. H. (2006). *Family routines and rituals.* New Haven, CT: Yale University Press.

Fisher, P. A., Gunnar, M. R., Dozier, M., Bruce, J., & Pears, K. C. (2006). Effects of therapeutic interventions for foster children on behavioral problems, caregiver attachment, and stress regulatory neural systems. *Annals of the New York Academy of Sciences, 1094*, 215 – 225. doi:10.1196/annals.1376.023

Galinsky, E. (2010). *Mind in the making: The seven essential life skills every child needs.* New York, NY: HarperCollins.

Goldenberg, H., & Goldenberg, I. (2013). *Family therapy: An overview* (8th ed.). Belmont, CA: Brooks/Cole.

Gottesman, I. I. (1974). Developmental genetics and ontogenetic psychology: Overdue détente and propositions from a matchmaker. In A. Pick (Ed.), *The Minnesota symposia on child psychology vol. 8* (pp. 55 – 80). Minneapolis, MN: University of Minnesota Press.

Greene, S., M., Anderson, E. R., Forgatch, M. S., DeGarmo, D. S., & Hetherington, E. M. (2012). Risk and resilience after divorce. In F. Walsh (Ed.), *Normal family processes* (4th ed., pp. 102 – 127). New York, NY: Guilford.

Grimm, K., J., Ram, N., & Hamagami, F. (2011). Nonlinear growth curves in developmental research. *Child Development, 82*, 1357 – 1371. doi:10.1111/j.1467-8624.2011.01630.x

Gross, J. J. (2007). *Handbook of emotion regulation*. New York, NY: Guilford.

Gunnar, M., & Quevedo, K. (2007). The neurobiology of stress and development. *Annual Review of Psychology, 58*, 145 – 173. doi:10.1146/annurev.psych.58.110405.085605

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.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children.* Baltimore, MD: Paul H Brookes.

Hawley, D. R. (2013). The ramifications for clinical practice of a focus on family resilience. In D. S. Becvar (Ed.), *Handbook of family resilience* (pp. 31 – 49). New York, NY: Springer. doi:10.1007/978-1-4614-3917-2_3

Hawley, D. R., & DeHaan, L. (1996). Toward a definition of family resilience: Integrating life-span and family perspectives. *Family Process, 35*, 283 – 298. doi:10.1111/j.1545-5300.1996.00283.x

Howard, K. S., & Brooks-Gunn, J. (2009). The role of home-visiting programs in preventing child abuse and neglect. *The Future of Children, 19*, 119 – 146. doi:10.1353/foc.0.0032

Huizink, A. C., Bartels, M., Rose, R. J., Pulkkinen, L., Eriksson, C. J. P., & Kaprio, J. (2008). Chernobyl exposure as stressor during pregnancy and hormone levels in adolescent offspring. *Journal of Epidemiology and Community Health*, *62*(4), 1 – 6. doi:10.1136/jech.2007.060350

Kaplan, H. B. (1999). Toward an understanding of resilience. In M. D. Glanz & J. L. Johnson (Eds.),

Resilience and development (pp. 17 – 83). New York, NY: Kluwer Academic/Plenum.

Kim-Cohen, J., & Turkewitz, R. (2012). Resilience and measured gene-environment interactions. *Development and Psychopathology, 24*, 1297 – 1306. doi:10.1017/S0954579412000715

Koss, K. J., George, M. R. W., Cummings, E. M., Davies, P. T., El-Sheikh, M., & Cicchetti, D. (2014). Asymmetry in children's salivary cortisol and alpha-amylase in the context of martial conflict: Links to children's emotional security. *Developmental Psychobiology*, *56*, 836 – 849. doi:10.1002/dev.21156.

Kouros, C. D., Cummings, E. M., & Davies, P. T. (2010). Early trajectories of interparental conflict and externalizing problems as predictors of social competence in preadolescence. *Developmental Psychopathology, 22*, 527 – 537. doi:10.1017/S0954579410000258

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 PTS symptoms: Predicting chronic distress. *Child Youth Care Forum*, *42*, 351 – 369. doi:10.1007/s10566-013-9206-1.

Lerner, R. M. (2006). Developmental science, developmental systems, and contemporary theories. In R. M. Lerner (Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (6th ed., pp. 1 – 17). Hoboken, NJ: Wiley.

Lickliter, R. (2013). Biological development: Theoretical approaches, techniques, and key findings. In P. D. Zelazo (Ed.), *The Oxford handbook of developmental psychology. Vol. 1: Body and mind* (pp. 65 – 90). New York, NY: Oxford University Press.

