CHAPTER 44

Resilience Theory and the Practice of Positive Psychology From Individuals to Societies

TUPPETT M. YATES, FANITA TYRELL, and ANN S. MASTEN

RESILIENCE SCIENCE EMERGED more than half a century ago when trailblazers in psychology, psychiatry, and pediatrics searching for clues to the origins and treatment of problems in child development observed the striking variation in outcomes among children at risk due to disadvantage and adversity. From the outset, resilience research pioneers, such as Norman Garmezy, Lois Murphy, Michael Rutter, and Emmy Werner, sought to inform practice by understanding the processes that explained how some individuals fared well in the face of adversity while others floundered (Masten, 2013). Their compelling ideas and research propagated the field of resilience science, which has transformed frameworks for practice in multiple disciplines by shifting the emphasis away from deficit-focused orientations toward models centered on positive aims, promotive and protective factors, and adaptive capacities (Masten, 2011).

With its emphasis on competence despite exposure to adversity, the concept of resilience has long been attractive to applied practitioners seeking to promote strength in vulnerable individuals, groups, and societies. A wealth of research has documented processes by which individuals achieve positive developmental outcomes despite exposure to known threats to adaptation (Cicchetti, 2010; Goldstein & Brooks, 2013; Luthar, 2006; Masten, 2013, 2014; Panter-Brick & Leckman, 2013; Rutter, 2012). More recently, researchers have examined resilience processes at broader levels of development, including families (Becvar, 2013; Walsh, 2006), schools (Doll, 2013; Gettinger & Stoiber, 2009), communities (Davis, Cook, & Cohen, 2005; Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008; Zautra, Hall, & Murray, 2008), and societies (Allenby & Fink, 2005; Birkmann, 2006).

Drawing on empirical studies and theoretical models of resilience, researchers have articulated frameworks for translating resilience research into applied efforts to foster positive development (Masten & Powell, 2003; Wyman, Sandler, Wolchik, & Nelson, 2000). Amidst vociferous calls for research-informed practice, however, there emerged a growing appreciation for the need and opportunity for reciprocal translation to practice-informed research on resilience (Masten, 2011; Yates & Masten, 2004). In this chapter, we take stock of recent advances in resilience-based practice with a particular focus on expanding our scope beyond the individual level, and lament the still untapped wealth of practical information that awaits reciprocal translation to resilience research.

We begin with a review of key concepts and models of resilience as translated to the design and implementation of applied efforts to promote positive development. We emphasize the need for resilience-guided practice that accommodates the dynamic nature of human development at multiple levels of analysis within and across individuals, families, institutions, communities, and nations. We also encourage greater recognition of resilience-based practice as an underutilized resource for testing core tenets of resilience theory and broadening bidirectional paths from science-based practice to practice-based science.

RESILIENCE AND RELATED CONCEPTS

Resilience is most appropriately conceptualized as a developmental process or a dynamic capacity rather than as a static outcome or trait. Applicable to a broad range of systems ranging from children and families to institutions and societies, resilience encompasses *the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development* (Masten, 2014). In the context of applied science, resilience also carries a connotation of positive or typical developmental adaptations despite exposure to clear threat or adversity. Thus, identifying processes of resilience requires clear operational definitions of both adversity and positive adaptation or competence. Moreover, contemporary models of resilience explicitly recognize that adversity and competence, as well as the processes that underlie them, may vary across levels of analysis within and across cultures.

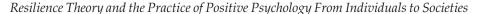### CHARACTERIZING RESILIENCE: ADVERSITY AND COMPETENCE

Adversity refers to negative contexts and experiences that have the potential to disrupt or challenge adaptive functioning and development (Obradović, Shaffer, & Masten, 2012). Adversities may be chronic (e.g., poverty, racism) or acute (e.g., sudden loss of a loved one, victim of an armed robbery). They may affect systems within the individual (e.g., a virus that attacks the immune system) or multiple levels and settings simultaneously (e.g., a natural disaster that affects individual systems of stress, beliefs, and behaviors, as well as broader systems of family, school, health care, agriculture, etc.).

