Rutgers University

From the SelectedWorks of J. J. Cutuli

2008

Promoting Competence and Resilience in the School Context

Ann S. Masten
Janette E. Herbers
J. J. Cutuli
Theresa L. Lafavor

Available at: https://works.bepress.com/jj_cutuli/2/

Ann S. Masten, Ph.D., *is a professor with the Institute of Child Development, and* **Janette E. Herbers, J. J. Cutuli,** *and* **Theresa L. Lafavor** *are graduate students, at the University of Minnesota, Twin Cities. E-mail: amasten@umn.edu*

Promoting Competence and Resilience in the School Context

Four decades of research on resilience in young people provide compelling data and models for applications in the school context. Resilience theory and findings are highly congruent with Strengths-Based School Counseling (SBSC) as formulated by Galassi and Akos (2007). In this article, resilience is defined in relation to competence in developmental tasks and risks to positive development, with reference to key promotive and protective roles of schools and school personnel. Implications of a resilience framework for schools are delineated, including positive approaches to mission statements, models of change, measuring positive progress, and mobilizing powerful systems for changing the direction of human development. New horizons of research on resilience are described, along with the potential of integrating SBSC and resilience-based frameworks in transformative efforts to promote the successful development of young people.

Four decades of research on competence and resilience in young people have yielded a compelling set of models and evidence for promoting and protecting positive youth development in the school context. In this article we highlight the findings from research on resilience in children and adolescents, with particular reference to Strengths-Based School Counseling (SBSC; Galassi and Akos, 2007).

Resilience refers to positive adaptation of a system during or following significant disturbances. In research on young people, investigators have studied resilience in relation to patterns of positive adaptation among individuals during or following exposure to adversities or risks that have the potential to harm development (Luthar, 2006; Masten, 2007). In addition to the life of a single human organism, however, the idea of resilience can be applied to many other kinds and levels of systems (Masten & Obradović, 2007). Children, for example, develop in the context of many systems, including families, peer groups, schools, communities, and societies (Bronfenbrenner, 1979), and the resilience of each of these systems also can be considered. Systems operating within a single individual can be considered as well, including the central nervous system and the immune system. Masten (2003) provided an illustration of interrelated and embedded systems for a child's life in relation to family, peer, and school systems, and the larger systems connected to children through schools or school personnel.

In most economically developed societies of the 21st century, schools play a central role in child development. Schools function as a vitally important context for child development, while at the same time a classroom or school also can be viewed as a system that may be threatened by adversities. A school that functions well in a context of adversity also can be said to manifest resilience, and there is considerable interest in the resilience of classrooms (Doll, Zucker, & Brehm, 2006) or schools (Wang & Gordon, 1994). The resilience of adults who work in schools is important because these individuals often play a central role in school resilience while also serving as protective adults or brokers of resources in the lives of high-risk children.

In research on resilience in development, the school context has been implicated in diverse ways as a promotive and protective environment for children and adolescents (Masten & Motti-Stefanidi, in press). Research findings implicate schools in many of the processes that promote positive development and prevent problems in the general population. In addition, the school context affords opportunities to facilitate resilience among children at risk for poor outcomes due to adversity exposure, ranging from divorce, family violence, homelessness, and maltreatment to war, natural disasters, and religious persecution.

In this article, we provide a concise overview of major findings from the resilience literature on children that have implications for schools and school counseling. Subsequently, we present a resilience-based framework for applications to the school context, with general guidelines for practice. Finally, we discuss new frontiers of resilience research, in particular research on plasticity in brain development and windows of opportunity for prevention and intervention.

THE COMPONENTS OF RESILIENCE

Understanding resilience in any system requires the definition and measurement of two basic aspects of system function and adaptation: First, what does it mean for this system (e.g., a person or a school) to be doing well or operating effectively; and second, what can threaten or disturb the successful functioning or survival of the system? In the case of developing systems, such as human individuals, the nature of effective function and also the nature of threats will change over the life course, so that definitions and assessments need to accommodate these changes. In addition, if the goal is to understand how a system responds well (or poorly) to disturbances, one must also identify and study the strengths and protective processes that make a difference for the system when it is threatened. Thus, the components of resilience include a focus on the positive outcomes of interest, the risk factors or threats to those outcomes, and potential strengths and protective factors that facilitate resilience in the context of these risks or threats.

