

Resilience in Children: Within a Spiritual, Social, and Neurobiological Framework

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Abstract

This paper explores the spiritual, psychological, and biological aspects of children and resilience. It analyzes the positive role of early exposure to hardship and argues that the benefits stem from exposure to events requiring adaptation to change. This adaptation occurs at the level of the brain as well as at the level of the soul and spirit, and is mediated by neuroendocrine and molecular events as well as by forces acting upon the soul. Exposure to hardship thus allows the child to learn flexibility and to find his or her sphere of useful service in a constantly changing world.

Résumé

Le présent article traite des dimensions spirituelle, psychologique et biologique de l'endurance chez l'enfant. L'auteur y analyse le rôle positif d'une expérience précoce de l'adversité et il soutient que ces bienfaits sont attribuables au fait que l'enfant a été contraint de s'adapter au changement. Une telle adaptation se produit à la fois au niveau du cerveau et au niveau de l'âme. Elle fait intervenir des phénomènes neuroendocriniens et moléculaires tout autant que des forces spirituelles. Ainsi, en étant confronté à l'adversité, l'enfant apprend à développer la souplesse et à trouver sa voie de service dans un monde en perpétuel changement.

Resumen

Este ensayo explora los aspectos espirituales, psicológicos, y biológicos de los niños y su capacidad de superar pruebas. Analiza el papel positivo que la exposición a dificultades a temprana edad desempeña y sostiene que las ventajas se derivan de la exposición a sucesos que requieren adaptación. Esta adaptación ocurre tanto al nivel del cerebro como al del alma y del espíritu, y está mediada por sucesos neuroendocrinos y moleculares al igual que por fuerzas actuando sobre el alma. La exposición a dificultades, por lo tanto, deja que el niño aprenda adaptabilidad y que encuentre una esfera de servicio útil en un mundo que va cambiando constantemente.

Introduction

Children are our future. They represent hope, anticipation of something greater, better than the present. Yet they do not choose to be brought into this world. Nor is their birth always celebrated. Parenthood is not an automatic indicator of knowledge, skills, or understanding as to how to raise children in healthy and wholesome ways. Parents have the responsibility to examine their own capacity as the primary educators of their children, refining their own character and developing the proper parenting attitude and skills in order to train their children to become responsible, happy, contributing members of society.

The importance of the role of children in advancing a better society, however, is a fact often ignored by parents, communities, educators, and governments: far too little attention is given to the healthy development, suitable education, and safe upbringing of our children. As social conditions in the world continue to decline, the plight of our children worsens. In every country and stratum of society today, children are at risk. Many have little sense of purpose and are witness to and live under dreadful social conditions. They are expected to grow up too soon and to confront numerous pressures often without adequate role models or guidance from adults.

One of the most disturbing aspects of children's lives today is the epidemic level of violence to which they are subjected. It is estimated that more children than soldiers have been killed or disabled in wars. According to UNICEF's 1996 *State of the World's Children* report, during the past decade approximately 2 million children have died in wars, between 4 and 5 million have been physically disabled, more than 5 million have been forced into refugee camps, and 12 million have been left homeless. The UNICEF report found that in Rwanda, Croatia, Herzegovina, and Bosnia, adolescent girls as "civilians" were raped and forced to give birth to "the enemy's" child. "In some raids [in Rwanda], virtually every adolescent girl who survived an attack by the militia was subsequently raped." Many of them bore the children of rape, and many of those children were abandoned.

In the same report, it is estimated that of the 53 million people who have been forced to leave their homes, communities, and countries, half are children. Although most of them travel with their parents, others are separated,

orphaned or lost during such times of unrest and panic. In Rwanda, in the last decade an estimated 114,000 children were separated from their families. From 1980 to 1988, it is reported that approximately 330,000 children in Angola and another 490,000 in Mozambique died as a result of war-related causes including lack of food and medical services. Discussing the condition of those children who survive wars, the UNICEF report states that “Millions of children have been present at events far beyond the worst nightmares of most adults.” In Angola, for example, 66 percent of children had seen people murdered, 91 percent had seen dead bodies, and 67 percent had seen people being tortured, beaten, or hurt.

In the industrialized world children also experience difficulties and are faced with adversity. In the United States one in six children lives in poverty, and approximately eleven million are uninsured. In general, children increasingly face violence at home, in their neighborhood, and at school.

The dreadful condition of the world’s children was recently addressed by the Universal House of Justice: “It grieves our hearts to realize that in so many parts of the world children are employed as soldiers, exploited as labourers, sold into virtual slavery, forced into prostitution, made the objects of pornography, abandoned by parents centered on their own desires, and subjected to other forms of victimization too numerous to mention.” The House of Justice further pointed out that “Many such horrors are inflicted by the parents themselves upon their own children.” The Bahá’í community, it noted, “cannot escape the consequences of these conditions. This realization should spur us all to the urgent and sustained effort in the interests of children and the future.”

