

RESILIENCE IN CHILDREN

A Review of Literature With Implications for Education

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In spite of the most adverse circumstances, some children manage to survive and even thrive, academically and socially, into adulthood. A complex array of individual, family, and community factors has been identified that best explains resilience and lays the foundation for programs and interventions targeted at fostering the development and maintenance of resilience in at-risk youth. The literature is reviewed to identify and explain those factors, discuss their mutual interaction, and explain their implications for the creation of programs designed to support resilience in school-aged children.

Keywords: at-risk children; thriving; overcoming; beating the odds

In her book *Shattered Assumptions*, Janoff-Bulman (1992) posits the existence of three fundamental assumptions that all people hold and by which all people operate. They are as follows: The world is essentially a good place; life and events have meaning and purpose; and one's own person is valuable or worthy. Because these assumptions are so fundamental, they are not usually consciously considered (Bargh & Chartrand, 1999). Rather, sensory and mental events are evaluated through these principles. For most of what occurs in life, with all its ups and downs, both the routine and the novel, these assumptions remain intact, unquestioned, and unmoved. Yet occasionally events transpire that are so hurtful to persons that their fundamental worldview is questioned and altered. Traumatic events effect great damage not so much because of the immediate harm they cause but also because of the lingering need to re-evaluate one's view of oneself and the world.

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Of course, trauma does not affect all people in the same way and with the same force. Some people, after initial pain and suffering, manage to lead essentially normal, and perhaps even highly productive, lives. They do not seem embittered, angry, depressed, or otherwise incapacitated. Although exact percentages are unavailable, it is probably fair to state that, given greater severity of trauma and/or frequency of traumatic events, an individual's likelihood of being able to cope and progress lessens. Nevertheless, there are examples of people surviving severe and prolonged exposure to trauma who manage both to survive and prosper (e.g., Elie Wiesel, survivor of Auschwitz, Buna, Buchenwald, and Gleiwitz, and winner of the Nobel Peace Prize). How many others are there who survive trauma of the nonheadline variety and manage to succeed in family, work, and in their communities? It is these so-called resilient people who have become the focus of intense recent psychological research.

Although not demonstrated as empirical fact, most people would assume that, although an earthquake or brutal robbery would be devastating to adults and children alike, it is children who suffer more and therefore warrant more concern and care, as they lack the cognitive, physical, and financial means to care for themselves, make sense of happenings, affect changes, and take preventive measures to help ensure against a repeat of the traumatic event (assuming such a prevention is possible). This, however is a belief, not a fact determined by research. Nevertheless, this belief has fueled much professional research interest and private and governmental investment of time and money in strategies, policies, and programs that can help protect children against environmental harm, and when harmed, mitigate the consequences.

Clearly, poverty and its associated problems (crime, lack of opportunity, violence, etc.) are hard on children (Cicchetti & Garmezy, 1993; Sigman, 1995). When exposed to the multiple stressors of poverty, children typically do not do well in school, are more likely to be delinquent in later years, and have more and greater marital and occupational problems (Cowen, Wyman, Work, & Parker, 1990; Garbarino, 1995; Garbarino, Dubrow, Kostelny, & Pardo, 1992; Katz, 1997; Stouthamer-Loeber et al., 1993; Werner, 1989, 1993; Zimrin, 1986). But there is a class of children who defy

the conventional wisdom and not only survive hostile environments but also actually thrive; these are the resilient (Garmezy, 1996; Masten & Coatsworth, 1998; Masten et al., 1995; Wolff, 1995). A cautionary note is in order, however. Resilience should not be considered a single dichotomous variable (you either are or are not resilient in any and all situations); rather, resilience is better perceived as a label that defines the interaction of a child with trauma or a toxic environment in which success, as judged by societal norms, is achieved by virtue of the child's abilities, motivations, and support systems. Additionally, it is more accurate to describe resilience in continuous rather than dichotomous terms.

The study of resilience is rooted in earlier research in psychopathology, poverty, and traumatic stress (both individual and historical; Cicchetti & Garmezy, 1993). Garmezy (1971, 1991) himself serves as the best starting point for modern research in resilience as he and others began to examine not pathology under adverse circumstances but rather resistance and growth. While researchers were busy discovering principles that would explain the psychopathology associated with conditions of poverty, environmental stress, and low socioeconomic status (SES) and IQ levels, it became clear that a significant minority of people living in such conditions were not suffering obvious or overt ill effects. The medical community examined how persons exposed to the stressors of disease and illness led and continue to lead productive lives (Hoekelman, 1991; Leonard, 1991; Patterson, 1991; Sinnema, 1991). Persons interested in understanding and effectively dealing with delinquency examined the relationship between IQ and delinquency as well as factors such as SES and ethnicity (Cederblad, Dahlin, Hagnell, & Hansson, 1995; Kandel et al., 1988; Lynam, Moffitt, & Stouthamer-Loeber, 1993; Moffitt & Silva, 1988; White, Moffitt, & Silva, 1989). Educators refined the concept and sought to understand the factors that explained academic, as opposed to social, resilience (Finn & Rock, 1997; Gordon, 1996; Masten, et al., 1988; Waxman, Huang, & Padrón, 1997; Winfield, 1994). Some researchers focused on characteristics of the individual, whereas others examined the family (Carro, Grant, Gotlib, & Compas, 1993; Conrad & Hammen, 1993; Gribble et al., 1993; Janoff-Bulman, 1992; Radke-Yarrow & Brown, 1993; Rende & Plomin, 1993; Smith, 1995; Smith & Prior, 1995;

