Resilience and Recovery: Findings from the Kauai Longitudinal Study

For many years mental health professionals tended to focus almost exclusively on the negative effects of biological and psychosocial risk factors by reconstructing the life histories of individuals with persistent behavior disorders or serious emotional problems. This retrospective approach created the impression that a poor developmental outcome is inevitable if a child is exposed to trauma, parental mental illness, alcoholism, or chronic family discord, since it examined only the lives of the "casualties," not the lives of the successful "survivors."

During the last two decades of the 20th century, our perspective has begun to change. Longitudinal studies that have followed individuals from infancy to adulthood have consistently shown that even among children exposed to multiple stressors, only a minority develop serious emotional disturbances or persistent behavior problems. Their findings challenge us to consider the phenomenon of *resilience*, a dynamic process that leads to positive adaptation, even with a context of adversity (Luthar, 2003).

Only about a dozen longitudinal studies have examined this phenomenon over extended periods of time—from infancy to adulthood. The Kauai Longitudinal Study is the only study to date that has examined development from birth to midlife. The study explores the impact of a variety of biological and psychosocial risk factors, stressful life events, and protective factors on a multi-racial cohort of 698 children born in 1955 on the Hawaiian island of Kauai, the westernmost county in the U.S.A.

In the Kauai study, a team of mental health workers, pediatricians, public health nurses, and social workers monitored the development of all children born on the island at ages 1, 2, 10, 18, 32, and 40 years. We chose these ages because they represent stages in the life cycle that are critical for the development of trust, autonomy, industry, identity, intimacy, and generativity (Werner & Smith, 1982; 1992; 2001).

Some 30% of the survivors (n=210) in our study population were born and raised in poverty, had experienced pre- or perinatal complications; lived in families troubled by chronic discord, divorce, or parental psychopathology; and were reared by mothers with less than 8 grades of education. Two-thirds of the children who had experienced four or more of such risk factors by age two developed learning or behavior problems by age 10 or had delinquency records and/or mental health problems by age 18.

However, one out of three of these children grew into competent, confident and caring adults. They did not develop any behavior or learning problems during childhood or adolescence. They succeeded in school, managed home and social life well, and set realistic education-

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al and vocational goals and expectations for themselves. By the time they reached age 40, not one of these individuals was unemployed, none had been in trouble with the law, and none had to rely on social services. Their divorce rates, mortality rates and rates of chronic health problems were significantly lower at midlife than those of their same sex peers. Their educational and vocational accomplishment were equal to or even exceeded those of children who had grown up in more economically secure and stable home environments. Their very existence challenges the myth that a child who is a member of a so-called "high-risk" group is fated to become one of life's losers.

Resilience in the Formative Years

Three clusters of protective factors differentiated the resilient boys and girls who had successfully overcome the odds from their high-risk peers who developed serious coping problems in childhood or adolescence.

1. Protective factors within the individual. Even in infancy, resilient children displayed temperamental characteristics that elicited positive responses from their caregivers. At age one, their mothers tended to characterize them as active, affectionate, cuddly, good-natured, and easy to deal with; at age two, independent observers described the resilient toddlers as agreeable, cheerful, friendly, responsive, and sociable. They were more advanced in their language and motor development, and in self-help skills than their peers who later developed problems.

By age 10, the children who succeeded against the odds had higher scores on tests of practical problem-solving skills and were better readers than those who developed behavior or learning problems. They also had a special talent that gave them a sense of pride, and they willingly assisted others who needed help. By late adolescence, they had developed a belief in their own effectiveness and a conviction that the problems they confronted could be overcome by their own actions. They had more realistic education and vocational plans, and higher expectations for their future than did their peers with coping problems.

2. Protective factors in the family. Children who succeeded against the odds had the opportunity to establish, early on, a close bond with at least one competent, emotionally stable person who was sensitive to their needs. Much of this nurturing came from substitute caregivers, such as grandparents, older siblings, aunts, and uncles. Resilient children seemed to be especially adept at "recruiting" such surrogate parents.