Adverse effects on development may result from experiences that block, exhaust, or compromise/distort the function of adaptive systems that usually foster and protect development. For example, political violence may influence human development in multiple ways: It may traumatize the whole community, harm parents or parenting, destroy health-care systems and homes, disrupt educational and occupational activities, and in many additional ways generate stress, erode resources, and stymie protective processes in development. Core adaptive processes, such as the natural predilection to seek protection and comfort from more powerful others in contexts of danger, may be co-opted in these contexts. For example, young people seeking

safety, companionship, or opportunities for agency may be recruited into dangerous political activities (Barber, 2009). At multiple levels of function, and through varied mechanisms of process, adversity threatens the viability, stability, or development of adaptive systems and undermines positive adaptation. Nonetheless, capacities for competence may persist, which, when expressed in contexts of adversity, characterize resilience.

Competence refers to the capacity to adapt successfully and meet contextual, developmental, and cultural expectations for a particular individual, group, or social structure (Havighurst, 1972; Masten, Burt, & Coatsworth, 2006). Competence is enabled by the integrated organization and function of an adaptive system in context. Until recently, competence was typically indicated by observable evidence of effective performance in developmental tasks that were defined by Western European ideals. However, a growing global and multicultural body of work has begun to highlight cultural and contextual differences in the definition of what it means to be "doing okay" in a particular period of development, historical context, and cultural setting (Masten, 2014; Ungar, Ghazinour, & Richter, 2013).

In addition, research on manifest indicators of positive adaptation at individual levels of analysis has been supplemented by growing consideration of multilevel definitions of competence. For example, with respect to individual adaptation, contemporary notions of competence include indicators of positive *internal* adaptation, such as health, well-being, happiness, or a cohesive sense of self, along with external indices of competence, such as work or school achievement, quality of relationships, and law-abiding conduct (Brody et al., 2013; Luthar, 2006; Yates & Grey, 2012). Although specific phenotypes indicative of resilience may vary by level of analysis, historical time, or cultural context, all entail the situated expression of competence despite prior or ongoing adversity.

RISKS, RESOURCES, AND PROCESSES UNDERLYING RESILIENCE

Whereas *risk factors* are broadly associated with negative or undesirable outcomes in a given population, *resource factors* (also known as assets or promotive factors) generally support positive or desirable development across individuals. Risks and resources are population-level constructs that are associated with negative or positive effects on development. However, at the level of individual members of a population (e.g., a person, school, or neighborhood), the significance of any particular factor for development may be influenced by the broader context of risks and resources that surrounds the system, as well as by specific vulnerabilities of the system. For example, a parent's serious illness will increase family strain, but this effect will be magnified in contexts where the parent is the sole provider for the family, and/or if there is a specific vulnerability, such as limited access to health-care. Thus, the adaptive significance of a particular risk or resource for a given individual in a population may be influenced by other factors.

Risk factors tend to aggregate and pile up in the lives of individuals, in families, and in communities (Masten & Wright, 1998; Obradović et al., 2012; Seifer & Sameroff, 1987). Unemployment of a parent, for example, may precipitate a decline in the family's financial security that disrupts housing stability, increases stress, renders family members more vulnerable to illness, and strains social support networks (Masten & Monn, in press). Likewise, at a more macro level, political violence may threaten the integrity of religious and educational institutions, disrupt patterns of food distribution and access, and threaten environmental health and safety. In a remarkable longitudinal study of cascading effects from the macro to the individual level, Boxer

and colleagues (2013) found that interethnic political violence in the social ecology spread over time into proximal systems that youth interact with at the community, school, and family levels, resulting in higher levels of individual youth aggression.