Wyman, Cowen, Work, & Parker, 1991; Wyman et al., 1992). Of particular importance to the discussion of relevant individual and social (i.e., familial and environmental) characteristics is the theory of Scarr and McCartney (1983), which seeks to explain how individual characteristics interact with the environment to produce new environments (however, see Baumrind, 1993, for a critique of the theory). Suffice it to say that there are many perspectives on the causes of resiliency and how it plays out in the lives of children and adults.

This review will introduce the discussion of resilience by nesting it within a brief acknowledgement of the situation in which children find themselves today. Next, presentation of competing theoretical perspectives leads to an in-depth analysis of the three main factors associated with resilience. This analysis segues into a discussion of present perspectives on the exact nature of the resilience construct and ends with a description of how the reviewed research informs (or should inform) the fostering of resilience in an educational setting.

DANGER AND SURVIVAL

Although perhaps society, civilization, and life have never been ideal and technological and legal advances have improved the lot of most people, research makes clear that children in modern American society are being exposed to an ever increasingly hostile or toxic environment (Garbarino, 1995; Garbarino et al., 1992; Katz, 1997; Masten & Coatsworth, 1998). There have been increases in child poverty, drug use, violence, and abuse; declines in academic performance; and fundamental changes (for the worse) in discipline and social behavior. Garbarino (1995) goes so far as to say that the environments in which children live today have become "poisonous to their development" (p. 4). What seems most problematic about the aforementioned list of social and personal pathologies is their simultaneous and concurrent existence. Specifically, it is hypothesized that no one single factor is, in and of itself, sufficient to pose a significant risk to the child's development and behavior. Rather, there is a cumulative effect, one that is multiplicative (not merely additive) in nature (Garbarino et al., 1992). For example, Sameroff,

Seifer, Barocas, Zax, and Greenspan (1987) compared verbal IQ with number of risk factors experienced. There was not much of a decline in mean IQ scores in the presence of none, one, or two risk factors, but there was a precipitous drop when there were three or more risk factors. In addition to this, it was also discovered that the effect size of multiple risk factors was much greater (three times as large) than that of any single risk factor. According to Garbarino et al. (1992), although the danger for urban children is already at critical levels, children in general are at risk because of the powerfully negative effect of multiple risk factors such as single parenthood, parental rigidity, lack of community support for the child and family, and economic pressures.

The seminal Kauai Longitudinal Study (Werner, 1989, 1993, 1995), which followed all children born on that Hawaiian island in 1955, indicates that of 698 children born, one third (201) were considered high risk; and of the high-risk children, one third (72) were considered resilient. One third of a birth cohort is a large number, and it must be remembered that this percentage is based on children born nearly a half a century ago and away from mainland United States and its metropolitan areas. The situation today is considered to be even more grim (Garbarino, 1995; Garbarino et al., 1992).

In spite of the condition of today's children's environment, many children manage to survive and even do quite well. Much research has already examined the correlates and causes of psychological and social pathology; now research is targeting those individuals who thrive in spite of risk. It is hoped that, by studying those children and adults who have succeeded in spite of extremely negative circumstances, interventions can be developed and delivered to those in need (Cicchetti & Garnezy, 1993; Consortium on the School-Based Promotion of Social Competence, 1996; Cowen, Wyman, Work, & Iker, 1995; Cowen et al., 1990; Garbarino, 1995; Work, Cowen, Parker, & Wyman, 1990).

THEORETICAL PERSPECTIVES

A prerequisite for the success of any theory is the accurate definition and operationalization of terms. Resilience can be thought of as

an enduring characteristic of the person, a situational or temporal interaction between the person and the context, or a unitary or multifaceted construct, and it can be applied to social, academic, or other settings (Cicchetti & Garmezy, 1993). Some definitions include the following: success in meeting tasks and expectations (Luthar, Doernberger, & Zigler, 1993), the maintenance and orientation of homeostasis and functionally optimal adaptation (Block & Block, 1980), and the ability to thrive in the face of obstacles or adverse circumstances (Gordon, 1996).