Understanding Competence and Developmental Tasks

Research on resilience in children has focused on *competence in age-salient developmental tasks* as a way of defining and measuring how well a child's life is going (Masten & Coatsworth, 1998; Masten, Cutuli, Herbers, & Gabrielle-Reed, in press). In a given context, families and communities hold expectations for individual adaptation to the environment in domains expected to prepare the person for success in life. These expectations change over the course of development as individuals mature and move into new developmental contexts. Thus, very young children are expected to learn to walk and talk, listen to their parents, and comply with parental rules, whereas older children are expected to go to school, listen to teachers, behave appropriately in the classroom, get along with other children, learn to use the language and mathematical symbols of their culture effectively, and so forth. As children grow up, these expectations expand to include developmental tasks in other areas, including the domains of work, romantic relationships, family formation, and rearing children.

During any given period of development, individuals are expected to engage successfully in multiple domains of functioning. Thus, for example, children in elementary school are expected to do well in learning academic skills, forming and maintaining relationships with peers, and adhering to the standards of conduct for the classroom. Therefore, a child with major problems in any of these domains is not likely to be viewed as developing well. This multiplicity of expectations means that the adaptation of individuals from a developmental task perspective is multidimensional. Because of the multidimensional nature of developmental expectations, children viewed as manifesting resilience in the context of serious adversity would be doing well in multiple domains, successfully engaging or accomplishing multiple key developmental tasks. Resilience could be studied more narrowly by focusing on one dimension at a time, such as "academic resilience." Nonetheless, when a group of people is identified as manifesting resilience, it usually means that multiple criteria have been met for doing well.

Resilience researchers recognize that positive adaptation of a living system can be defined in relation either to external adaptation, internal adaptation, or both. Many developmental tasks are external markers of adaptation, related to getting along in the world. However, emotional well-being, happiness, life satisfaction, and physical health also can be assessed as criteria of internal adaptation in an individual. Some researchers include internal criteria in their definitions of resilience, whereas others focus exclusively on external successes. However, most investigators are interested in the interplay of internal well-being and external successes. Clearly, internal adaptation has the potential to interfere with external adaptation and, conversely, perceived external success or failure could affect a person's well-being. There is growing attention to these bidirectional processes linking competence in external developmental tasks to subjective well-being or health. The dynamic relations between internal and external adaptation are a fundamental concern of developmental systems theory.

Negative criteria also have been used in studies of resilience, by defining positive adaptation in terms of "no evidence of disorder" or "absence of problems." However, there is growing recognition that positive adjustment or development encompasses more than an absence of problems and, concomitantly, that effective interventions often focus on promoting competence and strengths in addition to, or instead of, focusing on the prevention or treatment of problems (Masten, 2001).

Research on topics such as "desistance" from delinquency in high-risk youth or recovery from trauma can be included under the broad umbrella of resilience research. A change toward good functioning is implied by desistance or recovery in these studies, changes that could be reframed in terms of function in key developmental task domains. In the case of desistance from delinquency, young people become more rule-abiding. In the case of recovery from trauma, studies may focus more broadly on a return to competent behavior in multiple contexts, such as family, school, work, and peer groups or other relationships.

In research on resilience in development, the school context has been implicated in diverse ways as a promotive and protective environment for children and adolescents.

Developmental Cascades and the Timing of Interventions

Resilience research has brought attention not only to the importance of competence in developmental tasks but also to connections over time among the multiple domains of functioning. The links among dimensions of effective function in development task domains, such as academic achievement or peer competence, and traditional symptom domains, such as internalizing or externalizing symptoms, hold particular interest (Masten, Burt, & Coatsworth, 2006). How an individual functions in one domain often has implications for other domains. The idea of such spillover effects is not new. School counselors and developmental scientists long have observed that some kinds of problems seem to "snowball" or spread over time. Similarly, developmental theorists have posited that competence begets competence, in the sense that success in newly emerging developmental tasks builds on successes in previous tasks. However, recent research is corroborating such *developmental cascade* effects with much more informative longitudinal research designs and analytic approaches (Burt, Obradović, Long, & Masten, 2008; Masten et al., 2005).

Developmental theorists have posited that competence begets competence, in the sense that success in newly emerging developmental tasks builds on successes in previous tasks.

Developmental cascade research is important for stakeholders concerned with prevention and strategic intervention. If antisocial behavior or attention-regulation problems begin very early and these problems rapidly undermine academic progress and peer relations from the outset of school entry, then it is important to intervene before the nature of the problems has spread. Furthermore, the most cost-effective approaches seem to prevent multiple problems before they occur. The high "return on investment" in early child development documented by Heckman (2006) may be due in part to timely interventions with cascading effects. High returns on early investments may reflect the cumulative impact of promoting positive cascades and averting the spreading influence of early arising problems in high-risk children.