The Bahá’í writings describe the period which humanity is passing through today as the age of transition—an age characterized by the simultaneous processes of integration and disintegration, “a two-fold process, [destined] to bring to a climax the forces that are transforming the face of our planet.” The Bahá’ís are striving to build the integrative aspect of this process which “as it steadily evolves, unfolds a System which may well serve as a pattern for the world polity towards which a strangely-disordered world is continually advancing.” The disintegrative force is described as one which, as its influence deepens, “tends to tear down, with increasing violence, the antiquated barriers that seek to block humanity’s progress towards its destined goal” and is identified with “a civilization that has refused to answer to the expectation of a new age, and is consequently falling into chaos and decline” (Shoghi Effendi, *World Order* 170).

As humanity moves through this turbulent age of transition, children represent one of the most innocent and helpless groups of the population and consequently one of the most impacted. Therefore, it is important to discover healthy, wholesome ways children can be aided to cope in the present conditions of the world. At the same time, it is vital to examine how to apply spiritual principles to raise resilient children who will be active, courageous, and confident participants in the integrative, constructive forces shaping the future of humankind.

Given the condition of the world’s children today and the charge given to the Bahá’ís of the world by the House of Justice to arrest this situation with a “sustained effort,” the intention of this paper is twofold: first, to explore the spiritual, social, psychological, and biological aspects of resilience in children, and second, to draw principally from the Bahá’í writings to examine the application of these spiritual principles to raising resilient children who will build a future society of justice, peace, and spiritual refinement.

Children are an important segment of society whose education and welfare are of critical importance. In this regard, the primary responsibility for their training rests on the parents. In the *Kitáb-i-Aqdas*, Bahá’u’lláh states, “Unto every father hath been enjoined the instruction of his son and daughter in the art of reading and writing and in all that hath been laid down in the Holy Tablet....He that bringeth up his son or the son of another, it is as though he hath brought up a son of Mine....”(¶48).¹ The importance of careful attention to the training of children is further explained in the Bahá’í writings: “Every child is potentially the light of the world—and at the same time its darkness; wherefore must the question of education be accounted as of primary importance” (‘Abdu’l-Bahá, *Selections* 103.5). Given the present difficult environment with which children are faced, what should that education look like? How can we train our children so that they will become the “light of the world?”

Training does not imply schooling alone. It involves the development of all the talents, abilities, endowments, and potentialities that every child must use in interactions with others and the society at large. We must also teach children to value such an education:

They must be constantly encouraged and made eager to gain all the summits of human accomplishment, so that from their earliest years they will be taught to have high aims, to conduct themselves well, to be chaste, pure, and undefiled, and will learn to be of powerful resolve and firm of purpose in all things. Let them not jest and trifle, but earnestly advance unto their goals, so that in every situation they will be found resolute and firm. (‘Abdu’l-Bahá, *Selections* 110.1)

From a Bahá'í perspective, spiritual education is the most important aspect of a child's training, yet it is the one that receives the least attention today. It is a process that begins at an early age and which aims to infuse in the hearts of children "the love of God," as stated by 'Abdu'l-Bahá, "so they may manifest in their lives the fear of God and have confidence in the bestowals of God. Teach them to free themselves from human imperfections and to acquire the divine perfections latent in the heart of man" (*Promulgation* 53). Spiritual education, as elaborated by 'Abdu'l-Bahá, gives priority to "character and conduct above the sciences and arts." This does not imply that the sciences and arts are unimportant but that provision of a moral and ethical foundation is the prerequisite for the exercise of the power that accompanies knowledge. "Good behavior," He explains "and high moral character must come first, for unless the character be trained, acquiring knowledge will only prove injurious. Knowledge is praiseworthy when it is coupled with ethical conduct and a virtuous character; otherwise it is a deadly poison, a frightful danger" (in *Bahá'í Education* no. 74).²

According to the Bahá'í writings, the refinement of character which is at the heart of a spiritual education includes the acquisition of such qualities as selflessness and detachment, service to others, perseverance, patience, contentment and "radiant acquiescence" with the will of God. In a letter concerning the education of children in the context of the advancement of society, 'Abdu'l-Bahá articulates a most interesting principle: "Bring them up to work and strive," He writes, "and accustom them to hardship. Teach them to dedicate their lives to matters of great import, and inspire them to undertake studies that will benefit mankind" (*Selections* 102.3). In discussing this principle and exploring the meaning of "hardship" in such passages, it should be noted at the outset that the Bahá'í writings unequivocally reject subjecting children to any form of abuse or harsh discipline. For example: "It is not, however, permissible to strike a child, or vilify him, for the child's character will be totally perverted if he be subjected to blows or verbal abuse" ('Abdu'l-Bahá, *Selections* 95.2).³ Although it is beyond the scope of this paper to explore the application of the principle of spiritual education in practice, the purpose of this principle is clearly to build strength of character, including confidence, courage, endurance, and resilience.