Garmezy (1991) provides the most widely accepted framework for understanding resilience. Based on past and current research, this pioneer in the field posits three factors that seem to be found universally in all definitions and research on children and adults and how they deal with and overcome obstacles and hostile environments. The first factor deals with the individual and includes such elements as native intelligence and temperament. The second concerns the family and the degree of support it can give to the child. The third is the external support from persons and institutions outside the individual and the family that can assist both the child and the family. Werner's (1989) three common factors are similar to those of Garmezy (1991). She identifies personality characteristics of the child, emotional integration within the family, and the degree of outside support that the child and family can obtain. Each of these three general factors will be explored individually. It should be emphasized at the outset that, although each factor has identifiable characteristics, there is nothing inherently immutable about them. That is to say, although a child and his or her family may behave in a certain way, both genetic inheritance and the social environment interact to produce the observed behavior (Rutter, 1987, 1996). Disagreements abound on which has primacy in a particular situation, but there is little disagreement over the fact that children's resilience can be explained as an interaction between their genetic makeup and the kind of support they receive.

INDIVIDUAL CHARACTERISTICS

The two most frequently mentioned individual characteristics of resilient children are high intelligence or cognitive ability and an

easy temperament (Cicchetti, Rogosch, Lynch, & Holt, 1993; Eysenck, 1998; Luthar, 1993; Quinton, Pickles, Maughan, & Rutter, 1993; Rutter, 1987, 1996; Wolff, 1995). An above-average intelligence contributes to children's resilience by allowing children to understand what is happening to them, to distinguish between what is controllable and what is not, to choose effective means of coping, and to select and modify more supportive environments (Block & Kremen, 1996; Cederblad et al., 1995; Sameroff et al., 1987; Scarr & McCartney, 1983). Kandel et al. (1988) found high IQ (a useful proxy for intelligence; Jensen, 1998) to offer protection against delinquency for high-risk men. Sameroff et al. (1987) found that high-risk children were 24 times as likely to have an IQ below 85 as were low-risk children. It has been argued that class or race is at least as strongly related to delinquency as IQ is; however, Hirschi and Hindelang (1977) found that IQ has an independent effect on men at high risk of delinquency and that this effect was mediated by school-related variables and attitudes. The theory is that high intelligence leads to more rewards in school (teacher praise, recognition, high grades), and these rewards then serve to increase the student's attachment to the school community. Positive regard for the school's social community, subsequently, decreases instances of antisocial behavior and delinquency (Kandel et al., 1988; White et al., 1989).

High intelligence is not a perfectly protective factor, however, nor does it come without its own peculiar costs. Resilient children of high intelligence, when compared to their nonresilient at-risk peers, seem to suffer more emotional distress and depression (Luthar, 1991; Luthar et al., 1993). It is hypothesized that highly intelligent children are more sensitive to environmental stimulation and therefore suffer greater symptoms of internal stress. Thus, although high intelligence may help a child find a satisfactory solution to a traumatic event, this same intelligence may also leave that child more vulnerable to emotional scarring and the internalization of stress. It is normal for children to fight against negative stressors. Most take the fight outside themselves with aggressive and disruptive behavior, usually to no avail; more resilient children shift the fight away from the outside world to their own internal

mental world. The fight is no less energy depleting, but the results on the child's psyche may be more harmful.

Parenthetically, this unusual finding raises an issue crucial to the identity and identification of resilience. When a child makes it out of a high-crime, low-income neighborhood and enrolls in college, we label that child *resilient*. Yet if Luthar (1991; Luthar et al., 1993) is to be believed, that same child likely is more depressed than a similar but less bright child from the same neighborhood. Depression clearly has debilitating effects (see Ekman & Davidson, 1994, and LeDoux, 1996, for a discussion of the powerful beneficial and harmful effects that both positive and negative emotions can have on individuals) so the high-IQ child should be in worse shape; yet the research indicates that, except for the greater levels of depression, they often fare better than do their lower IQ age mates. No long-term studies have been performed to track the lifespan of the depression, but it is possible that the depression fades with time as the resilient individual adjusts, strategizes, and ultimately takes situation-improving actions.

The other individual characteristic frequently mentioned in the literature is an easygoing temperament. Werner (1989, 1993) states that such a temperament is obvious from infancy, allows the child to engage the world on easier terms, and elicits more positive responses from caregivers. Scarr and McCartney (1983) advance the notion that, although environments obviously affect people's behavior, the reverse is also true. Individuals, through the phenotypic expression of their genotype, modify and even actively select environments that they find to be more conducive to their preferences and talents. Additionally, through their behavior, people can evoke responses that work either for their benefit or their harm (Wolff, 1995). For example, in one study (Smith & Prior, 1995), teacher ratings of students' positive temperament better predicted resilience on academic and social indicators than did ratings of self-esteem, gender, and mother-child warmth ($r^2 = .38$); however, IQ still was the strongest predictor with more than half the variance explained ($r^2 = .55$).