Risks and resources, by definition, contribute directly to adaptation (i.e., main effects). However, their effects can be influenced by other factors or by interactions among risks and resources in combination (i.e., moderated effects). *Vulnerability* factors refer to moderators that increase the negative effects of risks, as in the aforementioned case where lack of health-care is a vulnerability that exacerbates the negative effect of illness or injury. *Protective* factors mitigate risk effects, taking on greater salience in adverse contexts as when positive teacher–student relationships disproportionately support academic and behavioral competence among disadvantaged students (Pianta, 1999).

Over the past decade, researchers have identified a third kind of moderating effect, which has been termed *differential susceptibility* (Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007; Ellis & Boyce, 2011) or *sensitivity to context* (Boyce & Ellis, 2005). In these instances, the same characteristic may serve protective and vulnerability functions depending on the context. For example, some individuals appear to be more reactive to experience, which can be good in positive situations and negative in risky contexts (Obradović, Bush, Stamperdahl, Adler, & Boyce, 2010). Importantly, individual differences of this kind may confer vulnerability in contexts of adversity, but also heightened responsiveness to positive experiences, including interventions.

RESILIENCE IN DYNAMIC SYSTEMS

Contemporary resilience science extends across the life span; considers multiple levels of analysis, from molecular to cultural; and examines multiple systems, from families and schools to neighborhoods and nations (e.g., Cicchetti, 2013; Kim-Cohen & Turkewitz, 2012; Masten, 2013, 2014; Panter-Brick & Leckman, 2013; Reich, Zautra, & Hall, 2010; Russo, Murrough, Han, Charney, & Nestler, 2012). These studies converge on a model of resilience that is grounded in relational developmental systems theory (Lerner & Overton, 2008; Overton, 2013), which holds that the capacity for competence at any given time reflects the possibilities that arise from many interacting systems, both within the individual and in the contexts that surround the individual at the time. These interactions between an individual system (e.g., a person, a school, or a country) and the surrounding context of risks and resources contribute to nuanced processes of vulnerability, protection, and differential susceptibility that ultimately affect the capacity to respond to challenge successfully (i.e., processes of resilience).

Resilience emerges from the interactions of a dynamic system as it transacts with a dynamic context (Lerner, 2006). Within the child who behaves and feels reasonably well despite exposure to adversity, there are functional neural and stress response systems that enable her or him to mobilize attention, behavior, and emotion in the service of successful adaptation. Outside this same child, there may be engaged and supportive adults or caregivers, intact educational settings, a community with basic functionality, and a culture that imbues her or him with a sense of predictability. Thus, any model of resilience must consider the interplay among multiple levels of influence and analysis, and efforts to promote resilience in development must do the same (Cicchetti, 2011).

RESILIENCE AND PRACTICE

The study of resilience inspired a transformation from deficit-based models of intervention to those that acknowledge and promote resources and protective processes

in development. Resilience research has informed prevention science by clarifying multilevel goals, identifying mechanisms expected to bring about positive change in varied systems, informing the measurement of key variables, and providing a conceptual framework to guide the form and application of dynamic and contextually sensitive intervention efforts.

RESILIENCE-GUIDED GOALS

In contrast to traditional medical models that seek to eradicate disease or distress, resilience models aim to promote health and well-being. The study of resilience has inspired interventions with broad appeal by emphasizing attainable goals of competence, rather than optimal performance, and focusing on positive goals, rather than avoiding problems and pitfalls (Masten, 2011). Moreover, by supporting contextualized models of competence in which definitions of "doing okay" are situated within a cultural, developmental, and historical context, resilience-guided practice has garnered the support of consumers and community stakeholders, particularly those from underrepresented and marginalized groups that bore the brunt of the deficit emphasis in classical models of intervention (Bryan, 2005).