Resilient Children

How does exposure to difficulties and hardship affect the character of a child? It is important to understand the negative impact of difficult life experiences and their influence on the psychological, social, and intellectual functioning of children. However, in the present context, it is perhaps more crucial to examine that group of children who are able to overcome their harsh and cruel experiences and transform their lives into remarkably healthy and productive ones. This *resiliency* of children in the face of daily exposure to impoverished, violent, and highly stressful environments has recently received attention within a variety of disciplines (see, for example, Huether; Rutter; Werner).⁴

Resilience in children is defined as successful adaptation following exposure to stressful life events (Werner, "High-Risk Children"). It is also defined as the "capacity of those who are exposed to identifiable risk factors to overcome those risks and avoid negative outcomes such as delinquency and behavioral problems, psychological maladjustment, academic difficulties and physical complications (Rak and Patterson 368). An important longitudinal study conducted by the social psychologist Werner ("High-Risk Children") examined 698 infants born in 1955 on the island of Kauai, Hawaii, and followed them from prenatal development to young adulthood, over a span of thirty years. A third of the infants were found to be at risk, meaning that by age two they had four or more high-risk conditions. These high-risk conditions which make a child susceptible to negative developmental outcomes include factors such as (1) being born into poverty, (2) experiencing moderate to severe prenatal stress, (3) being reared by a mother with little formal education, and (4) living in a family environment characterized by (a) discord, (b) desertion, (c) divorce, (d) parental alcoholism, or (e) mental illness.

Studies that have followed children from birth to adulthood (such as Werner, "High-Risk Children"), show that approximately one-third of children who have experienced adverse life events grow up to be healthy, well-functioning, successful, and happy adults. Although two-thirds of the at-risk children developed serious learning or behavior problems by ten years of age or had delinquency records, mental health problems, or pregnancy by age eighteen, these were attributed primarily to problems with coping strategies. We would like to focus on the one-third of the children who, despite adverse life events, nevertheless grew up to be competent, confident, caring young adults because we believe that if these children are able to prevail over such seemingly insurmountable obstacles, how much more should all children be able to cope with difficult or possibly harmful life events.

No one would seriously suggest that children be intentionally exposed to harm or abuse because it would be good for their character. While the studies we cite below show that a significant proportion of children exposed to extreme conditions of adversity are still able to emerge resilient, we only refer to them in order to better understand what factors contribute to this positive outcome so that we may model them ourselves. In reality, everyday life often provides moderate and controlled levels of hardship, even to a child. The critical factor is how parents respond to the

presentation of such hardship in their child's life, and whether they have the courage to use these life's lessons to accustom their child to be self-reliant, while teaching them positive coping skills. If, however, the environment of the child does not seem to provide enough such challenges, parents must have the courage to create an atmosphere where the child is adequately and routinely challenged so that vital growth and learning processes take place which alone can prepare them to be competent adults. Therefore, although a child exposed to extreme adversity can show remarkable resilience, exposure to moderate levels of hardship seems to be the desired state. Indeed, studies examining the effect of varied degrees of stress on cognitive performance show that the extremes of either low or severe levels of stress result in a decline in cognitive function and performance, and do not provide an optimum environment for learning. However, moderate levels of stress activate the attention centers of the brain such that optimum learning and cognitive performance can take place (Huether; McEwen "Neurobiology").

Characteristics of Resilient Children

Smith and Prior, in one of the few studies that obtained standardized measures of child temperament by both parents and teachers, found temperament to be the most salient feature that consistently differentiates resilient school-age children from nonresilient ones. The most discriminating variable from their analysis was a teacher-rated temperament factor containing ratings of easiness and likeability of the child, along with low emotionality. Traits such as social responsiveness, the capacity to engage and draw people, an easygoing disposition, even-temperedness, and the ability to elicit positive responses from family members as well as strangers have all been cited in the literature as factors which will increase the likelihood of successful coping in the face of present or future adversity (Felsman and Vaillant; Rutter, "Protective Factors"; Werner and Smith).

The second most important variable to emerge as a correlate in almost every analytic study was mother-child warmth. It is interesting to note, however, that mother-child warmth, although independent of age and gender, was not independent of temperament. The exact nature of the association between the temperament of the child and mother-child warmth is not clear, that is, whether it was the mother's behavior that influenced the child's temperament or primarily the child's temperament that determined the mother's behavior.

