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Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study

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Abstract
This article summarizes the major findings of a longitudinal study that traced the developmental paths of a multiracial cohort of children who had been exposed to perinatal stress, chronic poverty, and a family environment troubled by chronic discord and parental psychopathology. Individuals are members of the Kauai Longitudinal Study, which followed all children born in 1955 on a Hawaiian island from the perinatal period to ages 1, 2, 10, 18, and 32 years. Several clusters of protective factors and processes were identified that enabled most of these high-risk individuals to become competent and caring adults. Implications of the findings for developmental theory and social action programs are discussed, and issues for future research are identified.

In 1955, a team of pediatricians, psychologists, psychiatrists, and public health and social workers began a prospective study of the development of all 698 babies born that year on the Hawaiian island of Kauai, the westernmost county of the United States. The principal goals of our study were (a) to document, in natural history fashion, the course of all pregnancies and their outcomes in the entire island community until the surviving offspring had reached adulthood, and (b) to assess the long-term consequences of perinatal complications and adverse rearing conditions on the individuals' development and adaptation to life. A detailed description of the methodology, data base, and results of this study can be found in *Overcoming the Odds: High Risk Children from Birth to Adulthood* (Werner & Smith, 1992).

The men and women whose lives we followed from birth to their mid-30s are a mixture of ethnic groups—most are of Japanese, Filipino, and Hawaiian descent. About half of the cohort (54%) grew up in poverty. They were reared by fathers who were semi- or unskilled laborers on the local sugar and pineapple plantations and by mothers who had not graduated from high school.

We began our study by examining the children's *vulnerability*, that is, their susceptibility to negative developmental outcomes after exposure to serious *risk* factors, such as perinatal stress, poverty, parental psychopathology, and disruptions of their family unit (Werner & Smith, 1977). As our longitudinal investigation progressed, we also looked at the roots of *resiliency* in those children who successfully coped with such biological and psychosocial risk factors and at protective factors that aided in

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the *recovery* of troubled children and youths as they made the transition into adulthood (Werner & Smith, 1989, 1992).

We need to keep in perspective that the majority of the members of this birth cohort were born without complications, after uneventful pregnancies, and grew up in supportive home environments. They led lives that were not unusually stressful, and they coped successfully with the developmental tasks of childhood, adolescence, and young adulthood.

We designated about one-third of the surviving boys and girls in this cohort as high-risk children (n = 201) because they were born into poverty, they had experienced moderate to severe degrees of perinatal stress, and they lived in a family environment troubled by chronic discord, parental alcoholism, or mental illness. Two out of three of these vulnerable children (who encountered four or more such risk factors by age 2) did indeed develop serious learning or behavior problems by age 10 and had mental health problems, delinquency records, and/or teenage pregnancies by the time they were 18 years old.

One out of three of these high-risk children (n = 72), however, grew into competent, confident, and caring young adults. None developed serious learning or behavior problems in childhood or adolescence. As far as we could tell from interviews with them in their senior year in high school and from their records in the community, they succeeded in school, managed home and social life well, and expressed a strong desire to take advantage of whatever opportunity came their way.

In our book *Vulnerable but Invincible* (Werner & Smith, 1989), we contrasted the behavior and caregiving environments of these resilient youngsters to those of their high-risk peers of the same age and gender who had developed serious coping problems in the first two decades of life.

Even as infants, the resilient children had elicited positive attention from family members as well as strangers. At age 1, they were frequently described by their caregivers as "very active," with the girls more often as "affectionate" and "cuddly" and the boys more often as "good natured" and "easy to deal with." The resilient infants also had fewer eating and sleeping habits that were distressing to their parents than did the infants who later developed serious learning or behavior problems.

As toddlers, the resilient boys and girls tended to meet the world already on their own terms. The pediatricians and psychologists, who examined them independently at 20 months, noted their alertness and autonomy, their tendency to seek out novel experiences, and their positive social orientation. They were more advanced in communication, locomotion, and self-help skills than the other high-risk children, who later developed serious coping problems.

In elementary school, teachers reported that the resilient children got along well with their classmates. They had better reasoning and reading skills than the children who later developed problems, especially the girls. Though not unusually gifted, the resilient children used whatever skills they had effectively. Both parents and teachers noted that they had many interests and engaged in activities and hobbies that were not narrowly sex typed. Such activities provided them with solace in adversity and a reason to feel proud.