The overarching goal of resilience-informed practice is to foster positive adaptation and development in contexts of high risk or adversity. Thus, efforts to define competence are critical to the design and implementation of applied practices that will support it. As the successful negotiation of developmentally, culturally, and contextually relevant issues, competence demands applied goals that change in response to the developing system. For example, interventions to support competence in infancy necessarily focus on different capacities (e.g., behavioral and state regulation) and contexts (e.g., caregiver–child relationships) than those targeting competence during the transition to adulthood (e.g., opportunities for apprenticeship or mentoring, romantic relationships). Some of these capacities will generalize across cultures, while others will vary (Ungar et al., 2013). For example, issues confronting a country wrestling with the challenges of potable water delivery and universal access to primary education may differ from those confronting a country struggling to promote universal access to health care and higher education. Resilience-guided goals for practice share an emphasis on competence promotion and an appreciation for the variation in specific indicators of successful adaptation across systems and settings.

MECHANISMS OF RESILIENCE PROMOTION

Fifty years of resilience research converge on a set of core resources and protective processes that feature prominently in individual, group, and structural competence in contexts of risk or adversity (i.e., resilience) (Luthar, 2006; Masten, 2013; Wright, Masten, & Narayan, 2013). These factors emerge with a high degree of consistency across varied study designs, samples, and settings, though the majority of resilience research derives from (and correspondingly focuses on) human (particularly child) development in Western nations. For children, these factors center on relationships with caring adults, individual difference variables that confer regulatory and relational flexibility, and community-level structures that support opportunities for safety and growth. Comparable lists of promotive and protective factors can be developed for families, schools, communities, or nations to guide practical efforts to improve the odds of successful adaptation within those settings and, by extension, the systems that interact with them. For example, at the level of community, factors associated with the built environment (e.g., public transport, street design and maintenance),

social capital (e.g., community networks and social norms), and services and institutions (e.g., local government, schools) support the capacity for community resilience to disadvantage (Davis et al., 2005; Norris et al., 2008).

Joining the wealth of literature on the many ways development can go awry in adverse contexts, resilience researchers have identified several approaches to facilitate competence, particularly in contexts of adversity (Masten, 2011; Yates & Masten, 2004). As a first line of defense, *risk-focused techniques* aim to improve developmental outcomes by attenuating or eliminating initial adversity exposure; these strategies constitute a primary prevention approach to practice that is well-suited to contexts where risks are identifiable, modifiable, and avoidable (e.g., providing nutrition and medication to prevent intestinal parasites; Grigorenko et al., 2007). *Resource-focused techniques* complement primary prevention efforts by improving access to assets that promote competence and counteract or counterbalance risks, especially those that are intractable or chronic (e.g., perinatal home-based visitation to provide parenting information and support to impoverished families; Olds, 2002). Finally, *process-focused techniques* seek to protect, activate, or restore basic adaptive systems that support development. These systems and corresponding support processes have been specified with greatest clarity in human resilience. Examples include attachment-focused strategies, such as providing safe, supportive, and consistent adult caregivers and mentors (Berlin, Ziv, Amaya-Jackson, & Greenberg, 2005); bolstering mastery motivation, often by providing opportunities for successful engagement with challenge to support natural proclivities toward mastery and personal effectance (Kahana, Kelley-Moore, & Kahana, 2012); and improving self-regulation capabilities to build the capacity to modulate attention, emotion, behavior, and arousal in accord with contextual demands (Blair & Diamond, 2010). It is important to note, however, that core adaptive systems can be targeted in other systems and settings, such as neighborhoods where social cohesion and trust constitute central processes underlying relative vulnerability or resilience (Zautra et al., 2008).