Werner's 1989 study breaks down the characteristics of resilient individuals and their environment at different critical ages in their development. Resilient adults were *infants* who by age one were able to elicit positive attention from family members as well as from strangers, and exhibited fewer eating and sleeping problems. These resilient individuals, in contrast to their nonresilient peers, were *toddlers* who met the world on their own terms and were described by pediatricians and psychologists as alert, autonomous, and tending to seek out novel experiences. Resilient girls, in particular, were more advanced than nonresilient girls in communication, locomotion, and self-help skills. By *elementary school age*, these were children who got along well with classmates, used skills effectively (though were not especially gifted), maintained many interests, and engaged in activities that were not narrowly sex typed. By *high school* they had developed a positive self-concept, had an internal locus of control, scored on tests of personality assessment as more nurturant, responsible, and as having an achievement-oriented attitude toward life. By ages eighteen through thirty-two, resilient individuals engaged in far more extracurricular activities that were cooperative and enterprising. Resilient females in particular were more assertive, independent, and achievement oriented than their nonresilient counterparts.

Werner found that as adults most resilient individuals had moved away from the island of Kauai, while most of those with coping problems still lived on the island. She also found that resilient high-risk individuals significantly more often reported faith and prayer as sources of support than did their low-risk resilient peers of the same age (33 percent resilient high-risk versus 15 percent low-risk peers). A significantly higher proportion of the high-risk resilient individuals than their low-risk peers rated themselves as "happy" and "delighted" with their current life circumstances (44 percent resilient high-risk versus 10 percent low-risk peers). Furthermore, Werner found that resilient adults had grown up in families with four or fewer children spaced at least two years apart; few had experienced prolonged separation from the primary caregiver during the first year of life; and all had the opportunity to establish a close bond with at least one caregiver from whom they received plenty of positive attention as infants. Resilient individuals, furthermore, were able to find emotional support outside the family, which was seen as critical in their ability to cope throughout life.

This research shows that the extended family, or community members and mentors, can provide this necessary and critical bond with the child. Teachers are one group that can play this vital role in the life of a child. The importance of teachers in the education and training of children is repeatedly extolled in the Bahá'í writings. 'Abdu'l-Bahá likens the role of children's teachers to that of a doctor, stating, "Therefore must the mentor be a doctor as well: that is, he must, in instructing the child, remedy its faults; must give him learning, and at the same time rear him to have a spiritual nature. Let the teacher be a doctor to the character of the child, thus will he heal the spiritual ailments of the children of men" (*Selections* 103.2). In another passage about the importance of the role of

children's teachers, 'Abdu'l-Bahá writes, "Among the greatest of all services that can possibly be rendered by man to Almighty God is the education and training of children..." (*Selections* 106.1).

A few gender differences emerge in the resilient children. Briefly, the girls whose fathers were absent and had working mothers and who therefore were forced to take care of younger siblings, ended up being more resilient. This experience contributed to the autonomy and sense of responsibility developed in resilient girls. Boys, on the other hand, were harmed more severely by an absent father. Those who fared well in later life were often firstborn children and had some male role model in the family. As adolescent boys, they had a lot of structure, rules, and assigned chores.

As disadvantage and the number of stressful life events increase and accumulate in the life of a high-risk individual, more protective factors are needed to ensure a positive developmental outcome (Werner, "Stress"). These protective factors include things such as the child's own temperament, mother/child warmth, and social support. Rutter, in discussing protective factors and resistance to psychiatric disorder, mentions the importance of social supports as an important buffer to the effects of severe stressors ("Resilience"). He argues that the supportive and therefore protective function of social supports—and perhaps of any other protective factor—stems from the individual's own personal qualities rather than from the features of the surrounding social network. This is in accordance with Smith and Prior's analysis that individual temperament truly is the most salient protective factor, and that this temperament, if positive, could help enhance relationships both at home, school, or work, with far-reaching influences. One important distinction Rutter makes is that there is a difference between protective factors and positive experiences. Importantly, a protective factor may not constitute a pleasurable happening at all. The Bahá'í writings discuss how pain and suffering can be considered protective factors. Shoghi Effendi observed that

suffering, although an inescapable reality, can nevertheless be utilised as a means for the attainment of happiness.... Suffering is both a reminder and a guide. It stimulates us better to adapt ourselves to our environmental conditions, and thus leads the way to self improvement. In every suffering one can find a meaning and a wisdom.... It is sometimes only when all our suffering has passed that we become aware of its usefulness. (*Unfolding Destiny* 434)

Rutter further clarifies that protective factors may have no detectable effect in the absence of a stressor, but rather, their role is to modify the response to a later stressor which may be encountered. Protective factors do not play a role in normal development per se but become critical in times of adversity as it is then that one sees their protective effects.

In addition, Werner found that resilient children, as compared to nonresilient ones, had faith that their lives had meaning, and that they could shape their own destiny. Bahá'u'lláh reminds us that we must strive to demonstrate our God-given potential by our own efforts: "All that which ye potentially possess can, however, be manifested only as a result of your own volition. Your own acts testify to this truth" (*Gleanings* 149).