Risk, Cumulative Risk, Adversity, and Trauma

Resilience is concerned with positive adaptation in a context of significant threats to the person (or any other system under consideration). The concept of *risk* or *risk factor* refers to any measurable predictor of an undesirable outcome. In research on young people over the past four decades, a wide variety of events and experiences have been studied as risks to child development, including effects of war, natural disasters, terrorism, family violence, divorce, maltreatment, other traumatic life events such as fires, and chronic conditions such as poverty or living in an understaffed orphanage. Investigators realized early in the study of various adversities that hazardous conditions and risk factors rarely arise in isolation, and they began to measure *cumulative risk* or aggregated life events (Masten, Best, & Garmezy, 1990; Obradović, Shaffer, & Masten, in press). As the level of risk exposure accumulated, children often had worse outcomes, reflecting a *risk gradient*. Even at high cumulative levels of risk or adversity, however, some children were observed to be doing well (better than one would expect from the level of risk), which indicated that other influences must be important to consider. The search for explanations of such "off-gradient" patterns of adaptation led investigators to the study of promotive and protective factors. These factors reflect the functional strengths of processes operating in people, relationships, and environments that make resilience possible.

The Short List and Fundamental Protective Systems for Human Development

Striking consistency was observed in findings on promotive and protective factors in the research on resilience. This convergence was surprising given the diversity of the people, adversities, methods, and cultures studied in the first generation of work on resilience. Masten (2001) described convergent findings on promotive or protective factors as "the short list" of clues to what matters most for resilience in children, asserting that this list implicates a set of fundamental adaptive systems that keep human development on course. If these systems are developing and operating normally, they afford children considerable ongoing capacity for resilience. Masten argued that resilience typically results from the function of these basic protective systems, which have deep roots in biological and cultural evolution. Thus, resilience typically arises from what Masten termed "ordinary magic" rather than special or unique advantages. The greatest danger to children occurs when these protective systems themselves are damaged, destroyed, or undermined.

A short list of strengths in the child, family, relationships, and larger environment widely implicated in the resilience literature is presented in Table 1, along with the implicated human adaptive systems. Counselors and educators have long recognized the importance of strengths on this list, such as problem-solving skills, self-control skills, and relationships with competent and caring adults.

How Schools and School Counselors Matter

Effective schools and positive school experiences have been implicated for decades as strengths or protective influences in studies of resilience (Condly, 2006; Luthar, 2006; Masten et al., 1990; Rutter & Maughan, 2002; Wang & Gordon, 1994). Research on school-level effectiveness has parallels in studies of effective families. In either setting, positive devel-

Table 1. The "Short List" of Commonly Observed Predictors of Resilience in Young People

Promotive/Protective Factors	Implicated Adaptive Systems[a]
Positive relationships with caring adults	Attachment
Effective parenting	Family
Intelligence, problem-solving skills	Learning and thinking systems
Perceived efficacy, control	Mastery motivation
Achievement motivation, persistence	Mastery motivation
Self-regulation skills	Executive function systems
Effective stress management	Stress response systems
Positive friends, romantic partners	Peer and family systems, attachment
Faith, hope, spirituality	Religion, cultural systems
Beliefs that life has meaning	Religion, cultural systems
Effective teachers, schools	Education systems

[a] Many of these fundamental adaptive systems probably play a role in the development of most correlates of resilience. However, the adaptive systems listed for a particular predictor are implicated in a major way for that factor.

opment has been linked to the combination of warm relationships, a supportive climate, high expectations, and an orderly structure with consistent rules and discipline (Masten & Motti-Stefanidi, in press). But schools also actively afford many positive opportunities for children, engage many of the fundamental protective systems listed in Table 1, and are charged by society with the task of nurturing human capital and shaping many of the adaptive systems implicated for resilience. Thus schools and the adults who implement the educational mission have multifaceted roles, both in nurturing competence in age-salient developmental tasks and in shaping fundamental adaptive systems.

Teachers, school counselors, and other staff function directly as promotive and protective factors in the lives of high-risk children while also nurturing the learning skills, knowledge, self-regulation skills, and self-protective skills that children need to adapt on their own. School counselors may contribute to child resilience in multiple ways at multiple levels, including efforts to broker services for an individual student or the student body of a whole school, actions to promote positive relationships of school staff with all students, and advocacy or intervention aimed at promoting student strengths. Galassi and Akos (2007) have described the school counselor in SBSC as an applied developmental specialist who promotes positive academic development and school success in multiple ways.

School effectiveness also can be considered at multiple levels, focusing on the resilience of individuals and the resilience of the school system itself. Schools afford numerous opportunities for healthy relationships with positive adults and peers and also may actively implement programs to establish mentoring relationships. Schools may provide basic food and health care for low-income students, nurturing healthy brain development and physical growth along with skills development. Effective schools and teachers provide children on a daily basis with mastery experiences, opportunities to experience success and enjoy achievement that also serve to foster intrinsic motivation, self-efficacy, and persistence in the face of failure. Pianta (2006) has delineated a dynamic and integrative portrait of the school as a context for child development. Similarly, Eccles and Roeser (1999) described the ways that regulatory processes characterizing the social and instructional nature of schools shape child development over the course of the school years. SBSC integrates these perspectives in the role of the school counselor.