Research has shown that resilient adults typically attribute their status to a dogged determinism, held throughout childhood, that they would conquer their circumstances, that they were people of

worth and value, and that they had the inner resources to succeed (Staudinger, Marsiske, & Baltes, 1993; Watt, David, Ladd, & Shamos, 1995; Werner, 1989, 1993, 1995). The research on locus of control is surprisingly equivocal: Some studies show an internal locus of control contributing to resilience (Cicchetti & Rogosch, 1997; Luthar, 1991; Werner, 1989) whereas others do not (Watt et al., 1995). This is perhaps best understood as a conflation of locus and controllability that much research ignores; that is, just because a perceived cause is deemed to be internal does not necessarily mean that the cause is subject to the person's own influence (Pintrich & Schunk, 2002). The importance of individual characteristics pertinent to resilience cannot be overestimated. Cicchetti and Rogosch (1997) found that for nonmaltreated at-risk children, relationship variables were more important for predicting resiliency, whereas for maltreated at-risk children, individual characteristics were more important.

To summarize, resilient children tend to possess an above-average intelligence and have a temperament that endears them to others and that also does not allow them to succumb to self-pity. High intelligence alone is insufficient for protection against stress; the increased awareness of the miserable circumstances in which resilient children find themselves can serve to exacerbate their misery. What is also needed is a temperament that renders them akin to velvet-covered steel: soft to the touch outside but strong inside to provide necessary support in times of stress. Their intelligence and temperament interact so as to allow them to understand a situation well, seek out coping mechanisms, not feel sorry for themselves (and thus incur a paralyzing emotional effect), and persist in their attempts to survive and survive well.

FAMILY CHARACTERISTICS

When a child manages to thrive in spite of adverse environmental circumstances such as violence in the neighborhood or extreme poverty, it is reasonable to examine the family for clues in explaining the child's resilience. Gribble et al. (1993) focused on this second of the three major resilience factors. They found that parents of stress-resilient children had more positive parental attitudes, were more involved in their children's lives, and provided more and better

guidance. The result was that the stress-resilient children were more securely attached than were stress-affected children. A discriminant function analysis performed by Wyman et al. (1991) showed that seven aggregated variables accounted for 57% of group status. Of the seven, five were direct family effects on the child: caregiver's positive expectations for the child's future, reduced infant separations from caregiver, inductive discipline, father's involvement, and stable family discipline. Other research has confirmed these findings (Wyman et al., 1992).

Even when the parents themselves are a source of stress for the child, the parent-child relationship can still somewhat paradoxically offer protection against stress. Kauffman, Grunebaum, Cohler, and Gamer (1979) studied resilient children of psychotic mothers. Maternal depression was found to be more of a risk factor than was schizophrenia, but children managed to obtain a high level of social competence if they had a warm relationship with their mothers. Apparently, the resilient child was able to distinguish between the mother's problem behavior and her feelings toward her child. Thus, although the psychosis offered risk, relational warmth was demonstrated to be compensatory.

Work by Conrad and Hammen (1993) further dissects the psychosis issue and examines the relationship between children's resilience status and mothers who were categorized as normal, medically ill, suffering from unipolar depression, or suffering from bipolar depression. The research made it clear that resiliency is a very complicated issue. For example, strong friendships with peers served as protective factors for children with medically ill mothers; however, an adult friend was a risk factor for children of unipolar depressed mothers. Maternal competence was a protective factor for children of unipolar depressed mothers but was a risk factor for children of bipolar depressed mothers. The same was true for children whose fathers were healthy and in the home. Thus, it seems clear that it is not enough to point to variables such as maternal depression or paternal involvement and categorize them as risk and protective factors, respectively. Apparently, other factors interact with these that then work together to leave a child resilient or vulnerable to stress.

No serious researcher denies the importance of the microenvironments and macroenvironments as factors in resiliency status; where there is disagreement, however, is in how much individual characteristics based on one's genotype contribute and how much the environment contributes. If a child grows up in a poor, violence-ridden neighborhood and lives in a broken, dysfunctional family and yet manages to thrive, that child is labeled *resilient*. Clues for an explanation of the phenomenon of the child's resilience are sought in the child and in the child's environment. An easy temperament and high intelligence are often cited as factors that serve to protect against or compensate for adverse circumstances. Family warmth and stable significant others (usually adult) are also frequently cited. Yet it is possible that what appears to be resilience is, in fact, not.

Plomin (1989) and Rende and Plomin (1993) distinguish between distal and proximal environmental risks. An abusive parent would be a proximal risk because the abuse directly affects the child, whereas parental lack of education would be a distal risk because it affects family income, kinds and amounts of reading material, and the like that then affect the child.