By realizing that our reaction to the test we are facing is within our control, we are better able to achieve our full potential. Bahá'u'lláh reassures us thus: "He will never deal unjustly with any one, neither will He task a soul beyond its power" (*Gleanings* 106). 'Abdu'l-Bahá further elucidates the concept that striving for perfection and cultivating our nascent talents is a source of happiness: "When a man sees his work perfected and this perfection is the result of incessant labour and application he is the happiest man in the world. Work is the source of human happiness" (qtd. in Kurzius 147). Thus, we must instill in our children the desire and discipline to strive for ever greater degrees of refinement, and the idea that hard work and perseverance is not something to shy away from but rather, the desired state. 'Abdu'l-Bahá states:

There are certain forms of work which are beyond human endurance and others which are within it; and these differ according to the early environment and training of each individual.... The struggling, winning, successful man is he who accustoms himself to the accomplishment of those things which are considered to be beyond human endurance. Only a soul thus great can stand the tests of life and come out of the crucible pure and unspotted. (Qtd. in Kurzius 147)

Biological Correlates

The effects of stress—as well as the effects of efforts to cope with stress—leave traces upon the human brain. The field of neurobiology has devoted much time to the question of stress: its mechanisms of action, hormonal and neuronal correlates, its effect on behavior and on the stress-responsive and stress-reactive systems themselves. Many have linked stress to psychopathology and have focused on its adverse biochemical consequences to the brain—from free radical formation and cellular damage to the pruning of neuronal pathways.

Many studies, too, have discovered beneficial effects of stress, although these have often not received much attention. In reviews by Gerald Huether and Huether at al., the role of stress as an adaptive trigger and a tool to better enable us to function to our fullest potential as a human society is examined. The systems in the brain and body designed to react to stress serve a critical purpose in ensuring survival as they are, at a most basic level, activated in response to threats to homeostasis. Signals such as cold, hunger, and thirst all activate the stress-reactive systems in the body in an effort to motivate the individual to eliminate the source of stress by actions that are taken, for example, to keep warm, eat, or drink. Indeed, stressors such as these that threaten one's immediate physical well-being are among the only stressors that most lower and higher vertebrates face. For that reason, they are equipped with brains and bodies designed to meet their particular environmental challenges, with a rather limited repertoire of behavioral responses to those challenges. Humans, in contrast, live in a highly complex environment where most of the stressors they face are sociocultural, cognitive, and moral in origin. Human brains also tend to be more complex and the choices of behavioral responses to challenges are vastly broader.

Humans and animals share the physical plane of existence, and therefore both have qualities of sense perception, memory, voluntary movement, natural emotions, and the capacity to learn.⁵ With regard to qualities of sense perception and certain types of memory, the capacity of animals in fact often surpasses humans. Animals use all these qualities in order to ensure the survival of their species; all the qualities that animals possess are contained within the laws of nature and are bound by it. Animals are genetically programmed with instinctive behaviors, each species uniquely equipped with the particular genes and pattern of gene expression it needs for optimum life and survival. In order to adapt, animals learn to avoid danger and acquire new skills within the limits of their capacity, drawing upon the power of their senses and their memory of prior sensorial experience. In this light, animals have voluntary movement to help them in their survival, and they exhibit natural emotions such as fear and affinity, which are largely under genetic control. Since humans, like animals, have physical bodies, they share the qualities of the animal but to differing degrees, as even do different species differ in degree from one another. With regard to the senses alone, for instance, we share with animals the sense of pain—"The feelings are one and the same, whether ye inflict pain on man or on beast. There is no difference here whatever" ('Abdu'l-Bahá, *Selections* 138.3). With regard to the sense of hearing, however, humans are rather limited when compared to other mammals which can hear ultrasonic sounds.

Although humans share the physical body with the animal kingdom, the human reality is the soul. According to the Bahá'í writings the soul is described as a "sign of God.... It is the first among all created things to declare the excellence of its Creator, the first to recognize His glory, to cleave to His truth, and to bow down in adoration before Him" (Bahá'u'lláh, *Gleanings* 158–59). The soul is "a spirit with which God has endowed [man] at creation" ('Abdu'l-Bahá, *Promulgation* 259) and in which "are potentially revealed all the attributes and names of God" (Bahá'u'lláh, *Kitáb-i-Íqán* 101). The animal attains its highest state of perfection when it is healthy and functioning in this physical realm, its sole purpose being the life of the flesh. The purpose of human life, in contrast, is beyond the physical world. 'Abdu'l-Bahá writes that the soul is "the medium of the spiritual life" and the soul is "the conscious reality" and "the heavenly gift of consciousness" (qtd. in Savi 147). According to the Bahá'í texts, animals have no "powers of ideation and conscious reflection" ('Abdu'l-Bahá, *Promulgation* 172–73), nor do they have the power of abstract reasoning and intellectual ideals, for they are captives of the senses. Animals are further deprived of the meditative faculty, lack spiritual susceptibilities, and have no concept of divine teachings or universal principles, but rather rely wholly on their instinct. Therefore, when we study the human brain, it is because we believe that the higher cognitive and conscious powers of the human mind leave their traces upon the brain, and not because we believe that all our higher cognitive and conscious awareness originates in the brain itself.