By the time they graduated from high school, the resilient youths had developed a positive self-concept and an internal locus of control. On the California Psychological Inventory (Gough, 1969), they displayed a more nurturant, responsible, and achievement-oriented attitude toward life than their high-risk peers, who had developed problems in their teens. The resilient girls, especially, were more assertive and independent than the other females in this cohort.

Most resilient boys and girls had grown up in families with four or fewer children, with a space of 2 years or more between themselves and their next sibling. Few had experienced prolonged separations from their primary caretaker during the 1st year of life. All had the opportunity to establish a close bond with at least one caregiver from whom they received plenty of positive attention when they were infants.

Some of this nurturing came from substi-

tute parents, such as grandparents or older siblings, or from the ranks of regular babysitters. Such substitute parents also played an important role as positive models of identification. Maternal employment and the need to take care of younger siblings contributed to the pronounced autonomy and sense of responsibility noted among the resilient girls, especially in households where the father was absent. Resilient boys were often first-born sons who did not have to share their parents' attention with many additional children. There were some males in the family who could serve as a role model, if not the father, then a grandfather, older cousin, or uncle. Structure and rules, and assigned chores, were part of their daily routine in adolescence.

The resilient boys and girls also sought and found emotional support outside of their own family. They tended to have at least one, and usually several, close friends, especially the girls. They relied on an informal network of kin and neighbors, peers and elders, for counsel and support in times of crises. Many had a favorite teacher who became a role model, friend, and confidant for them.

Participation in extracurricular activities played an important part in the lives of the resilient youths, especially activities that were cooperative enterprises, such as 4-H and/or the YMCA and YWCA. For others, emotional support came from a youth leader or from a minister or church group. With their help, the resilient children acquired a faith that their lives had meaning and they had control over their fate.

When we interviewed these young men and women at age 18, they were in a transitional phase of their life cycle. They were about to graduate from high school, to leave their parental home, and to enter their first full-time job. Their relationships with members of the opposite sex were still tentative and did not involve any serious long-term commitments. With the exception of the teenage mothers, they had not yet been confronted with the demands of childbearing and child-rearing. The period of maximum risk for mental breakdown was still ahead of them.

The Adult Follow-up

Our most recent follow-up at age 32 finds these same men and women at a stage in life that provides them an opportunity to reappraise and modify the initial mode of adult living they established in the previous decade. The *age-30 transition period* is biologically the peak of adulthood, a time of great energy, but also among the most stressful of the adult life cycle. The central components of the adult life structure being reappraised are work life, marriage, and parenthood.

The main objectives of our most recent inquiry were, first, to trace the long-term effects of childhood adversity on the adult lives of the men and women who had been exposed to perinatal stress, poverty, parental discord, and psychopathology and, second, to examine the long-term effects of protective factors and processes that led most to a successful adaptation in adulthood (Werner & Smith, 1992).

Perspectives and procedures

We used two perspectives to assess the quality of adult adaptation of the men and women in our study. One was the perspective gained from a semistructured interview (questionnaire) that focused on the developmental tasks of early adulthood. The responses to the interview questions permitted us to make some judgment on how well a given individual had negotiated Erikson's stages of identity, intimacy, and generativity.

A second complementary perspective on the quality of adult adaptation of the men and women in this cohort was gleaned from their record(s) in the community. From the District and Circuit courts on Kauai, in Honolulu, and on the other islands (Maui and Hawaii), we obtained information on every member of the 1955 birth cohort residing in the State of Hawaii who was convicted of a crime, involved as a defendant in a civil suit, or whose marriage ended in divorce since our last follow-up. From the State Department of Mental Health, we ascertained information on every member of the 1955 birth cohort who received in- or

outpatient treatment for mental health problems. The U.S. Veterans Administration provided us with information on cohort members who had served in the Armed Forces and who had received disability payments or educational benefits.