Additionally, Plomin (1989) and Rende and Plomin (1993) make the claim that there are children who do quite well in spite of being in at-risk families, not because they are resilient but rather because they are not genetically at risk. That is, the phenotypic behavior of high academic and social competence is directly related to a genotype that, given any chance at all, will be expressed. Scarr and McCartney (1983) argue that there is a wide range of environments in which people can thrive and that things are not so delicate that the slightest stressor will condemn a child to a less-than-fulfilling life. There are many environments that are "functionally equivalent" (p. 429), and humans are able to reach their potential, or at least marginal competency, in environments that are less than ideal. Therefore, from the point of view of behavior genetics, a child would be considered resilient if he or she did not exhibit any behavioral abnormalities in spite of a genetic predisposition toward such abnormalities. Perhaps science is a long way from devising tests that can help determine genetic predispositions

one way or the other, but the theory is an intriguing one and should encourage much research.

Against the common wisdom, some researchers question the importance of the family regarding child development. Rowe (1994) cites behavior genetic research in proposing the primacy of individual genotype and nonshared environmental experiences in producing a particular phenotype. According to Rowe, there are three main problems with family socialization theories of development. One, such theories do not account for the presence or effect of genes. Two, borrowing from Scarr and McCartney (1983), people are able both to select and modify their environments. And three, also reminiscent of Scarr and McCartney's theory, whereas the child's development is shaped by how the parents treat and react to the child, it is also true that the child, through his or her own dispositions, evokes certain kinds of treatment and responses from parents, thus reinforcing certain propensities and depressing others.

Baumrind (1993) offers a major critique of the environmental theory of Scarr and McCartney (1983), and by extension, behavior genetics. She argues that because the average expectable environment is a concept poorly defined, it cannot contribute to an understanding of the development of resilience or psychopathology. Additionally, she claims that because percentages of shared as compared with non-shared environment increase as one moves from attitude and observation measures to more traditional IQ and personality measures, it is impossible to be certain just how much each kind of environment is contributing. Finally, she questions the value of heritability estimates that cannot explain the developmental process.

In summary, at the very least, it can be claimed that a good and supportive family can do no harm in helping a child cope with adverse circumstances and that it very probably helps. There is presently much debate about the relative contribution of shared as opposed to unshared environment in the development of personality and how much the environment contributes compared to the contribution of one's genotype. Without making an unsubstantiated statement, it is perhaps best, in light of recent evidence, to claim that the role of the family in the development of resilience in children is most important early in life and that the role of the family declines in importance as the child ages.

EXTERNAL SUPPORT

Enough correlational research has been conducted to substantiate the claim that parental involvement in a child's life can be either a source of risk or resilience depending on the child's own characteristics and how the larger environment interacts with the child and family (Carro et al., 1993; Radke-Yarrow & Brown, 1993). Although the debate continues on the relative importance of the family environment for child development (see Baumrind, 1993; Plomin, 1989; Rende & Plomin, 1993; Rowe, 1994; Scarr & McCartney, 1983), a great deal of research has supported the contention of both Garmez (1991) and Werner (1989) that external support for the child and the family is indispensable for the development of childhood resilience. Wolff (1995), for instance, has found that employment opportunities for high-risk men greatly reduces risk for the children of these men. External support does not simply manifest itself magically; there are causal explanations. Milgram and Palti (1993), while pointing to the oft-cited characteristics of high intelligence and easy temperament to explain a child's resilience, also discuss how such children are superior in locating and maintaining support from their age mates and from adults. It seems as though the individual characteristics of superior cognitive functioning and easy temperament serve as the foundation for the superior social skills that resilient children possess. Their individual qualities make them more attractive to peers and adults, and this attraction allows them greater ease in maintaining close relationships.

Support for the family has been cited as a major discriminating factor in identifying resilient urban children who have experienced major life stresses (Wyman et al., 1991); however, the support must be specific in nature. Carro et al. (1993), when examining parental depression, did not find evidence for any protective effects that social support might have for children. Conrad and Hammen (1993) obtained mixed results for the effects that social support for the child of depressed, ill, or normal mothers would have. In some instances, friendships were a protective factor, and in others, it was a risk factor. It seems that, to be useful for children, social support must include the at-risk children in a central way but also involve the larger family. In other words, it is best when the family as a whole is being supported.