Resilient boys tended to come from households with structure and rules, where a male served as a model of identification, and where there was encouragement of emotional expressiveness. Resilient girls tended to come from families that combined an emphasis on independence with reliable support from a female caregiver. The families of these children tended to hold religious beliefs that provided some stability and meaning in their lives.

3. Protective factors in the community. Resilient youngsters tended to rely on elders and peers in their community for emotional support and sought them out for counsel in times of crisis. A favorite teacher was often a positive role model, so were caring neighbors, elder mentors, parents of boy- or girlfriends, youth leaders, ministers, and members of church groups.

Recovery in Adulthood

One of the most striking findings in our follow-up studies done in adulthood (at ages 32 and 40) was that most of the youth who had developed serious coping problems in adolescence had staged a recovery by the time they reached midlife. This was true for the majority of the "troubled teens," but more so for the females than the males.

Overall, the "troubled" teenagers had slightly higher mortality rates by age forty (4.4%) than their resilient peers (3.3%) and the "low-risk" members of the same birth cohort (2.8%), with more fatalities due to accidents and AIDS. The majority of the survivors, however, had no serious coping problems by the time they reached midlife. They were in stable marriages and jobs, were satisfied with their relationships with their spouses and children, and were responsible citizens in their community.

Several turning points led to lasting positive shift in the life trajectories among the high-risk men and women in our cohort who had been troubled teenagers. These changes took place after they had left high school and without the benefit of planned intervention by professional "experts." One of the most import lessons we learned from our follow-up in adulthood was that the *opening of opportunities* in the third and fourth decade of life led to enduring positive changes among the majority of teenage mothers, the delinquent boys, and the individuals who had struggled with mental health problems in their teens.

Among the most potent forces for positive change for these youth in adulthood were continuing education at community colleges and adult high schools, educational and vocational skills acquired during service in the armed forces, marriage to a stable partner, conversion to a religion that demanded active participation in a "community of faith," recovery from a life-threatening illness or accident, and, to a much lesser extent, psychotherapy.

Attendance at community colleges and enlistment in the armed forces provided "troubled" teenagers with the opportunity to obtain educational, vocational, and social skills that made it possible for them to move out of welfare dependence

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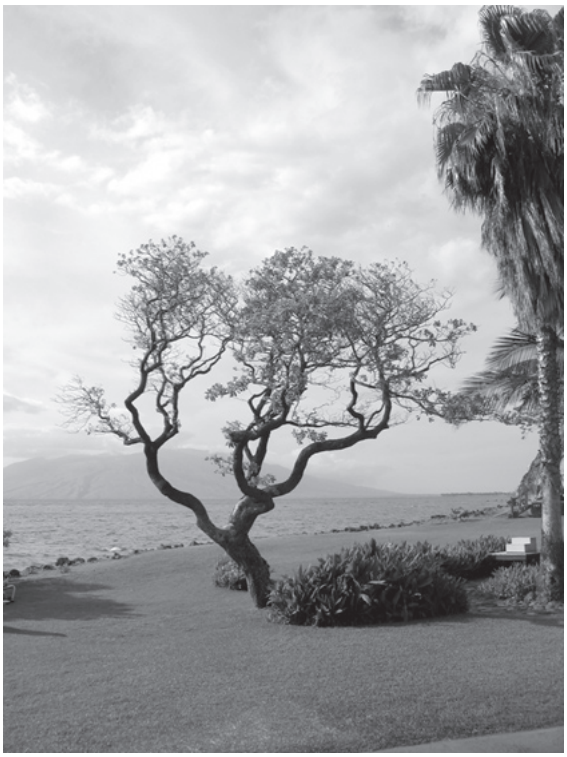
into a competitive job market. Such effects also carried forward to their children. Both the teenage mothers and the former delinquents who had made use of educational opportunities that were available to them in adulthood were eager to see their own sons and daughters succeed in school.

Marriage to a stable partner, whom they considered a close friend, was another positive turning point. Often it was a happy second marriage, after a hastily or impulsively contracted first marriage had ended in divorce. Such a marriage provided the once-troubled partners with a steady source of emotional support, and with the opportunity to share their concerns with a caring person who bolstered their self-esteem.