Our criteria for rating the quality of adult adaptation were based on these two perspectives: the individual's own account of success and satisfaction with work, family and social life, and state of psychological well-being; and on their records in the community. Areas included in the evaluation were achievements in school and/or work; relationships with spouse or mate; relationships with offspring; relationships with parents, in-laws, and siblings; relationships with peers; and the degree of overall satisfaction an individual expressed with his or her present state in life. A criminal record, a record of spouse or child abuse or delinquent child support, and a record of chronic substance abuse and/or psychosomatic or psychiatric disorders were considered signs of unsuccessful adaptation to adult life (see Appendix II in Werner & Smith, 1992).

The High-Risk Children as Adults

We were fortunate to reach a relatively high proportion of the original high-risk sample in our cohort. We have data in adulthood on 88% of the resilient high-risk individuals, 90% of the teenage mothers, and 80% of the high-risk youths who had records of serious mental health problems and/or delinquencies.

The resilient children in their mid-30s

With only two exceptions (both offspring of depressed mothers), the resilient children had grown into adults whose educational and vocational accomplishments exceeded those of their high-risk peers and were equal to those of the low-risk children in the cohort who had grown up in more affluent, secure, and stable environments. Personal competence and determination, support from a spouse or mate, and reliance on faith and prayer were the shared qualities that characterized the resilient children in their mid-30s.

As a group, they worked and loved in contexts far different than the traumatic domestic scenes that had characterized their childhoods. Those who were married (76% of the women, 60% of the men) had strong commitments to intimacy and sharing with their partners. Those who had children (65% of the women, 56% of the men) had a strong sense of generativity that enabled them to be caring parents who respected the individuality and encouraged the autonomy of their offspring.

There was a persistent need, however, for detachment from parents and siblings whose domestic and emotional problems still threatened to engulf them. The balancing act between forming new attachments to loved ones of their choice and loosening of old family ties that evoked painful memories had exacted a toll in their adult lives. Among some men in this group, there was a reluctance to make definite long-term commitments to a mate; some of the women exhausted themselves in the balancing act among the demands of marriage, motherhood, and striving for success in a career. The price they paid varied from stress-related health problems such as migraines and backaches (reported by 55% of the men and 41% of the women) to a certain aloofness that characterized their interpersonal relationships.

The teenage mothers in their mid-30s

On the whole, the situation of the 28 teenage mothers in our cohort had improved significantly over time. In almost all respects, except for marital stability, they were better off than at age 18. By age 32, 60% of the adolescent mothers on Kauai had obtained additional schooling beyond a high school diploma.

Their employment picture was much more positive as well. Only two of the women, both mothers of young preschool children, were temporarily unemployed. The employment experience of the adolescent mothers on Kauai refutes the popular

stereotype of teenage mothers as chronic welfare recipients. Their rate of employment rose steadily during the course of our study, and their levels of employment increased with educational opportunities sought out by them once their own children were in school.

The paths that had led to improvement for the majority of our teenage mothers were similar to those reported by Furstenberg, Brooks-Gunn, and Morgan (1987) for a much larger sample of black adolescent mothers who grew up in metropolitan Baltimore. The development of the women's personal resources, their competence and motivation, the support of kith and kin, and a stable marriage all contributed to positive changes in their life trajectories.

Delinquents with and without a record of adult crime

Most of the 103 delinquent youths in this birth cohort did not go on to an adult criminal career. Three-fourths of the males and 90% of the females with a record of juvenile offenses avoided arrest upon reaching adulthood. This was especially true for those with only one or two offenses before age 18.

The majority of the adult crimes in this cohort were committed by a small group of juvenile offenders with an average of four or more arrests whose delinquent career had begun in their early teens and who had been considered "troublesome" by both their parents and their teachers at age 10.

The presence of an intact family unit in childhood, and especially in adolescence, was a major protective factor in the lives of delinquent youths in this birth cohort who did not commit any offenses in early adulthood. Only one out of four of this group grew up in a home where either the mother or the father were absent for prolonged periods of times because of separation, desertion, or divorce. In contrast, five out of six among the delinquents who went on to commit adult crimes came from families where one parent was absent for prolonged periods of time during their teens.