A FRAMEWORK FOR PROMOTING COMPETENCE AND RESILIENCE

Frameworks for the promotion and protection of positive development have been delineated in reference to normative (e.g., Lerner & Dowling, 2002) and extenuating circumstances (Masten, 2006; Masten & Obradović, 2007; Masten & Powell, 2003; Yates & Masten, 2004). These frameworks are highly congruent with the guiding principles of SBSC (Galassi & Akos, 2007). Masten and col-

leagues have described the following components in a resilience framework for intervention: mission, models, measures, methods, and various multifaceted combinations of these.

Mission: Framing Positive Objectives

Positive goals are fundamental to resilience-based frameworks, as well as to the ASCA National Model® (American School Counselor Association, 2005) and SBSC. Whether the mission concerns development in the normal course of child development, or in situations where the lives of children are threatened by adversity, or in cases where children already have manifested problems, objectives are defined in reference to important domains of positive function and developmental progress in these domains. Schools have a particular mission to nurture the academic and social skills and motivations that young people need to become productive members of their societies. The mission of school systems, or districts, or even the mission of national education systems, can be framed in terms of positive goals and outcomes. Focusing on positive objectives does not mean that problems are ignored, but rather that progress and success are assessed and judged in relation to positive objectives and outcomes.

Schools afford numerous opportunities for healthy relationships with positive adults and peers and also may actively implement programs to establish mentoring relationships.

Positive objectives not only reflect the values and ultimate goals of most stakeholders, but also carry a much more appealing message to parents, school staff, communities, and children themselves. Most young people and parents prefer to be part of programs and efforts aiming toward positive goals such as reading fluency, graduating from high school, or achieving college degrees and good jobs, rather than programs aiming to reduce delinquency, school dropout, teenage pregnancy, underage drinking, or welfare dependency. In the course of recent international efforts to change the framework for child welfare systems worldwide to focus on positive development and strengths, stakeholders have noted the transformative effect of positive goals and strategies on morale and motivation at both the individual and system levels (Flynn, Dudding, & Barber, 2006). Similarly, Galassi and Akos (2007) have made a strong case for transforming the goals and focus of school counseling in a positive direction.

Models: Promotive and Protective Influences

Positive goals require causal and action models that include positive processes and components as well as risks, threats, deficiencies, or symptoms. Prevention and remediation models that exclude positive processes, contributors, and outcomes run the risk of omitting some of the best evidence and strategies for positive development and change. In the SBSC framework, Galassi and Akos (2007) call for school counselors to move beyond deficit-based models and crisis management in order to transform the role and effectiveness of school counselors.

Over the years, a number of resilience-oriented models of child adaptation and development have been delineated that include positive components and processes while still including negative components or processes (Garmezy, Masten, & Tellegen, 1984; Luthar, Cicchetti, & Becker, 2000; Masten, 1989, 2001; Masten et al., in press). These models include assets or strengths as well as deficits, promotive and protective processes as well as risk and vulnerability processes, and competence outcomes as well as problem outcomes. These models accommodate people and pathways characterized by better than expected outcomes. Thus, there have been models illustrating general risk gradients (with problems rising as a function of cumulative risk) that also allow for "off the gradient" children who succeed in the context of high risk for problems (Masten & Obradović, 2006). Similarly, models permit pathways of development to turn in more positive directions, either in relation to developmental transitions (such as the transition to adulthood; see Masten, Obradović, & Burt, 2006) or in the aftermath of disaster (Masten & Obradović, 2007).

Models are important methodologically as well as conceptually. Resilience models brought greater attention to the assessment of positive influences and outcomes, as well as to theories of positive change for designing interventions. Similarly, SBSC calls attention to the importance of assessing strengths and positive changes in students and schools.

Measures: Assessing Competence and Positive Progress

Positive objectives require a means of assessing positive progress. Schools have a long tradition of evaluating academic progress. Nonetheless, school counselors and psychologists often have been called upon to assess problems, disabilities, disorders, and risk factors, to the exclusion of strengths, resources, and promotive or protective factors associated with learning, development, or positive recovery. Resilience researchers played an instrumental role in expanding assessments to include strengths as well as problems and protective factors in addition to vulnerabilities. For example, assessments for a student beyond progress in academic skills might include progress in prosocial classroom behavior, peer friendships, relationships with teachers or mentors, access to extracurricular enrichment activities, school engagement, leadership, and motivation to learn. SBSC emphasizes the evaluation of strengths, progress, and positive outcomes at the student and school levels.