In the anatomy of the human brain, the cerebral cortex is highly developed, with great complexity of connections within it that parallels this degree of development. These phylogenetically newer, more recently developed brain regions contain neuronal circuits which—through a series of complex, integrated activities—are involved in the recognition and interpretation of environmental challenges; in the selection, planning, and execution of behavioral responses; in the regulation of emotions and motivation; and in the acquisition and retention of information (Huether).

These brain regions involved in associative functions are the least genetically determined and the most plastic and adaptive of neuronal circuits. They are also most sensitive to the effects of stress and are responsible for the interpretation of alerting or threatening cognitive stimuli. Although the associative brain is subject to *lifelong* adaptive modifications and reorganizations in response to changing demands and inputs, it is during *childhood* that these regions are most responsive to the learning of efficient coping strategies and to the very building of flexibility into the brain's circuitry when such circuits are challenged and stimulated.

Briefly, when an individual is exposed to stress, two primary stress-response systems are activated: the sympathetic-adreno-medullary (SAM) axis and the hypothalamic-pituitary-adrenal (HPA) axis. The effect of SAM

stimulation is practically instantaneous, resulting in such rapid alterations as an increase in heart rate; its termination is also relatively rapid. This activation is generally acknowledged as beneficial and pro-adaptive. The activation of the HPA axis, on the other hand, takes longer to have its effect, and stimulates the release of glucocorticoids (stress hormones) like cortisol which usually result in a longer-lived stress response with more global, broader effects. Although beneficial in times of prolonged stress such as during an illness, repeated activation of the HPA axis at times when preparation for such a long-lived stress response is not warranted seems to predispose to negative outcomes. Some of the adverse consequences of chronic stress include a blunting of the sensitivity of the stress-responsive systems themselves, increased risk of high cholesterol, heart disease, and insulin resistance (type II diabetes), immunosuppression, and increased susceptibility to psychiatric disorders (Francis et al.; Brindley and Rolland; Munck, Guyre, and Holbrook).

Illness usually manifests itself as high degrees of environmental demand meet with individual vulnerability. This vulnerability often results from genetic predispositions, early life experiences, and most commonly, an interaction between genetic and environmental factors. People experiencing physical or sexual abuse within a family are at considerably greater risk of developing mental illness in adulthood (Bifulco, Brown, and Adler). In addition, persistent emotional neglect or conditions of harsh, inconsistent discipline increase the risk of depression and anxiety disorders to a level comparable to that observed in more obvious cases of abuse (Holmes and Robins). It is undeniable, then, that the quality of the early family environment can be a major source of vulnerability in later life by affecting the early development of the parts of the nervous system that are implicated in reactivity to stress and involved in the development of effective coping strategies for stress and adversity (Francis et al.; Huether).

One component of this early family environment is parental care. Scores on parental bonding scales reflecting cold and distant parent-child relationships pose a significantly greater risk of depression in later life. Furthermore, Russak et al., in a thirty-five-year follow-up study, found that those who as undergraduates rated their relationship with parents as cold and detached were by midlife at a fourfold greater risk of chronic disease including depression, alcoholism, heart disease, and type II diabetes (reviewed in Meaney "Maternal"). Although these complex diseases are largely influenced by important factors such as genetic predisposition, this study found that the perceived lack of parental bonding could in fact independently impact and significantly contribute to the manifestation of these diseases. Differences in parental care, then, are related to the health of the offspring, and seem to be mediated by parental influences on the development of neural systems which underlie the expression of behavioral and endocrine (hormonal) responses to stress (Francis et al.), with implications for future health and disease (Chrousos; McEwen "Stress"; Sapolsky). In addition, early positive experience with successful use of coping strategies reinforces the learning, and promotes the subsequent use, of appropriate coping strategies throughout life (Huether).

Even in rats, the early postnatal period is a very important one. Studies have found that maternal behavior has a profound influence on the future behavior of rat pups. In particular, maternal licking/grooming behavior significantly influences the parts of the developing brain that regulate the expression of behavioral, endocrine, and autonomic responses to stress (Meaney et al., "Effects" and "Early Environmental Regulation"). When pups from a particularly fearful strain of mice were raised by mothers of a normal strain, these pups were significantly less fearful and had significantly lower HPA responses to stress as adults (Zaharia et al.). This seemed related to the fact that the mothers of the normal strain licked and groomed their pups about twice as frequently as the mothers of the fearful strain (Anisman et al.).