Police and court records also revealed that among the delinquent youths who did not go on to a criminal career there was more active involvement by the parents or other elders (grandparents, aunts) in their rehabilitation process. Foster home placement and the Hawaii Youth Correctional Facility did not prove to be adequate parent substitutes for the persistent offenders in this group. For some, however, a promising alternative appeared to be enlistment in the military or a marriage to a stable spouse.

Our findings on Kauai, with a Pacific Asian sample, are very similar to those reported by Wolfgang, Thornberry, and Figlio (1987) from two cohorts of black and white males born in Philadelphia in 1945 and 1958. Both studies found that, on the average, the earlier an offender started, the more juvenile *and* criminal offenses he accumulated.

Troubled youth in their early 30s

Only a minority of the 70 individuals with serious mental health problems in their teens were still in need of mental health services by the time they reached their early 30s; however, a higher proportion of males than females with mental health problems in their teens had grown into adults who had difficulties finding and keeping a job, who had marriages that ended in divorce, who were delinquent in spouse and child support, and who had criminal records. Only about one-third of the men and women who had been identified as having serious mental health problems in this cohort received some form of mental health care in adolescence or young adulthood.

A significant minority among the individuals with mental health problems in this cohort (one out of five men, one out of three women) had converted to fundamentalist religions that assured them salvation, security, and a sense of mission. Prominent among them were the Jehovah's Witnesses and, to a lesser extent, the Latter Day Saints. By far the most frequently mentioned source of support in times of difficulties was a supportive spouse or close

friend. Nearly half of the men and two-thirds of the women with mental health problems in their youth reported that their spouses had helped them most in dealing with difficulties and stresses in their adult lives. Two-thirds of the men and half of the women also relied on the emotional support of close friends.

Overall, the prognosis for youths who were shy and lacked confidence was considerably better than for youths who displayed antisocial behavior or for youths who had parents with schizophrenia or chronic depression *and* who had been exposed to serious perinatal trauma.

Approximately one out of six (18%) in this cohort, however, became troubled adults who had serious coping problems that included at least two of the following conditions: a broken marriage, a criminal record, chronic mental health problems, and a poor self-concept. Two-thirds of these individuals had been high-risk youth who had been exposed to poverty and family disorganization since early childhood and who subsequently developed a record of school failure, repeated delinquencies, and/or mental health problems. Our study of Asian Americans on Kauai and Magnusson's (1988) study of urban Swedish males are consistent in their findings that individuals who are characterized by *several* problem areas at an early age are more stable in their patterns of maladjustment up into adulthood than are persons who have problems in a *single* area.

Links Between Protective Factors and Successful Adult Adaptation in High-Risk Children and Youths

A major objective of our follow-up into adulthood was to document how a chain of protective factors, linked across time, afforded vulnerable children and teenagers an escape from adversity and contributed to positive outcomes in their adult lives.

We used latent-variables path analyses (Lohmöller, 1984) to examine the links between protective factors in the individual and outside sources of support in childhood and adolescence that led to successful adult adaptation (see Werner and Smith, 1992, Appendix I, pp. 240–245, for a detailed account of our analysis and the path diagrams).

Several clusters of protective factors appeared in the records and interviews of the high-risk children who made a successful adaptation in adult life. Cluster 1 included temperamental characteristics of the individual that helped him or her to elicit positive responses from a variety of caring persons. Cluster 2 included skills and values that led to an efficient use of whatever abilities they had: realistic educational and vocational plans, and regular household chores and domestic responsibilities. Cluster 3 included characteristics and caregiving styles of the parents that reflected competence and fostered self-esteem in the child. Cluster 4 consisted of supportive adults who fostered trust and acted as gatekeepers for the future. Among these "surrogate" parents were grandparents, elder mentors, youth leaders, and members of church groups. Finally, there was the opening of opportunities at major life transitions, from high school to the work place, from civilian to military life, from single state to marriage and parenthood, that turned the trajectory of a significant proportion of the high-risk children on the path to normal adulthood. Among the most potent forces providing a second chance for such youths were adult education programs in community colleges, voluntary national service, and/or an intrinsic religious orientation.