Methods: Reducing Risk, Adding Assets, Mobilizing Powerful Adaptive Systems

Resilience research also suggests many effective strategies for practices to promote competence of individuals in developmentally strategic ways and at multiple levels. Strategies can be developed on the basis of evidence and well-grounded theories of how competence develops, how cascades or protective factors work, which risk factors are most threatening to whom, and the best ways to prevent problems or ameliorate potential harm. Basic strategies from the resilience research on individual adaptation include building assets, reducing risks, and mobilizing powerful adaptive systems, in addition to fostering healthy human development in the broadest sense.

The best "inoculation" for threats to general risks posed by life is healthy development itself. Healthy, competent individuals are highly adaptive in the face of ordinary adversities because they are armed with many self-righting and self-correcting systems. These include powerful protective relationships (with parents and later friends, romantic partners, and spiritual figures), good information-processing systems, and protections afforded by many cultural traditions and practices. The short list implicates a powerful set of human adaptive systems that typically protect human function and development. Just as a healthy immune system is the best general protection for a wide variety of possible infections, children are generally best positioned to become well-adjusted adults if they possess normal problem-solving skills, attachment relationships, self-efficacy, motivation to meet challenges, self-regulation capacity, and beliefs that life has meaning. These adaptive systems help individuals handle the usual bumps and detours of life along the way.

Schools play an important role in nurturing and protecting the development of these fundamental adaptive systems (Masten & Motti-Stefanidi, in press). But schools also are in a unique position to identify and address risks or moderate their harm to children and development. Some threats to development arise very early, perhaps strongly influenced by genetic vulnerabilities or intrauterine environments. Others arise from experiences after birth, some earlier and some later, some traumatic and acute, and others persistent.

There are a number of risk-focused strategies by which school systems can act to promote better chances for high-risk children. One such strategy is to identify and address important early risk factors for school success. Early screening for school readiness can lead to preschool enrichment or treatment programs to address the threats of early deprivation, neurodevelopmental delays, or language needs. Schools also can serve healthy food to counter malnutrition issues of low-income or neglected children who may lack basic or balanced nourishment. Other examples of risk-focused strategies include efforts to reduce the impact of residential mobility on stability of schooling, teachers, peers, and curricula, or programs to reduce bullying or discrimination in school through evidence-based interventions.

Addressing clear risk factors for the development of competence is important. Another key strategy is focused on building resources or assets associated with positive development. For many at-risk students, schools represent a relatively asset-rich environment (compared to their homes or neighborhoods), not just for children but also for their families. Examples of asset-focused strategies with the potential to promote competence include providing health clinics, after-school programs, tutoring and homework services, multimedia libraries, swimming pools, community recreation activities, and opportunities to development talents in art, music, math, or chess.

A third and powerful strategy for schools involves efforts to mobilize the most fundamental and powerful adaptive systems for changing human development. Schools have the potential to engage powerful engines of change when they mobilize major adaptive systems for children (and families) who do not have strong protections in their lives. Programs designed to change the quality of parenting, add a long-term mentor to the life of a child, or change the motivation for learning or continuing in school all reflect this kind of strategy. These strategies tend to have multiplicative effects because they come with powerful motivational reward systems and self-renewal capacity. Designing a program to duplicate everything an effective parent or mentor might do to promote positive development is vastly more difficult than ensuring that a child has a strong bond with a competent, attached adult who is motivated to use the human and social capacity at his or her disposal to foster and protect a child's development.

There are analogous strategies at the school level. It has been widely noted that effective schools often have positive leadership, a good climate, motivated staff, and so forth (Masten & Motti-Stefanidi, in press; Pianta, 2006; Wang & Gordon, 1994). Actions by school counselors to change the nature of staff relationships, leadership, mentoring or motivation, and the climate of the school can be viewed as methods for engaging powerful systems for positive school function and development.

School counselors cannot expect themselves to be the central protective mentor in the lives of all the young people who may need such a relationship. However, they can work to promote programs that build such relationships for many children, and also strive to promote a school climate ripe for mentoring relationships to emerge. In SBSC, a counselor's efforts to develop leadership skills and other talents

Efforts to promote positive development or resilience might require multifaceted strategies, with efforts to build cumulative protections with strategic, sequential timing.

in students or staff can be designed to harness the energy of the mastery motivation system, aiming for multiplicative effects. Individual students or teachers are more likely to strive for attainment and persist in the face of setbacks when they have a sturdy sense of their own effectiveness and motivation to succeed in their work in the school context. Such efforts can be guided by a rapidly expanding evidence base on the development of competence, protective systems, effective schools, resilient organizations, and perhaps most importantly, what works to develop and engage powerful systems of human adaptation and learning.