Most effective interventions operate through multiple mechanisms and at multiple levels of action. Cumulative risk is best met by cumulative protection efforts that prevent risk, promote resources, and buffer adaptive functioning (Wyman et al., 2000; Yoshikawa, 1994). For example, the Seattle Social Development Program (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005) is built on a model of prevention with a focus on promoting positive change in children's bonding to school and family. The program is implemented across the elementary school years, but includes both classroom and family components. Teachers are trained in mastery teaching strategies, learn how to improve classroom management, and teach social skills in the classroom. Parents are trained in effective parenting techniques, such as monitoring and consistent discipline. Long-term evidence points to enduring effects of this program on developmental task achievements, as well as reductions in antisocial behavior and other negative outcomes. Such efforts capitalize on developmental cascades of influence (Masten & Cicchetti, 2010), wherein positive change in one system (e.g., family) may influence adjustment at other levels (e.g., child, school).
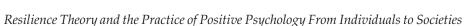
SETTINGS FOR APPLIED RESILIENCE

Prior research has elucidated specific principles and practices to support positive development among adversity-exposed individuals. However, these same processes can operate in a range of settings beyond individuals, often with cascading implications for child and youth development. Although an exhaustive review of

resilience-informed approaches to practice in varied settings is beyond the scope of this chapter, we provide a few examples of resilience-informed practice to illustrate the broad applicability of resilience theory and research, as well as some challenges when taking these efforts to scale.

Applied efforts to support resilience capacities through individual-level interventions have focused on varied processes, including problem solving skills and social-emotional learning (Aber, Brown, Jones, Berg, & Torrente, 2011); developing and maintaining healthy relationships with parents, peers, and partners (Hawkins et al., 2005); and strengthening executive and regulatory functions (Blair & Diamond, 2010). Although these interventions may be implemented in familial or educational settings, they share an emphasis on individual capacities as the target of change. Importantly, these core adaptive systems are critical for healthy development in all contexts, but may take on increased salience as protective factors in risky environments.

As a central context for the development of both children and adults, the family setting, and patterns of interaction therein, is a common focus for resilience-informed interventions. High-quality relationships between parents and children are implicated in virtually every study of resilience in children (Luthar, 2006; Masten, 2013), and positive romantic relationships are implicated in adult resilience (Conger, Schofield, Neppl, & Merrick, 2013; Ronka, Oravala, & Pulkinen, 2002). A large body of evidence indicates that parenting and parent–child relational dynamics are modifiable mechanisms through which interventions can contribute to improved child outcomes (Belsky & de Haan, 2011; Patterson, Forgatch, & DeGarmo, 2010; Sandler, Schoenfelder, Wolchik, & MacKinnon, 2011). Promising applications of resilience have also been employed to support positive relationship functioning among vulnerable groups, such as couples facing military deployment (Gewirtz, Erbes, Polusny, Forgatch, & DeGarmo, 2011) or serious illness (Badr & Taylor, 2008).

Consistent with a relational view of developmental systems (Lerner & Overton, 2008; Overton, 2013), lives are nested within multiple, often overlapping institutions. As noted earlier, many interventions that target individuals are administered via institutions where people spend a lot of time (e.g., school, work). However, institutions themselves may serve as sites for resilience-enhancing intervention efforts, and these efforts can manifest at multiple levels. For example, within a given employment sector, applied efforts to support resilience could focus on individual workers, managers, central administrators, or training and safety protocols. In schools, interventions may target students, classrooms, teachers, administrators, curricula, individual schools, or school districts. Research consistently points to the critical importance of providing safe and supportive contexts entailing multiple levels of support for successful adaptation, relative to the more modest impact of efforts to change individual capacities directly (Ungar et al., 2013).

Resilience-informed practice may target neighborhoods and communities as well. Norris and colleagues (2008) have developed models to promote community resilience in the context of disaster, and similar approaches have been developed to address public health issues (Paton, Parkes, Daly, & Smith, 2008). Importantly, community-level interventions may have positive effects that are mediated by individual-level factors. For example, social capital, residential stability, and neighborly connections, which are all features of neighborhood resilience (Zautra et al., 2008), may foster hope or security in individuals and, by extension, positive coping and adjustment.