When we examined the links between protective factors within the individual and outside sources of support or of stress, we noted a certain continuity that appeared in the life courses of the high-risk men and women who successfully overcame a variety of childhood adversities. Their individual dispositions led them to select or construct environments that, in turn, reinforced and sustained their active, outgoing dispositions and rewarded their competencies. In spite of occasional deviations during transitional periods such as adolescence, their life trajectories revealed cumulative interactional

continuity. These continuities have also been demonstrated in other cohorts of high-risk individuals followed into adulthood–for instance, in the life course of shy and ill-tempered white children in the Berkeley Guidance Study (Caspi, Elder, & Bem, 1988) and in the life trajectories of the Black teenage mothers followed by Furstenberg et al. (1987).

There was, for example, a significant positive link between an "easy" infant temperament and the sources of support available to the individual in early and middle childhood. Active and sociable babies, without distressing sleeping and feeding habits, tended to elicit more positive responses from their mothers at age 1 and from alternate caregivers by age 2 than did shy and "difficult" babies. In middle childhood, such children tended to rely on a wider network of caring adults both *within* and *outside* the family circle.

Positive parental interactions with the infant and toddler were, in turn, associated with greater autonomy and social maturity at age 2 and with greater scholastic competence at age 10. "Difficult" temperament traits in infancy, in contrast, were moderately linked with behavior problems in the classroom and at home at age 10 and, in turn, generated fewer sources of emotional support during adolescence.

Scholastic competence at age 10, however, was positively linked with the number of sources of help that the teenager attracted, including support from teachers and peers as well as from family members. Scholastic competence at age 10 was also positively linked with a sense of self-efficacy (self-esteem, internal locus of control) at age 18. A greater sense of self-efficacy at age 18 was, in turn, linked to less distress and emotionality for the high-risk men at age 32 and generated a greater number of sources of emotional support for the high-risk women in early adulthood, including support from a spouse or mate.

Parental competence, as manifested in the educational level of the opposite sex parent (fathers for women, mothers for men) also proved to be a significant protective factor in the lives of the men and women on Kauai who grew up in childhood poverty. The majority of the immigrant parents in this birth cohort had only 8 years of less of formal education, but each additional grade completed strengthened the link between parental and child competence–especially graduation from high school. Better educated parents had more positive interactions with their children in the 1st and 2nd years of life and provided more emotional support for their offspring during early and middle childhood—even when the family lived in poverty. Parental education was also positively linked to the infant's health and physical status by age 2.

There were also significant positive links between parental educational level and the child's scholastic competence at age 10: one path was direct, the other was mediated through the child's health and physical status. Better educated parents had children with better problem-solving and reading skills, but they also had healthier children with fewer handicaps and absences from school due to repeated serious illnesses.

While parental competence and the sources of support available in the childhood home were modestly linked to the quality of adult adaptation, they made less of a direct impact in adulthood than the individual's competencies, degree of self-esteem and self-efficacy, and temperamental dispositions. Many resilient high-risk youths left the adverse conditions of their childhood homes (and their island community) after high school and sought environments they found more compatible. In short, they picked their own niches (Scarr & McCartney, 1983).

Individual dispositions versus outside sources of support

We noted, however, that protective factors *within* the individual (such as temperament, cognitive skills, self-esteem, and locus of control) tended to consistently make a greater impact on the quality of adult coping for the high-risk females than the high-risk males. *Outside* sources of support

tended to make a greater difference in the lives of the high-risk men than the high-risk women.

In infancy, the educational level of the mother, the proportion of positive maternal interactions observed during the developmental examination at age 2, and a rating of family stability (from birth to age 2) predicted successful adult adaptation better for high-risk males than for high-risk females. Behavior characteristics of the 1-year-old infant and the 2-year-old toddler (i.e., an engaging, sociable temperament) predicted successful adult adaptation better for high-risk females than for high-risk males.

In middle childhood, the emotional support provided by the family (between ages 2 and 10), the number of children in the family, and the number of adults outside of the household with whom the youngster liked to associate were more potent predictors of successful adult adaptation for the high-risk boys than the high-risk girls. For the high-risk girls, the best predictors of a successful adaptation in early adulthood were a (nonverbal) measure of problem-solving skills at age 10 and the role model of a mother who had graduated from high school and who was steadily employed.