Multifaceted Approaches

Development and resilience involve multiple components and processes at multiple levels. Threats to positive adaptation also tend to be cumulative or complex. Thus, it comes as no surprise that efforts to promote positive development or resilience might require multifaceted strategies, with efforts to build cumulative protections with strategic, sequential timing (Masten et al., 2006, in press). Early examples of programs with combined strategies include Head Start (Zigler & Styfco, 2001), the Abecedarian Project (Campbell, Ramey, Pungello, Sparling, & Miller-Johnson, 2002), the High/Scope Perry Preschool program (Schweinhart et al., 2005), and the Chicago Child-Parent Centers (Reynolds et al., 2007). Additional examples of multi-component programs are FAST Track (Conduct Problems Prevention Research Group, 2002), the Seattle Social Development Project (Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001), the PATHS curriculum (Greenberg, 2006), and Early Risers (August, Realmuto, Hektner, & Bloomquist, 2001). Much as these programs attempted to promote positive development through multiple strategies, SBSC (Galassi & Akos, 2007) recognizes the potential power of multifaceted school counseling. At the same time, there is growing interest in efficiency and cost-effectiveness. Research is underway to identify the most cost-effective combinations of multi-component interventions and programming. Budget-minded policy makers and educational administrators want to know the best ways to invest limited dollars for achieving academic goals, addressing educational disparities, and avoiding academic dropout and other problems.

Understanding cascade effects in development—when and how one strength (or problem) leads to another—holds considerable promise for researchers, practitioners, and policy makers alike.

NEW FRONTIERS OF RESILIENCE RESEARCH AND PRACTICE

Initial research on resilience was focused on identifying what seemed to make a difference (e.g., the short list of protective factors). Subsequent studies were designed to figure out the processes underlying resilience that might suggest methods to engage these processes for positive change. The next step was testing whether interventions designed to focus on these potential protective processes would work to promote resilience. Informative findings have been accumulating for more than four decades from these waves of resilience research. Now, a new wave of research on resilience is emerging as a result of recent advances in genomics, biology, animal models, neuroscience, statistics, and the modeling of development in complex systems (Masten, 2006).

Investigators are exploring new possibilities for creating, changing, or reshaping fundamental adaptive systems for resilience. Highly targeted interventions are being designed on the basis of rapidly expanding knowledge about how experience shapes the expression of genes that in turn shape development, how the brain develops and responds to experience, how to induce brain plasticity, and a number of other provocative strategies not envisioned a generation ago (Lester, Masten, & McEwen, 2006). Following new insights into the development of executive function abilities and their central importance for school success has led to innovative strategies to boost these skills among high-risk children (e.g., Diamond, Barnett, Thomas, & Munro, 2007). Older interventions with known effectiveness in schools, such as the PATHS curriculum, are being reconceptualized in light of advances in neuroscience, with the promise of further refining these evidence-based model practices (e.g., Greenberg, 2006).

There is also growing interest in theory and methods that unite resilience studies from very diverse fields (e.g., ecology, urban planning, organizational psychology, public health) to understand, prepare for, and respond more effectively to disruptions of interdependent systems, such as those involved in major disasters and trauma (Masten & Obradović, 2006). School systems play a central role in these scenarios, given their mission and the amount of time children spend in schools. In the aftermath of disaster, for example, people in a community often look to the reopening of school as an important symbol of recovery and normalization. Moreover, teachers and all other school personnel must be viewed as "first responders" because of the high probability a disaster will occur during school hours.

Understanding cascade effects in development—when and how one strength (or problem) leads to another—holds considerable promise for researchers, practitioners, and policy makers alike. These stakeholders share the goal of doing the right thing at the right time to promote good outcomes in cost-effective ways. Growing evidence from studies of resilience suggests that there are important windows of opportunity and vulnerability, when development is more likely to change direction and

timing bodes well for positive cascade effects. The preschool years appear to be a window of opportunity for addressing antisocial behavior, promoting language development, and shaping executive function skills, all of which set the stage for positive transitions into school (Blair, 2002). Similarly, efforts to reduce problem behaviors, such as underage drinking, may need to begin in childhood (e.g., addressing antisocial behavior before cascade effects perpetuate), with special attention to a window of escalating risk and vulnerability in the transition to adolescence (Masten, Faden, Zucker, & Spear, 2008; Zucker, Donovan, Masten, Mattson, & Moss, 2008).

Early action is crucial to avert the potentially disastrous effects of alcohol use on adolescent brain development and to reduce the odds of accidental injuries and deaths. The best and most cost-effective efforts to prevent problems may be sequential strategies to promote positive cascades through building strengths and bolstering adaptive systems, such as through supporting effective parenting; shaping or reshaping attention and executive function skills; boosting literacy and numeracy skills in the beginning school years; keeping children engaged with teachers, schools, and positive peers; offering opportunities for prosocial mastery experiences; and enhancing prosocial leadership skills. These efforts would seem to require school counselors to collaborate across school levels in K–12 district planning and programming.