Lieberman, A. F., & Van Horn, P. (2011). Child-parent psychotherapy: A developmental approach to mental health treatment in infancy and early childhood. In C. H. Zeanah, Jr. (Ed.), *Handbook of infant mental health* (3rd ed., pp. 439 – 449). New York, NY: Guilford.

Lundberg, M., & Wuermli, A. (Eds.). (2012). *Children and youth in crisis: Protecting and promoting human development in times of economic shocks*. Washington, DC: 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. doi:10.1016/j.biopsych.2011.12.020

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. Retrieved from http://www.jstor.org/stable/1132374

Masten, A. S. (Ed.). (2007). *Multilevel dynamics in developmental psychopathology: The Minnesota symposia on child psychology* (Vol. 34). Mahwah, NJ: Erlbaum.

Masten, A. S. (2011). Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Development and Psychopathology, 23*, 141 – 154. doi:10.1017/S0954579411000198

Masten, A. S. (2013). Risk and resilience in development. In P. D. Zelazo (Ed.), *The 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. doi:10.1007/s10567-013-0150-2

Masten, A. S. (2014b). *Ordinary magic: Resilience in development*. New York, NY: Guilford.

Masten, A. S., & Cicchetti, D. (2010). Editorial: Developmental cascades. *Development and Psychopathology, 22*, 491 – 495. doi:10.1017/S0954579410000222

Masten, A. S., & Coatsworth, J. D. (1998). The development of competence in favorable and unfavorable environments: Lessons from research on successful children. *American Psychologist, 53*, 205 – 220. doi:10.1037/0003-066X.53.2.205

Masten, A. S., Liebkind, K., & Hernandez, D. J. (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*, 227 – 257. doi:10.1146/annurev-psych-120710-100356

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., & Shaffer, A. (2006). How families matter in child development: Reflections from research on risk and resilience. In A. Clarke-Stewart & J. Dunn (Eds.), *Families count: Effects on child and adolescent development* (pp. 5 – 25). New York, NY: Cambridge University Press.

McCormick, C. M., Kuo, S. I.-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.

McCubbin, H., & Patterson, J. M. (1982). Family adaptation to crises. In H. McCubbin, A. Cauble, & J. Patterson (Eds.), *Family stress, coping, and social support* (pp. 26 – 47). Springfield, IL: C. C. Thomas.

McCubbin, H., & Patterson, J. M. (1983). The family stress process: The double ABCX model of family

adjustment and adaptation. *Marriage and Family Review, 6*, 7 – 37.

McEwen, B. S. (1998). Stress, adaptation, and disease: Allostasis and allostatic load. *Annals of the New York Academy of Sciences, 840*, 33 – 44. doi:10.1111/j.1749-6632.1998.tb09546.x

McEwen, B. S., & Gianaros, P. J. (2011). Stress- and allostasis-induced brain plasticity. *Annual Review of Medicine*, *62*, 431 – 445. doi:10.1146/annurev-med-052209-100430

Meaney, M. J. (2010). Epigenetics and the biological definition of gene x environment interactions. *Child Development, 81,* 41 – 79. doi:10.1111/j.1467-8624.2009.01381.x

Nichols, W. C. (2013). Roads to understanding family resilience: 1920s to the twenty-first century. In D. S. Becvar (Ed.), *Handbook of family resilience* (pp. 1 – 16). New York, NY: Springer.

Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, *41*, 127 – 150. doi:10.1007/s10464-007-9156-6

Olds, D. L. (2006). The nurse-family partnership: An evidence-based preventive intervention. *Infant Mental Health Journal*, *27*, 5 – 25. doi:10.1002/imhj.20077

Olson, D. H. (2000). T model of marital and family systems. *Journal of Family Therapy, 22*, 144 – 167.

Olson, D. H., & Gorall, D. M. (2003). Circumplex model of marital and family systems. In F. Walsh (Ed.), *Normal family processes* (3rd ed., pp. 514 – 547). New York, NY: Guilford.

Overton, W. F. (2013). A new paradigm for developmental science: Relationism and relational-developmental systems. *Applied Developmental Science, 17*, 94 – 107. doi:10.1080/10888691.2013.778717

Panter-Brick, C., & Leckman, J. F. (2013). Editorial commentary: Resilience in child development – interconnected pathways to wellbeing. *Journal of Child Psychology and Psychiatry, 54*, 333 – 336. doi:10.1111/jcpp.12057

Patterson, J. M. (2002). Integrating family resilience and family stress theory. *Journal of Marriage and Family, 64*, 349 – 360. doi:10.1111/j.1741-3737.2002.00349.x

Patterson, G. R., Forgatch, M. S., & DeGarmo, D. S. (2010). Cascading effects following intervention. *Developmental Psychopathology, 22*, 941 – 970. doi:10.1017/S0954579410000568

Pratt, L. V. (1976). *Family structure and effective health behavior: The energized family.* Boston, MA: Houghton Mifflin.