In late adolescence, the availability of a teacher as a mentor or role model and the assignment of regular household chores and responsibilities were better predictors of successful adult adaptation for high-risk men than for high-risk women. A high self-esteem rating, an internal locus of control, and realistic educational and vocational plans were better discriminators for high-risk women than for high-risk men who coped successfully with the demands of adult life.

Implications for Developmental Theory

Our findings fit into the framework of a number of complementary developmental models. The perspectives we found most useful in interpreting our data are the structural-behavioral model of development by Horowitz (1987) and the theory of genotype → environment effects by Scarr and McCartney (1983).

Horowitz's structural-behavioral model of development assumes that the adequacy of development of an individual in a particular behavioral domain is the result of individual organismic factors acting in relation to aspects of the environment that facilitate or impede development at any given period of the life cycle. As her model would suggest, we noted a range of relative resiliency or vulnerability in the face of adverse environmental conditions that changed at different points of the life cycle—for example, at the onset of adolescence or in the transition to adulthood. Some children drew consistently on constitutional resources that allowed them to overcome adverse experiences relatively unscathed. Others went through a period of reorganization after a troubled adolescence that changed their place on the continuum from vulnerability to resiliency. The *transaction across time* between constitutional characteristics of the individual and aspects of the caregiving environment that were supportive or stressful determined the quality of adult adaptation in different domains—at work, in interpersonal relationships, and in the person's overall satisfaction with life.

Our findings also lend some empirical support to Scarr and McCartney's (1983) theory about how people *make* their own environment. They proposed three types of genotype → environment effects on human development: a *passive* kind, through environments provided by biologically related parents; an *evocative* kind, through responses elicited by the individual from others; and an *active* kind, through the selection of different environments by different people. In line with their propositions, we noted that over time there was a shift from passive to active genotype → environment effects, as the youths and young adults in our study left stressful home environments and sought extrafamilial environments (at school, at work, in the military) that they found more compatible and stimulating. Genotype → environment effects of the evocative sort tended to persist throughout

the different life stages we studied, as individuals elicited differential responses from other people (parents, teachers, peers) based on their physical characteristics, temperament, and intelligence.

Above all, our findings fit well into the framework of the emerging field of developmental psychopathology, an approach that stresses the reciprocal interplay between normal developmental theory and findings derived from studies of high-risk populations (Cicchetti & Toth, 1992). We agree with Cicchetti (in press) that the study of resiliency holds considerable promise for the development of intervention programs. By examining the processes that contribute to positive adaptation in situations that more typically result in maladaptations, we should be better able to devise ways of promoting positive outcomes in high-risk children and youths.

Implications for Social Action

Rutter (1987) reminded us that if we want to help vulnerable youngsters, we need to focus especially on the *protective processes* that bring about changes in life trajectories from risk to adaptation. He included among them (a) those that reduce the risk impact, (b) those that reduce the likelihood of negative chain reactions, (c) those that promote self-esteem and self-efficacy, and (d) those that open up opportunities. We have seen these processes at work among the resilient children in our study and among those youths who recovered from serious coping problems in young adulthood. They represent the essence of any effective intervention program, whether by professional or volunteers.

We noted, for example, that structure and rules in the household reduced the likelihood that youths committed juvenile offenses, even when they lived in a delinquency-prone environment, and that children of parents with chronic psychopathology could detach themselves from the discord in their household by spending time with caring adults outside the family circle. Both processes altered their exposure to the potent risk conditions in their homes. In other cases, the negative chain reactions following the intermittent hospitalizations of psychotic or alcoholic parents, or of divorce, were buffered by the presence of grandparents or older siblings who acted as substitute parents and provided continuity in care.

The promotion of competence and self-esteem in a young person is probably one of the key ingredients in any effective intervention process. We saw, for example, how effective reading skills by Grade 4 were one of the most potent predictors of successful adult adaptation among the high-risk children in our study. More than half of the school failures detected at age 10 were due to deficiencies in that skill. Such children profited substantially from short-term remedial work in the first three grades by teachers' aides and peer tutors at a critical period when achievement motivation is stabilized.

Self-esteem and self-efficacy were derived not only from academic competence. Most of the resilient children in our high-risk sample were not unusually talented, but they took great pleasure in interest and hobbies that brought them solace when things fell apart in their home lives. They also engaged in activities that allowed them to be part of a cooperative enterprise, whether being cheerleader for the home team or raising an animal for the 4-H Club.