At the grandest scale, resilience may guide practice and policy within or across nations. In these instances, interventions often incorporate multiple settings for

applied resilience. Finland's successful educational recovery in the wake of World War II constitutes a striking example of national resilience. For decades following the war, Finland's educational system was problem focused and problem riddled. Once known for its remarkably low rate of school attendance, Finland now boasts one of the world's most educated populations with 99% of children completing compulsory education and 94% completing upper secondary school (Välijärvi & Sahlberg, 2008). Despite shorter school days that are relatively few in number, Finland's youth consistently outperform those in the United States, the European Union, and other nations with comparable ethnic and economic demographics (e.g., Norway; Organisation for Economic Co-operation and Development [OECD], 2011).

An outgrowth of nearly 40 years of carefully constructed educational reform involving students, teachers, administrators, and government officials, Finland's educational resilience is a source of national pride and global influence (OECD, 2011; Sahlberg, 2007). Beginning in 1972, educational reform policies established a standard core compulsory education, but this national standard was implemented at the local level using teacher-selected practices that were best suited to the needs and resources of a particular school or community. Comparative evaluations across schools (and even across students and teachers within schools) were supplanted by school- and teacher-specific evaluation practices for the sole purpose of instructional development and refinement for individual teachers.

In addition to curricular reform for children, Finland enacted a systematic overhaul of its teacher education system and valuation. Teaching, which once ranked among the least desirable professions in Finland, rose to prominence as teachers were required to obtain at least a master's degree before leading their own classroom and teacher curricula were revised to incorporate cutting edge educational theory and research (Sahlberg, 2010).

With heightened prestige and protected autonomy in the classroom, teaching now ranks among the most valued occupations in Finland and their professional satisfaction and sophistication cascades to influence student learning outcomes. Uniform expectations for success regardless of family background, class, or circumstance encourages Finnish students to take responsibility for their own education (OECD, 2011). Finland's explicit commitment to educational equity in terms of opportunity, obligation, and potential for success guided the design and implementation of education reform efforts at multiple levels, which, in turn, have combined to transform the nation.

Integration of multiple techniques and levels will yield the most effective interventions to support resilience. At the same time, however, these multifaceted and large-scale efforts are among the most challenging models of applied resilience. As illustrated in the Finnish case, true transformation in human development and institutional function requires buy in from all stakeholders, ranging from individual community members to broader systems of policy and governance (Aber et al., 2011).

A DYNAMIC MODEL OF RESILIENCE IN PRACTICE

Just as resilience emerges in the context of dynamic exchanges between an adaptive system and the broader context, so, too, must practice efforts to support competence in contexts of adversity (i.e., resilience) accommodate and respond to the dynamic nature of development. The influence of a given factor as either protective- or vulnerability-enhancing is moderated by the context in which it is embedded, and the developmental stage of the system at the time when it is introduced. Thus, certain goals (e.g., promoting positive peer relationships) may be best suited to particular

settings (e.g., schools) or age periods (e.g., middle childhood and adolescence, when peer relationships are most salient). Similarly, the structure of obesity prevention practices in a neighborhood with minimal green space and high levels of community violence necessarily differs from applied efforts in comparatively benign community settings with ample parks and public recreation areas, though all seek to promote positive nutrition and health.

Whether in children, groups, or social structures, current adaptive organizations within a system build on (and often embody or encompass) prior organizations of that system (Sroufe, Egeland, & Kreutzer, 1990). Thus, early interventions tend to have the greatest developmental and economic impact (Heckman, 2006). Yet adaptive processes wax and wane in influence across development, and, although there may be considerable adaptive continuity, there remains a capacity for change throughout the life course, for better and for worse. This capacity for change is magnified during periods of transition as when puberty changes an individual body or elections change a system of governance. Individuals, families, and communities may be more open to intervention-induced transformational change when destabilized by transition or crisis (e.g., disaster). In these moments, interventions may provide powerful inducements to change, and precipitate turning-point experiences (Ronka et al., 2002; Rutter, 1996). Similarly, it is during these periods of relative instability that ongoing supports are needed to ensure the maintenance of positive trajectories.