THE NATURE OF RESILIENCE

If one concentrates on examining the characteristics of the resilient child, one might be tempted to view resilience as an innate quality that would allow the child to survive a great many adverse circumstances. If one looks at the child's family and social environment, then an argument can be made that resilience is not so much a quality of the child as it is the interactional processes between the child and the environment. The two positions are not necessarily in conflict, as there is research that supports both points of view. Wolff (1995) summarizes the situation expertly:

Resilience is an enduring aspect of the person. Genetic and other constitutionally based qualities both determine and are in turn modified by life experiences. Good intelligence plays a major part, as does an easy, adaptable, sociable temperament that, together with an appealing appearance, attract positive responses from others which in turn contribute to that inner sense of self-worth, competence and self-efficacy that has repeatedly been identified as a vital component of resilience. The sources of such positive responses are threefold: primary relationships within the family; the network of relationships with adults and children outside the family; and competence and achievement. (p. 568)

Although the three factors of individual characteristics, positive family relationships, and outside support continue to be examined in the literature, attention is shifting toward an attempt to understand other aspects of the nature of resilience. It is becoming clearer to researchers that resilience and risk are multifaceted; that is, they are not unitary in their origin, expression, being, or maintenance.

Masten et al. (1995), in researching both young children and adolescents, found that competence in childhood had three dimensions: school or academic, social, and conduct or behavior. In adolescence, two additional dimensions were found: romantic and occupational. Risks from trauma and adverse circumstances could affect a young child's or adolescent's competence along any one or several of the aforementioned dimensions, with the other dimensions remaining relatively unaffected. The work of Luthar et al. (1993) echoes this concept. They found that children who

exhibited resilient behavior in one domain (teacher-rated school behavior, for example) were not necessarily resilient in another domain (such as school grades or level of depression).

Risk itself is multidimensional (Work et al., 1990). It can be viewed as life events, minor stressors that accumulate with time, specific high-risk factors, low SES, or any combination thereof (Luthar & Zigler, 1991). Masten and Coatsworth (1998) refer to the cumulative nature of risk and the necessary effect this has on the design of interventions. These observations are not unimportant. An accurate description of the nature of risk is crucial to understanding how it affects people, how resilience operates, and how to develop interventions that work in the real world. Because risks are multifaceted in nature, it necessarily follows that resilience too is multi-faceted. Thus, the concept of an overall resilience may have to give way to one that is situational in its operation (Luthar, 1993).

Many researchers are now defining resilience as a process with a dynamic character (Rutter, 1987, 1996). Quinton et al. (1993) describe a resilience that operates both passively, through an increase in a person's ability to withstand traumatic situations, and actively, by shaping the environment so as to minimize the person's interaction with trauma and possibly to leave the negative environment for a more positive one (cf. Scarr & McCartney, 1983). If resilience is not conceived of as a given character trait but rather a capacity that develops as a result of how the person interacts with his or her environment, there should be little evidence of competence with time; that is, protective factors should only diminish the impact of negative consequences. This idea has some research support (Cicchetti & Rogosch, 1997; Egeland, Carlson, & Sroufe, 1993). Egeland et al. found that the effects of extreme risk are cumulative and that they increased with the passage of time. Resilience, or the positive response to extreme risk, would necessarily be under increasingly greater strain as the various risk factors accumulate. In examining middle-aged adults who had overcome extreme stress early in their lives, Watt et al. (1995) noted that in their discussion with the participants there was unanimity on only one issue. All adults interviewed held the belief that their triumphing over adverse

childhood circumstances was not a one-step process; instead, it was an ongoing process that must be chosen by the person constantly, in a variety of circumstances, and with some assistance to nurture the decision. Waxman et al. (1997), in examining motivational and learning environmental differences between resilient and nonresilient Hispanic middle school students, found that the factors such as problem-solving skills, use of time, and social competence, all of which combine to influence overall academic resilience, are themselves subject to intervention and modification. Gordon (1996) contributed the finding that personal and environmental factors associated with resiliency do not change across ethnic groups, although this finding may depend on how resilience and risk were defined and measured. What is considered risk or resilience in one culture may be the norm or rebellion in another.

In seeking to understand how human personality is structured, Block and Block (1980) distinguish between ego control and ego resiliency. Ego control is concerned with the degree of control one has over one's emotions and how such control is modulated. A key aspect of ego control is permeability, or how much one's personality systems' boundaries allow or disallow the passage of forces or tensions on those systems. This factor is measured on a continuous scale with overcontrol and undercontrol at the extremes. Ego resiliency refers to the structures and processes that allow a person to maintain homeostasis and optimize functional adaptation to adverse circumstances. The key concept here is elasticity, the degree to which the boundaries between personality systems change their permeability capability and allow the person to adapt to environmental demands. The scale here is bounded by resiliency or brittleness.