SBSC is highly congruent with the findings and frameworks arising from research on resilience in development. Resilience science offers a strong and rapidly expanding base of knowledge with great relevance for implementing the guidelines of the SBSC framework delineated by Galassi and Akos (2007). Concomitantly, resilience research will be refined by the questions, hypotheses, wisdom, and conclusions arising from strengths-focused practice in schools and evaluations of its manifested effectiveness in promoting positive adaptation and development. Integrating SBSC with resilience-based frameworks and findings on positive development in schoolchildren has the potential to accelerate growth in the knowledge base and the quality of evidence-based practices to the benefit of all who hold a stake in the competence and resilience of young people. ▮

References

American School Counselor Association. (2005). *The ASCA national model: A framework for school counseling programs* (2nd ed.). Alexandria, VA: Author.

August, G. J., Realmuto, J. M., Hektner, J. M., & Bloomquist, M. L. (2001). An integrated components preventive intervention for aggressive elementary school children: The Early Risers program. *Journal of Consulting and Clinical Psychology, 69,* 614–626.

Blair, C. (2002). School readiness: Integrating cognition and emotion in a neurobiological conceptualization of children's functioning at school entry. *American Psychologist, 57,* 111–127.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge, MA: Harvard University Press.

Burt, K. B., Obradović, J., Long, J. D., & Masten, A. S. (2008). The interplay of social competence and psychopathology over 20 years: Testing transactional and cascade models. *Child Development, 79,* 359–374.

Campbell, F A., Ramey, C. T., Pungello, E., Sparling, J., & Miller-Johnson, M. (2002). Early childhood education: Young adult outcomes from the Abecedarian Project. *Applied Developmental Science, 6,* 42–57.

Condly, S. J. (2006). Resilience in children: A review of literature with implications for educators. *Urban Education, 41,* 211–236.

Conduct Problems Prevention Research Group. (2002). Predictor variables associated with positive Fast Track outcomes at the end of third grade. *Journal of Abnormal Child Psychology, 30,* 37–52.

Diamond, A., Barnett, W. S., Thomas, J., & Munro, S. (2007). Preschool program improves cognitive control. *Science, 318,* 1387–1388.

Doll, B., Zucker, S., & Brehm, K. (2006). *Resilient classroom: Creating health environments for learning.* New York: Guilford.

Eccles, J. S., & Roeser, R. W. (1999). School and community influences on human development. In M. H. Bornstein & M. E. Lamb (Eds.), *Developmental psychology: An advanced textbook* (4th ed., pp. 503–554). Mahwah, NJ: Lawrence Erlbaum Associates.

Flynn, R. J., Dudding, P. M., & Barber, J. G. (Eds.). (2006). *Promoting resilience in development: A general framework for systems of care.* Ottawa, Ontario, Canada: University of Ottawa Press.

Galassi, J. P., & Akos, P. (2007). *Strengths-Based School Counseling: Promoting student development and achievement.* Mahwah, NJ: Lawrence Erlbaum Associates.

Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The study of stress and competence in children: A building block for developmental psychopathology. *Child Development, 55,* 97–111.

Greenberg, M. T. (2006). Promoting resilience in children and youth: Preventive interventions and their interface with neuroscience. *Annals of the New York Academy of Sciences, 1094,* 139–150.

Hawkins, J. D., Guo, J., Hill, K. G., Battin-Pearson, S., & Abbott, R. D. (2001). Long-term effects of the Seattle social development intervention on school bonding trajectories. *Applied Developmental Science, 5,* 225–236.

Heckman, J. J. (2006). Skill formation and the economics of investing in disadvantaged children. *Science, 312,* 1900–1902.

Lerner, R. M., & Dowling, E. M. (2002). Positive youth development: Thriving as the basis of personhood and civil society. *New Directions for Youth Development, 95,* 11–33.

Lester, B. M., Masten, A. S., & McEwen, B. S. (Eds.). (2006). *Resilience in children* (Annals of the New York Academy of Sciences, Vol. 1094). New York: Academy of Sciences.

Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology, Vol. 3: Risk, disorder, and adaptation* (2nd ed.). New York: Wiley.

Luthar, S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71,* 543–562.

Masten, A. S. (1989). Resilience in development: Implications of the study of successful adaptation for developmental psychopathology. In D. Cicchetti (Ed.), *The emergence of a discipline: Rochester Symposium on Developmental Psychopathology* (Vol. 1, pp. 261–294). Hillsdale, NJ: Lawrence Erlbaum.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56,* 227–238.