A developmental view of resilience encourages early yet sustained intervention efforts in recognition that ongoing supports and protections are needed to maintain fledgling trajectories of competence. Moreover, targeting periods of rapid transition or heightened sensitivity may guide seemingly counterintuitive decisions about the most appropriate timing of intervention. For example, efforts to promote positive adjustment during the school years may begin with intervention applications prior to birth given evidence that the sensitivity of adaptive systems may be organized and tuned prenatally (Boyce, 2007).

Just as resilience is developmentally contextualized, it is also culturally situated. Thus, it is important to clarify the ways in which adversity and competence vary across different ecological, and cultural contexts (Ungar et al., 2013). Applied efforts to promote resilience that incorporate culturally congruent values, norms, and resources will be more readily accepted and utilized by individuals, groups, and communities (Black & Krishnakumar, 1998; Parsai, Castro, Marsiglia, Harthun, & Valdez, 2011).

A TRANSACTIONAL MODEL OF RESILIENCE IN PRACTICE

With a growing body of research illuminating the processes by which systems negotiate salient developmental challenges despite adversity, a resilience framework can guide practice, even as research continues to build a better knowledge base about processes of protection, vulnerability, and differential susceptibility. In turn, efficacy studies of interventions guided by resilience science offer powerful tests of theories about resilience processes. These include investigations of prevention and intervention efforts that deliberately aim to alter the course of development in favorable directions and natural experiments where a naturally occurring change in circumstance (e.g., adoption) can reveal mechanisms of developmental deviation and recovery (Masten, 2011; Rutter, 2007).

Scientific progress emerges from the bidirectional influences of theory and practice in a recursive process of theory formulation, testing, data collection, and theory revision (Sameroff, 1983). Although prevention scientists are increasingly incorporating resilience theory into their missions and models of intervention,

there remains a wealth of untapped information awaiting translation from practice to research (Howe, Reiss, & Yuh, 2002). Carefully conducted evaluation research with randomized group assignment and appropriate comparison groups allows investigators to experiment with altering the course of human development in the context of identifiable and quantifiable adversity, and to evaluate causal hypotheses about resilience and development (Masten, 2011). Studies that demonstrate the mediating function of conceptually predicted variables (e.g., improved parental discipline practices) in the relation between intervention (e.g., parent education curricula) and outcome (e.g., reduced antisocial behavior) yield important data for theory testing. However, interventions that were highly successful in elegant university experiments can be difficult to implement successfully in more typical real-world ecological settings.

The divide between the empirical efficacy of resilience interventions in clinical research designs and the real-world effectiveness of resilience interventions in everyday practice constitutes a major barrier to bidirectional exchanges between resilience research and practice. In an effort to bridge this translational divide, investigators are teaming up with field-based experts and consumers to design and test interventions that are informed by frontline knowledge and tailored to real-world contexts to maximize the potential for effectiveness in everyday practice from the outset. Casey and colleagues (2014) describe an iterative process of designing and testing the components of a new intervention to promote executive function skills and academic resilience in homeless and highly mobile preschool children. Their design team included faculty experts in executive function, resilience, and teacher training; teachers and staff from community preschools serving high-risk children; and master teachers from a university-based early childhood training program. Parents also contributed their expertise via focus groups and feedback about each iteration of the intervention. Incorporating the expertise of scientists, practitioners, and consumers yields a translational synergy that strengthens and accelerates the reciprocal influences of science and practice in the design, implementation, evaluation, and dissemination of interventions to promote resilience (Masten, 2011).