Strong ego development has been found to be a major compensatory factor that remains robust in the face of various stressors and through time (Luthar, 1991). Cicchetti et al. (1993) showed that ego overcontrol was predictive of resiliency in maltreated children. Overcontrol, characterized by suppressed emotionality, empathy, and compliance, permits the stressed child to limit the number of additional problems that need be faced, diminishes their effect and the chances of their growing into larger problems, and perhaps protects them from being targeted

for further incidents of maltreatment and stress (Block & Block, 1980; Cicchetti et al., 1993). Such overcontrol may assist the child in determining what is needed for coping successfully with a difficult environment (Cicchetti & Rogosch, 1997).

Another curious phenomenon associated with resilience is the mediating role of gender. Werner (1989), in her longitudinal study of resiliency among a cohort of people born in 1955 on the Hawaiian island of Kauai, found that boys were more vulnerable than girls to biological insult and caregiver deficits. Women were more at risk during adolescence, and by age 30, the advantage had shifted again with men being at greater risk. Boys have been shown to be at greater risk of developing behavioral and emotional problems when they are exposed to stressful family arrangements (Rutter, 1987, 1996). Boys often do not have a positive same-sex role model in the home as girls do, as many troubled, lower SES families tend to be headed by single mothers. Additionally, boys tend to be treated more harshly than girls in both school and in the home. It is this combination of increased environmental pressure coupled with a more immature neurological and other biological development (vis-à-vis girls' development) that probably best explains the rather robust finding of sex-related differences in risk and resilience.

FOSTERING RESILIENCE IN AN EDUCATIONAL SETTING

Tolan and Dodge (2005) assert that there is a tendency in psychology for "passive reliance on the client to initiate contact" (p. 612). Perhaps this is more of a problem when offering services to adult alcoholics as opposed to troubled children; after all, such adults are not under obligation to obtain these services, whereas children are required to attend school. It would seem that children by and large would be enjoying development and support services because most of them attend public schools for 13 years. However, the mere presence of the child in the school does not guarantee that the child will step forward to apply for these services, and that is

assuming that such services even exist at the school. Essential for attempts at fostering resilience in at-risk students, then, is a proactive (even aggressive?) stance on the part of school personnel to identify such students and involve them in school-based support programs.

According to Katz (1997), the key to developing resiliency in children is opportunities, both plentiful and meaningful. Opportunities to rest from resisting a hostile environment, opportunities to explore in safety and security, opportunities to believe and to dream; all these need to be given to at-risk children if they are to have any chance at all of making it out of their dire circumstances successfully.

One way of providing the opportunity for developing resilience is through religious involvement (Katz, 1997; Werner, 1989, 1993). Many adults who have successfully made their way out of poor environments have cited religious faith as being extremely important in their coming to grips with themselves, their circumstances, and the world, and cited that it has provided a sense of hope for them. Most of the adults who were interviewed by Katz (1997) and Werner (1989, 1993) said that their faith in God was instrumental in their overcoming bad circumstances and maintained that they would not have made it otherwise. Thus, children who are at risk of problems of abuse, violence, drugs, crime, and the like, can potentially be affected positively by the involvement of formal and informal religious organizations in their lives.

This, naturally, presents a problem for the nonsectarian public schools; faculty and staff are in no position to recommend religions, engage in religious acts, or serve as mediators of religious dogma. However, even the public schools can acknowledge that religion exists, that there is evidence of its efficacy (Katz, 1997; Werner, 1989, 1993), and that there are (in all likelihood) a wide variety of local religious organizations of which students (and their families) can avail themselves.

Schools' recommendations to students to avail themselves of outside services are not limited to religious organizations; nonsectarian organizations and programs abound. Tolan, Gorman-Smith, and Henry (2004) report that in one such program, SAFEChildren,

420 inner-city families were assigned either to a control condition or an experimental one in which family-focused preventive interventions and academic tutoring were offered. Although quite weak (the largest effect size was .17), benefits included improved academic performance and better parental involvement. Thus, it would appear that even large-scale, multifaceted interventions might not realize all the benefits for which one hopes and works on.

For good or ill, children spend a great deal of time in school. If the schools are resource poor, short on qualified staff, and/or exist in dangerous neighborhoods, then the development of resilience is likely to be hampered. On the other hand, because schools are places in which children spend so much time, they are ideal locations for the implementation of programs designed to support children and assist them in overcoming environmental stressors (Ross, Smith, Casey, & Slavin, 1995). The Consortium on the School-Based Promotion of Social Competence (1996) argues that schools are unique in that they have students for a great many years, deal with academic, moral, and health issues, and usually enjoy strong community support to succeed in their endeavors. There are concerns, however, about the ability of schools to carry out their charges, because the list of failures of schools to deal with these academic, moral, and health issues seems to grow endlessly (Price, Cowen, Lorton, & Ramos-McKay, 1988; Steinberg, 1996). What apparently works best is when an intervention takes into consideration the personal developmental level of the child and includes all aspects of the school in the intervention. The curriculum should include development of the target skills; the training should be intensive and ongoing (i.e., it should last beyond a simple lesson or even a semester); and the school's adult staff should be convinced of the efficacy of the intervention and be devoted both to the students and to the proper implementation of the intervention program (Consortium on the School-Based Promotion of Social Competence, 1996). Starting early seems to increase the likelihood of developing resilience (Werner & Smith, 1992).