Whether or not the central stress response will be activated is dependent on an individual's prior experience. The extent to which the stress response will be able to effect change at the level of the brain is dependent on the degree of plasticity of the associative brain. The degree of plasticity, and therefore the adaptive potency, of these neural systems is highest during early stages of development and declines with increasing age. Therefore, the stress responsiveness of an individual will be most easily modified and most permanently shaped by the experience of stress—either controllable or uncontrollable—in early life. These changes have the potential for lifelong consequences. Indeed, several animal studies have looked at the effects of rat pups' exposure to stress on the development of their stress-responsive systems as adults. One of the paradigms used to study this is the postnatal "handling" paradigm. Here, pups are removed from their mothers and left alone in a separate cage for fifteen minutes a day during the nursing period (day 1–21) or some part thereof (Meaney, Aitkens, and Sapolsky). In general, adult rats that were postnatally handled as compared to nonhandled rats exhibited reduced fearfulness in novel environments and increased exploratory behavior (Vallée et al., "Prenatal Stress"), reduced anxiety in stressful situations (Meerlo et al.), decreased depressive behavior and decreased propensity for addictive behaviors (Hilakivi-Clarke et al.), as well as an increased threshold for pain (Pieretti, d'Amore, and Loizzo). In response to a variety of stressors, handled rats as compared to non-handled rats show a less pronounced increase in the secretion of several stress hormones (Meerlo et al.). Most significant is the fact that handled rats exhibit a swifter and more efficient

return to baseline values of adrenal glucocorticoids (stress hormones) after their encounter with a stressor (Vallée et al., “Prenatal Stress”). It is also interesting to note that postnatal handling and exposure to mild *postnatal* stress reverses the adverse effects of *prenatal* stress on the developing nervous system. Some of the specific adverse effects of prenatal stress that are seen to be reversed by postnatal stress experiences include circadian changes on the HPA axis (Koehl), age-related decreases in cognitive performance (Vallée et al., “Long-term Effects”), increases in circulating levels of stress hormones in the adult rat (Vallée et al., “Long-term Effects”), and increases in anxious behaviors (Vallée et al., “Prenatal Stress”).⁶

It is reasonable to conclude, therefore, that the mild stress afforded by the handling paradigm during the postnatal period has adaptive potency at the level of the wiring of the reactivity of the HPA axis and related neuronal circuitry. This adaptive potency allows the adult animal to cope more appropriately in novel and otherwise stressful environments and to decrease the animal’s lifetime exposure to inappropriately elevated levels of glucocorticoids.

Huether finds that the highest degree of experience-dependent flexibility in the response to stress is found in all socially organized mammals, but is most advanced in humans. He further states that the extent to which the neuroendocrine stress response is elicited is dependent on the degree of controllability felt by the individual, and that this in turn is determined not by the size and kind of environmental challenge presented per se, but rather by the sum of previous experiences an individual has had with the same or similar kinds of stressors.

Stressors are generally of two types: those perceived as *controllable*, or eliciting an adaptive response, and those perceived as *uncontrollable*, or eliciting a maladaptive response. Both controllable and uncontrollable stressors involve the recognition of novel, unexpected, challenging, or threatening stimuli that cause a pattern of arousal in the associative cortex and other nervous system structures, initiating a stress response. In the case of controllable stress, however, the individual has the subjective feeling that a certain demand or challenge can be met in principle by his own action, thus shutting off the stress response. In the case of uncontrollable stress, on the other hand, an individual feels he cannot terminate the stress response by his own actions, resulting in the sustained activation of the central stress response systems (Huether et al.). Stressors, therefore, are viewed as “controllable” or “uncontrollable” based on an individual’s own perception of the stressor, often in reference to one’s past experience or the development of coping strategies. Hence, a stressor that might seem controllable to one person may be viewed as uncontrollable by another person. In addition, the magnitude of the stressor will likewise be judged through an individual’s own perception of it. A situation that might seem minor to one person may present a great challenge to another person.

There is evidence to suggest that SAM is preferentially activated when there is available to the individual a repertoire of coping strategies to control stressors. The HPA axis is preferentially activated when loss of control is experienced (De Boer et al.; Henry). Thus the degree of controllability of the stressor dictates the balance or degree to which these two stress response systems are activated.

In general, if we have a broad enough “library” of past experiences which reinforce the notion that we can effectively deal with these stressors because we have successfully done so in the past, controllable stressors trigger more and more refined behavioral responses to stress and act as a trigger for the successive adaptive modification of the individual’s behavioral competence to the specific demands of its external and internal world (Huether et al.). In the face of controllable stress, the SAM system is preferentially activated; the effect upon the brain is ultimately to recruit, facilitate, and strengthen neuronal connections. The more successful the actions of an individual are in coping with a controllable stressor, the more the neuronal pathways and synaptic connections involved in that adaptive behavior will be strengthened, and the more effectively the required coping skills for such a stressor will be developed. When we meet controllable stressors as children, and have positive early experiences terminating such stressors by our own actions, this serves as one “of our earliest associative learning experiences and it has strong imprinting impact on the developing brain. It is the prerequisite for the acquisition of an ever-increasing repertoire of more and more specific and refined behavioral strategies for the control of stressors” (Huether 595).