Repetti, R. L., Robles, T. F., & Reynolds, B. (2011). Allostatic processes in the family. *Development and Psychopathology, 23*, 921 – 938. doi:10.1017/S095457941100040X

Sameroff, A. J. (2010). A unified theory of development: A dialectic integration of nature and nurture. *Child Development, 81*, 6 – 22.

Sandler, I., Schoenfelder, E., Wolchik, S., & MacKinnon, D. (2011). Long-term impact of prevention programs to promote effective parenting: Lasting effects but uncertain processes. *Annual Review of Psychology, 62*, 299 – 329. doi:10.1146/annurev.psych.121208.131619

Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., … & Wood, D. L. (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, *129*, e232 – e246. doi:10.1542/peds.2011-2663

Sigal, A. B., Wolchik, S. A., Tein, J.-Y., & Sandler, I. N. (2012). Enhancing youth outcomes following parental divorce: A longitudinal study of the effects of the New Beginnings Program on educational and occupational goals. *Journal of Clinical Child and Adolescent Psychology, 41*, 150 – 165. doi:10.1080/15374416.2012.651992

Small, S., & Memmo, M. (2004). Contemporary models of youth development and problem prevention: Toward an integration of terms, concepts, and models. *Family Relations, 53*, 3 – 11. doi:10.1111/j.1741-3729.2004.00002.x

Sroufe, L. A. (1997). Psychopathology as an outcome of development. *Development and Psychopathology, 9,* 251 – 268. doi:10.1017/S0954579497002046

Sroufe, L. A., Egeland, B., Carlson, E. A., & Collins, A. W. (2005). *The development of the person: The Minnesota study of risk and adaptation from birth to adulthood*. New York, NY: Guilford.

Steinberg, L. (2001). We know some things: Parent – adolescent relationships in retrospect and prospect. *Journal of Research on Adolescence*, *11*, 1 – 19. doi:10.1111/1532-7795.00001

Thompson, R. A. (2014). Socialization of emotion and emotion regulation in the family. In J. J. Gross (Ed.), *Handbook of emotion regulation* (2nd ed., pp. 173 – 186). New York, NY: Guilford.

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.

Tolan, P., Gorman-Smith, D., & Henry, D. (2006). Family violence. *Annual Review of Psychology, 57,* 557 – 583. doi:10.1146/annurev.psych.57.102904.190110

Toth, S. L., & Gravener, J. (2012). Bridging research and practice: Relational interventions for maltreated children. *Child and Adolescent Mental Health*, *17*, 131 – 138. doi:10.1111/j.1475-3588.2011.00638.x

Tough, P. (2008). *Whatever it takes: Geoffrey Canada's quest to change Harlem and America.* Boston, MA: First Mariner Books.

Tronick, E., & Beeghly, M. (2011). Infants' meaning-making and the development of mental health problems. *American Psychologist, 66*, 107–119. doi:10.1037/a0021631

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. doi:10.1111/jcpp.12025

von Bertalanffy, L. (1968). *General system theory: Foundation, development, application.* New York, NY: George Braziller.

Walsh, F. (2006). *Strengthening family resilience* (2nd ed.). New York, NY: Guilford.

Walsh, F. (2011). Family resilience: A collaborative approach in response to stressful life challenges. In S. Southwick, D. Charney, B. Litz, & M. Freedman (Eds.), *Resilience and mental health: Challenges across the life span.* (pp. 149–161). New York, NY: Cambridge University Press.

Walsh, F. (Ed.). (2012). *Normal family processes: Growing diversity and complexity* (4th ed.)*.* New York, NY: Guilford.

Walsh, F. (2013). Community-based practice applications of a family resilience framework. In D. S. Becvar (Ed.), *Handbook of family resilience* (pp. 65–82). New York, NY: Springer. doi:10.1007/978-1-4614-3917-2_5

Wright, M. O'D., 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* (pp. 15–37). New York, NY: Springer. doi:10.1007/978-1-4614-3661-4_2

Yehuda, R., Flory, J. D., Pratchett, L. C., Buxbaum, J., Ising, M., & Holsboer, F. (2010). Putative biological mechanisms for the association between early life adversity and the subsequent development of PTSD. *Psychopharmacology, 212*, 405–417. doi:10.1007/s00213-010-1969-6

Zeanah, C. H., Smyke, A. T., & Settles, L. D. (2006). Orphanages as a developmental context for early childhood. In K. McCartney, & D. Phillips (Eds.), *Blackwell handbook of early childhood development* (pp. 424–454). Malden, MA: Blackwell.

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.