Another point about the development of resilience in children is that it is important to distinguish between programs that seek to protect and programs that aim to reduce risk (Consortium on the School-Based Promotion of Social Competence, 1996). In fostering

protection and reducing risk, researchers and program personnel need to consider attributes of the individual, the family, and the larger community (Garmezy, 1971). Researchers need to analyze both the children at risk and their immediate and larger environments to determine the effectiveness of the intervention, the suitability of the program, and provide information useful for troubleshooting and maintenance of the program (Pless & Stein, 1996; Richters & Martinez, 1993). Wyman, Cowen, Work, and Kerley (1993) were able to demonstrate the medium to nearly strong protective effects of early positive future expectations on outcomes as diverse as depression (Cohen's $d = .5795$), competence (.7949), locus of control (.4344), reading achievement (.7029), school engagement (.5557), and socioemotional adjustment (.5083). (nb. Wyman et al. reported F statistics; the effect size calculations were performed by this author using the statistics in their article.)

Finally, it should be realized that, ultimately, resilience is not a guaranteed outcome even with the most carefully designed and thoroughly researched programs. At best, research can inform the design of interventions; interventions can make attempts at changing human behavior and thinking. But surprises are still likely to be found. Occasionally, children will still sink in the despair of the hostile environment, whereas other children, who perhaps have even fewer resources, might survive and ultimately thrive. The imperative remains nonetheless, but it is always good to be cognizant of the vagaries and difficulties involved with trying to develop rich and full lives in the midst of harsh and toxic environmental stressors (Garbarino, 1995; Janoff-Bulman, 1992).

CONCLUSIONS

A proper understanding of risk and resilience is essential to the design and implementation of policies and programs that attempt to redress some of the effects that community violence, family discord and abuse, and poverty and minority status can have on children. Present research in the origin and development of resilience should inform existing knowledge on risk and psychopathology so that one is not favored or emphasized over the other and therefore lead to

ill-designed programs. In short, personality characteristics of the child interact with small and large environments such as family, friends, school personnel, and the many people in the community to create the conditions that will either foster or inhibit positive growth and development. Powerful and promising new statistical techniques (such as Structural Equation Modeling) allow for the analysis and study of independent variables in both an interactional and causal fashion. This means that future studies can proceed beyond mere correlation (with implied or imagined causation) and actually consider how one variable relates to another, determine the direction of that relationship, and demonstrate how other variables mediate their relationship. Such future studies can greatly aid in assistive program design in that they can clearly demonstrate the primacy of certain variables and can explain the nature of their direct and indirect effects on outcomes of choice.

Another useful study (though one that cannot be performed frequently) is a meta-analysis. The advantage of meta-analysis over a traditional review of literature such as the present article is that it takes the statistics generated in the many studies and equates them; that is, it translates them into a common statistic called an effect size (such as Cohen's *d*). This allows the researcher to cut across studies and arrive at a summary numerical evaluation. However, the meta-analysis technique is constrained by the literature itself; articles not published (because of the bias against publishing non-significant findings) cannot be meta-analyzed. Thus, meta-analysis, oddly enough, often provides a crystal clear view of what is perhaps inherently unrepresentative.

In that vein, all researchers in the research-consuming community would best be served by a more liberal publishing policy, one that permits (or even encourages) publication of studies with non-significant statistical results, provided that proper adherence to research design protocols has been maintained. The advantage here is that what does not work would be as heralded as what does work; and that seems particularly important, given the costs associated with the implementation of interventions in schools and districts with tight budgets.

Efforts to build resilience in school children, although admirable, are certainly faced with large difficulties. Regardless of the program

selected, money is and always will be an issue. Assuming that decision makers select the very best program and have the funds necessary for implementation, there needs to be buy-in from both school personnel and students; without it, the program will neither be implemented fully nor received fully. Finally, the very nature of a program is somewhat at odds with what is known about the nature of resilience. One of the identified three main characteristics of resilience is high intelligence and an even temperament. All argument aside on whether such constructs can be influenced positively by external forces, it is safe to say that it is very difficult to do so. Because these individual characteristics seem to be essential, if it turns out that they are mostly genetic in origin and resistant to intervention, then even the best efforts will succeed only with a minority of students. Such an acknowledgement is hardly defeatist; after all, AIDS research progresses apace, even though the disease remains strongly resistant to attempted cures. It seems certain that, although no one single program or policy is likely to fit every situation or person, enough is known to allow for some degree of tailoring that can allow for the maximum probability of success.

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