Self-esteem and self-efficacy also grew when youngsters took on a responsible position commensurate with their ability, whether it was part-time paid work, managing the household when a parent was incapacitated, or, most often, caring for younger siblings. At some point in their young lives, usually in middle childhood and adolescence, the youngsters who grew into resilient adults were required to carry out some socially desirable task to prevent others in their family, neighborhood, or community from experiencing distress or discomfort. Such acts of *required helpfulness* (Rachman, 1979) can also become a crucial element of intervention programs that involve high-risk youth in community service.

Most of all, self-esteem and self-efficacy were promoted through supportive relationships. The resilient youngsters in our study *all* had at least one person in their lives who accepted them unconditionally, regardless of temperamental idiosyncracies, physical attractiveness, or intelligence. Most established such a close bond early in their lives, if not with a parent, then with another family member—a grandparent or favorite aunt or uncle. Some of the high-risk youths who had problems in their teens, but staged a recovery in young adulthood, gained a more positive self-concept in the context of an intimate relationship with a spouse or mate. The experience from intergenerational mentoring programs also suggest that a close one-to-one relationship with an unrelated elder can foster self-esteem in a troubled child or youth (Freedman, 1993). An essential aspect of the encounter is that the youth feels that he or she is special to the other person.

One of the most important lessons we learned from our adult follow-up was that *the opening up of opportunities* led to major turning points in the lives of high-risk individuals as they entered their 20s and early 30s. Our findings at age 32 indicates that earlier events in the lives of high-risk children and youths are not the only ones to affect their later adjustment to the world of work, marriage, and parenthood. Several routes out of poverty and despair in later life were identified in our study of the Asian American youths on Kauai.

Among the most potent forces for positive change for high-risk youths on Kauai in adulthood were education at community colleges, educational and vocational skills acquired during service in the Armed Forces, and active involvement in a church or religious community.

Attendance at community colleges and enlistment in the Armed Forces were also associated with geographical moves for many of the high-risk youths. Both settings provided them with an opportunity to obtain educational and vocational skills that were instrumental in moving them out of a context of poverty into skilled trades and middle-class status.

Community colleges and courses on Army, Navy, and Air Force bases as well as on board ship for some of the young sailors, also offered remedial work that allowed high school dropouts to take the General Education Development Test. Military service turned out to be a constructive option for many delinquent youths in our cohort. The majority utilized the educational benefits they earned both during and after the enlistment period. Military service also provided them with opportunities for personal growth in a structured setting and a chance to take on responsibilities that enhanced their self-esteem.

Involvement in church activities and a strong faith provided meaning to the adult lives of many high-risk youths. Such a faith was tied to identification with fundamentalist religious groups for a significant minority who had been troubled by mental health problems in their teens. Participation in their communal activities provided structure for their lives and assured them salvation, security, and a sense of mission in an "alien world."

However, for the majority of the men and women in this cohort faith was not tied to a specific formal religious affiliation but, rather, to confidence in some center of value. Their faith enabled them to perceive the traumatic experiences of their childhood or youth constructively, even if they caused pain and suffering.

The central component in the lives of the resilient individuals in this study that contributed to their effective coping in adulthood appeared to be a feeling of confidence that the odds can be surmounted. Some of the luckier ones developed such hopefulness early in their lives, in contact with caring adults. Many of their troubled peers had a second chance at developing a sense of self-efficacy and self-esteem in adulthood, sometimes even by virtue of apparent chance encounters with a person who opened up opportunities and gave meaning to their lives.

We need to keep in mind that our research on individual resilience and protective factors has focused on children and youths "who pulled themselves up by their own bootstraps," with informal support from kith and kin, not children who were recipients of intervention services. Yet, there are some lessons these young people can teach us about the need for setting priorities, about critical time periods for intervention, and about the need for a continuum of care and caring. Cicchetti (in press) argued persuasively that empirical findings from the evaluation of such preventive interventions can challenge or affirm the tenets of our theories of normal development.

Our examination of the long-term effects of childhood adversity and of protective factors and processes in the lives of high-risk youths has shown that some of the most critical determinants of adult outcome are present in the first decade of life. It is also apparent that there are large individual differences among high-risk children in their responses to both negative and positive circumstances in their caregiving environment.