In an elegant illustration of translational synergy, Aber and colleagues (2011) initiated an empirical investigation of social-emotional learning and development. They began with a careful explication of theories of change that were implicit in the design and implementation of an applied effort to support children's efforts to resolve conflict creatively. Subsequent evaluations of the theories underlying the Resolving Conflict Creatively Program were translated from practice to research and back again to guide the development of a modified school-based intervention centered on reading, writing, respect, and resolution (4Rs). The 4Rs program incorporates multiple levels of intervention (e.g., individuals, classrooms, schools) and harnesses developmental cascades of influence across schools, classrooms, and children. While acknowledging the many difficulties that thwart synergistic translations between practice and research, the work of Aber and colleagues (2011) also demonstrates the incontrovertible value of confronting these challenges.

Challenges that hinder efforts to integrate the science and practice of resilience are manifold. First, good interventions and the research on which they are based take time, but there is a constant press for immediate action to support children, families, schools, and neighborhoods that are struggling in the present moment and cannot abide by the time course of rigorous science (Ager, Stark, Akesson, & Bootby, 2010; Masten, 2011). Second, effective interventions are, almost by definition, multifaceted, prompting a need to identify the salient facets or active ingredients of successful

interventions to best inform future science. Third, theory testing in the context of resilience-guided interventions necessitates a complementary shift in our evaluative lens away from symptom remission toward competence promotion. A legacy of interest in the problems of adaptation has produced far fewer tools to assess competence and positive dimensions of development. As efforts to promote the health and competence of future generations expand, they must be met with commensurate evaluative research to ascertain the specific features of interventions that are effective, and to test the theoretical hypotheses upon which they were grounded. Beyond the individual level, tools to evaluate broader systems, such as communities, governments, and nations, are particularly scarce (see Sherrieb, Norris, & Galea, 2010, for exception). Fourth, there is a dearth of practice-based research networks through which multiple providers in applied settings can collaborate to develop a living laboratory to generate and evaluate knowledge in the context of everyday practice (McMillen, Lenze, Hawley, & Osborne, 2009).

CONCLUSION

Positive psychology emphasizes the study of human strength and virtue with the aim of understanding and facilitating positive developmental outcomes (Seligman & Csikszentmihalyi, 2000). A resilience framework offers a powerful tool for realizing the goals of positive psychology in contexts of adversity. Contemporary models of resilience highlight the incremental information and impact that derives from integrating multiple levels of analysis and application. Similarly, translational synergy between the practice and science of resilience will best be realized by harnessing dynamic and cascading influences across developing systems and in collaboration with scientists, practitioners, and consumers.

SUMMARY POINTS

- Resilience refers to the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development (Masten, 2014).
- Resilience is supported or thwarted by direct effects of risks and resources, as well as by moderating processes of protection, vulnerability, and differential susceptibility.
- Resilience is dynamic; it emerges from many interactions within and between systems in a given cultural, developmental, and historical context that collectively influence the capacity of an individual system to adapt successfully to challenge.
- Although resilience research often has focused on the behavior of individuals, contemporary models of resilience encompass multiple levels of function and acknowledge the interdependence of interacting systems, ranging from molecular to societal levels of analysis across individuals, families, peer groups, schools, communities, governments, and cultures.
- Cultural influences on resilience are gaining traction amid growing recognition that interventions should be tailored to the unique strengths, vulnerabilities, and values of specific contexts, and also that different cultures may have traditions and practices that can inform resilience theory.
- Resilience remains an inspiring and informative framework for implementing positive psychology in practice.

- Recent efforts to expand the study of resilience across levels of analysis have complementary implications for applying this knowledge to multilevel interventions.
- Likewise, multilevel applications of resilience theory hold considerable potential for testing core theories regarding developmental cascades underlying adaptive continuity and change.
- Careful evaluations of resilience-informed interventions may refine extant efforts to support positive development.
- Interventions and research designed by fully collaborative teams of field-based practitioners, academically based scientists, and consumers have the potential to advance practice and science by accelerating the bidirectional transfer of knowledge and strengthening the mutual trust and respect that facilitate the generation of practice-based evidence and the implementation of evidence-based practice.

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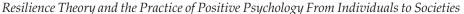
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