Conversion to a religious faith that provided structure, a sense of community, and the assurance of salvation was an important turning point in the lives of many troubled teenagers. Most of them were sons and daughters of alcoholics who had been abused as children, and who had struggled with substance abuse problems of their own.

Some individuals who had struggled with mental health problems in their teens encountered a different kind of epiphany that turned their lives around as they approached age 40. They had experienced a prolonged and painful bout with a life-threatening illness or an accident. A close encounter with death forced them to examine the lives they had lived and to consider the opportunities for positive change they would seize when they recovered.

Formal psychotherapy had worked with only a few troubled individuals (some 5%) who tended to be better educated and were of a more introspective bent. The majority in this group relied on medication that relieved anxiety or depression rather than on "talk therapy" that provided insight. The majority of the men and women consistently ranked the effectiveness of mental health professionals (whether psychiatrists, psychologists, or social workers) much lower than the counsel and advice given by spouses, friends, members of the extended family, teachers, mentors, co-workers, members of church groups, or ministers. Their low opinion of the effectiveness of professional help by mental health specialists did not improve from the second to the third and to the fourth decade of life.



Factors Contributing to the Recovery of Troubled Teens

The "troubled" individuals who made use of informal opportunities in their twenties and thirties, and whose lives subsequently took a positive turn, differed in significant ways from those who did not make use of such options. They were active and sociable, had better problem-solving and reading skills, and had been exposed to more positive interactions with caregivers in infancy and early childhood. In general, the outlook in adulthood for individuals who had been shy or lacked self-confidence as children or adolescents was more positive than for those who had displayed frequent anti-social behavior, and for youths whose parents had chronic mental health and/or alcohol abuse problems.

When we examined the links between individual dispositions and external sources of support in the family and community, we discovered that the resilient men and women were not passively reacting to the constraints of negative circumstances. Instead, they actively sought out the people and opportunities that led to a positive turnaround in their lives. The youth who made a successful adaptation in adulthood despite adversity relied on sources of support within their family and community that increased their competencies and self-efficacy, decreased the number of stressful life events they subsequently encountered, and opened up new opportunities for them.

Future Directions

Most of our findings have since been replicated in a number of longitudinal studies around the world—on the mainland in the U.S.A., and in Australia, New Zealand, Denmark, Sweden, Great Britain, and Germany (Werner, 2005). In all of these studies, one can discern a common core of individual dispositions and sources of social support that contribute to resilience. These protective buffers appear to make a more significant impact on the life course of individuals who thrive despite adversity than do specific risk factors and stressful life events, and they transcend ethnic and social class boundaries. Many of the protective factors that fostered resilience among those ex-

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posed to multiple risk factors were also beneficial to those who lived in more favorable environments, but they did have a stronger predictive power for positive developmental outcomes for individuals especially challenged by adversity (Masten & Coatsworth, 1998).

Despite this accumulating evidence, the study of resilience across the life span is still relatively uncharted territory. We urgently need to explore the "reserve capacity" of older people who are an increasing segment of our population—their potential for change and continued growth in later life. Future research on resilience also needs to focus more explicitly on gender differences in response to adversity. We have consistently noted that a higher proportion of females than males managed to cope effectively with adversity in childhood and adulthood. They relied more frequently on informal sources of social support than the men. We suspect that these same gender differences may also apply to coping with old age.

We need more evidence from twin, adoptee, and family studies about the mediating effect of genetic influences that lead to positive adaptation in the context of adversity. Future research on risk and resilience also needs to acquire a cross-cultural perspective that focuses on the children from developing countries who enter our country in ever increasing numbers as migrants and refugees from war-torn countries in Africa, Asia, and Latin America.

Last, but not least, we need to carefully evaluate intervention programs that aim to foster resilience. Throughout our study, we observed large individual differences among "high-risk" individuals in their responses to adversity as well as to the opening up of naturally occurring opportunities. Our findings suggest that educational, rehabilitation, or therapeutic programs deliberately designed to improve the lives of at-risk children and youth will also have variable effects, depending on the dispositions and competencies of the participants. Thus, we should exercise some caution in advocating a particular treatment unless its effectiveness has been independently evaluated.

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