Our findings alert us to the need for setting priorities, to choices we must make in our investment of resources and time. Intervention programs need to focus on children and youths who appear *most* vulnerable because they lack some of the essential personal resources and/or social bonds that buffer chronic adversity or stress. Among them are the increasing numbers of preterm survivors of neonatal intensive care, the offspring of parents with severe psychopathology (chronic substance abuse, affective disorders, and schizophrenia), maltreated children reared by isolated single parents with no roots in a community, and preadolescents with conduct disorders who have poor reading skills. From a longitudinal perspective, these youngsters appear most at risk of developing serious coping problems in adulthood—especially if they are boys.

Assessment and diagnosis—the initial part of any intervention program, whether preventive or ameliorative—need to focus not only on the risk factors in the lives of these children, but also on the protective factors. These include competencies and sources of informal support that already exist in the extended family, the neighborhood, and the community at large and that can be utilized to enlarge a child's repertoire of problem-solving skills and his or her self-esteem.

Our own research and that of our American and European colleagues (Garmezy & Rutter, 1983; Werner, 1990) who have followed resilient children into adulthood has repeatedly shown that, if a parent is incapacitated or unavailable, other persons in a youngster's life can play such an enabling role, whether they are grandparents, older siblings, caring neighbors, family day-care providers, teachers, ministers, youth workers in 4-H or the YMCA/YWCA, Big Brothers or Big Sisters, or elder mentors.

Such informal and personal ties to kith, kin, and community are preferred by most children and families to impersonal contacts with formal bureaucracies. These ties need to be encouraged and strengthened, not weakened nor displaced, by legislative action and social programs.

A Closing Caveat is in Order!

Most studies of risk and resiliency undertaken during the past decade have focused on the development of children who live in urban, industrialized societies where parents have options to pursue different child-rearing philosophies and techniques, where children are expected to spend some 10–12 years in compulsory schooling, and where much of their socialization is undertaken by a succession of strangers who prepare them for entry into a competitive economy that prizes acquisitiveness, assertiveness, and mobility and values a person's control over his or her social and physical environment. Future research on risk and resilience in children and youth needs to look more systematically at other "developmental niches" that characterize the interface of chid and culture (Super & Harkness, 1986). The

physical and social settings in which children live, the customs of childcare and sex role socialization, and caregivers' beliefs concerning the nature and needs of children vary greatly in those parts of the world where five out of every six children are born today: in Asia, the Middle East, Africa, and Latin America. So do the risk factors that increase the vulnerability and challenge the resiliency of children.

Due to the vagaries of contemporary wars and changing immigration laws, the United States sees today a virtual explosion of young people who seek refuge and a chance for better opportunities. In California, *each year* some 1 million young immigrants arrive from Latin America, Southeast Asia, and the Middle East whose resilience has been severely tested by civil wars in El Salvador, Guatemala, and Honduras and by political persecution in Southeast Asia and the Middle East. Among them are the children of the Vietnamese boat people who survived pillage and rape at sea, the Highland Hmong, and Cambodian teenagers who witnessed the holocaust of the Pol Pot regime when they were young children. There is a lot we can learn from these resilient survivors!

Their life stories inform us about individual dispositions, sources of support, and protective mechanisms that transcend cultural boundaries and operate effectively in a variety of high-risk contexts. However, we also need to examine the price exacted from such children and youth – for some protective attributes may promote positive adaptation in one context and have negative effects in another (Masten, 1990). The cost and benefits for men and women will vary with the prevailing values and role expectations of a given culture.

The individuals in our study who overcame the odds and grew into competent and caring adults had a special need for detachment. In some ways, they had learned to keep the memories of their childhood adversities at bay by being in the world but not of it. When they told their life stories, however, it was usually without rancor, but with a sense of compassion and, above all, with optimism and hopefulness. The rediscovery of the healing powers of hope in the stories of individual lives may be the most precious harvest of those who venture forth into research on risk, resilience, and human development. Such hopefulness sustains us as we examine the "midlife transition" of the men and women in this cohort – on the occasion of their twentieth high school reunion.

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