Masten, A. S. (2003). Commentary: Developmental psychopathology as a unifying context for mental health and education models, research, and practice in schools. *School Psychology Review, 32,* 170–174.

Masten, A. S. (2006). Promoting resilience in development: A general framework for systems of care. In R. J. Flynn, P. Dudding, & J. G. Barber (Eds.), *Promoting resilience in child welfare* (pp. 3–17). Ottawa, Ontario, Canada: University of Ottawa Press.

Masten, A. S. (2007). Resilience in developing systems: Progress and promise as the 4th wave rises. *Development and Psychopathology, 19,* 921–930.

Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology, 2,* 425–444.

Masten, A. S., Burt, K. B., & Coatsworth, J. D. (2006). Competence and psychopathology in development. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology, Vol. 3: Risk, disorder, and psychopathology* (2nd ed., pp. 696–738). New York: Wiley.

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.

Masten, A. S., Cutuli, J. J., Herbers, J. E., & Gabrielle-Reed, M. J. (in press). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *The handbook of positive psychology* (2nd ed.). New York: Oxford University Press.

Masten, A. S., Faden, V. B., Zucker, R. A., & Spear, L. P. (2008). Underage drinking: A developmental framework. *Pediatrics, 121*(Suppl. 4), S235–S251.

Masten, A. S., & Motti-Stefanidi, F. (in press). Understanding and promoting resilience in children: Promotive and protective processes in schools. In T. Gutkin & C. Reynolds (Eds.), *Handbook of school psychology.*

Masten, A. S., & Obradović, J., (2006). Competence and resilience in development. *Annals of the New York Academy of Sciences, 1094,* 13–27.

Masten, A. S., & Obradović, J. (2007). Disaster preparation and recovery: Lessons from research on resilience in human development. *Ecology and Society, 13*(1), 9.

Masten, A. S., Obradović, J., & Burt, K. (2006). Resilience in emerging adulthood: Developmental perspectives on continuity and transformation. In J. J. Arnett & J. L. Tanner (Eds.), *Emerging adults in America: Coming of age in the 21st century* (pp. 173–190). Washington, DC: American Psychological Association Press.

Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In S. Luthar (Ed.), *Resilience and vulnerability: Adaptation in the context of childhood adversities* (pp. 1–25). New York: Cambridge University Press.

Masten, A. S., Roisman, G. I., Long, J. D., Burt, K. B., Obradović, J., Riley, J. R., et al. (2005). Developmental cascades: Linking academic achievement, externalizing and internalizing symptoms over 20 years. *Developmental Psychology, 41,* 733–746.

Obradović, J., Shaffer, A., & Masten, A. S. (in press). Risk in developmental psychopathology: Progress and future directions. In L. C. Mayes & M. Lewis (Eds.), *The environment of human development: A handbook of theory and measurement.* New York: Cambridge University Press.

Pianta, R. C. (2006). Schools, schooling, and developmental psychopathology. In D. Ciccheti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 1. Theory and method* (2nd ed., pp. 494–529). Hoboken, NJ: Wiley.

Reynolds, A. J., Temple, J. A., Ou, S.-R., Robertson, D. L., Mersky, J. P., Topitzes, J. W., et al. (2007). Effects of a school-based, early childhood intervention on adult health and well-being. *Archives of Pediatrics and Adolescent Medicine, 161,* 730–739.

Rutter, M., & Maughan, B. (2002). School effectiveness findings, 1979–2002. *Journal of School Psychology, 40,* 451–475.

Schweinhart, L. J., Montie, J., Xiang, Z., Barnett, W. S., Belfield, C. R., & Nores, M. (2005). *Lifetime effects: The High/Scope Perry Preschool study through age 40.* (Monographs of the High/Scope Educational Research Foundation, 14). Ypsilanti, MI: High/Scope Press.

Wang, M. C., & Gordon, E. W. (1994). *Educational resilience in inner-city America: Challenges and prospects.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Yates, T. M., & Masten, A. S. (2004). Fostering the future: Resilience theory and the practice of positive psychology. In P. A. Linley & S. Joseph (Eds.), *Positive psychology in practice* (pp. 521–539). Hoboken, NJ: Wiley.

Zigler, E., & Styfco, S. J. (2001). Extended childhood intervention prepares children for school and beyond. *Journal of the American Medical Association, 285,* 1378–2380.

Zucker, R. A., Donovan, J. E., Masten, A. S., Mattson, M. E., & Moss, H. B. (2008). Early developmental processes and the continuity of risk for underage drinking and problem drinking. *Pediatrics, 121*(Suppl. 4), S252–272.

Earn CEUs for reading this article. Visit *www.schoolcounselor.org,* and click on *Professional School Counseling* to learn how.