Our brains learn which behavioral responses are effective when we engage in appropriate behavioral responses that serve to eliminate the stress. This concept underlies the biological advantage of allowing children to be exposed to hardship early on, and guiding them if necessary through successfully overcoming such hardship. Thus, they may learn effective skills of coping and adaptation. Having acquired a greater repertoire of past successful experiences in dealing with and terminating stressors, they will subsequently view most stressors as “controllable.” They will approach more of life’s new challenges with confidence, and will more readily adapt to difficult situations later in life.

Invariably, earlier or later in life, individuals will face an experience they have not faced before. At some point they may become overwhelmed by the very uncontrollability of stress in a world of ever-changing psychosocial conditions and will realize that all their previously acquired cognitive and behavioral coping strategies are no longer adequately suited to control the stressors of life. When this happens, some individuals may find a way

out by discarding previous beliefs and assumptions and by reassessing old patterns of assumptions. Indeed, this experience sometimes draws them into an earnest search after truth and may become an important impetus for growth, breakthrough insights, and enrichment, leading to new coping strategies. If individuals are not able to make these cognitive changes on their own, when faced with what they perceive to be uncontrollable stress, they will be aided to make these changes by experiencing the sustained activation of their neuroendocrine stress response. This sustained activation of the stress response will aid in the reorganization of pertinent neuronal pathways, possibly accompanied by a change in outlook—an admission of helplessness, of a need for a new direction—resulting in the acquisition of new, more appropriate coping strategies. This in itself may not be negative. If the individual encounters repeated uncontrollable stressors, however, this chronic activation of the stress response can lead to adverse consequences.

We have proposed that early exposure to hardship (accompanied by a successful response to that hardship) increases the chance that a person will view most stressors in life as controllable, thereby bypassing long-lasting activation of the HPA axis of the stress response systems. Early exposure to and success in dealing with hardship will therefore foster resiliency in the face of future adversity and will foster the viewing of future challenges as opportunities, rather than labeling them as misfortune. With this in mind, how can the Bahá'í Faith offer guidance to individuals facing drastically difficult stressors and how can we raise our children to more effectively deal with these stressors?

It is our belief that children should be raised to know that such uncontrollable stressors exist, and that they should expect to encounter them. Although they will not (by definition) have had prior direct experience with such uncontrollable stressors, they can still develop the spiritual and cognitive resolve to deal with particularly difficult situations. What makes a stressor so “uncontrollable” is the shock of its magnitude and its power to overwhelm previously acquired coping strategies. As Bahá'ís, we in essence remind ourselves every day, in the daily obligatory prayer, of our “powerlessness” and God’s “might,” to our “poverty” and His “wealth.” This daily acknowledgement of our fragile and transient place in this world, and our dependence and reliance on God as the source of all power and the “remover of difficulties” serves to ground us to our true purpose, which, the same prayer says, is to know God and worship Him. The first step towards dealing with tests in our lives, then, is in essence to *relinquish to a higher power the very control we crave*. We should learn early on that all that we have is provided through the grace of God, that “inaction or the movement of man depend upon the assistance of God. If he is not aided, he is not able to do either good or evil.... in all the action or inaction of man he receives power from the help of God; but the choice of good or evil belongs to the man himself.... if the help is cut off, he remains absolutely helpless” (‘Abdu’l Bahá, in *Life, Death, Immortality* 166, 167).

In parallel, if we approached life with the attitude—and truly believed—that our response to no test is ever beyond our control, we would never perceive a test as “uncontrollable” and would thereby limit maladaptive responses.

We must train children from a tender age to internalize the words of Bahá'u'lláh, “He will never deal unjustly with any one, neither will He task a soul beyond its power” (*Gleanings* 106). If we believe that we will never be tested beyond our capacity, we will be able to face all of life’s challenges with calm determination, resolute strength, and in constant supplication of and reliance on the aid and assistance of God, as the prayer of Bahá'u'lláh attests: “What refuge is there beside Thee, O my Lord, to which I can flee, and where is there a haven to which I can hasten? Nay, the power of Thy might beareth me witness! No protector is there but Thee, no place to flee to except Thee, no refuge to seek save Thee” (*Bahá'í Prayers* 256).

By acknowledging our weakness, the instability of the world, and our need for divine assistance, we acknowledge that at some level, all the happenings of the world are beyond our control, although our *reaction* to every situation is fully within our control. Therefore, our sense of stability is not shaken by the events of everyday life, however catastrophic they may be, but rather, our faith is strengthened. By reminding ourselves that God will never test a person beyond one’s capacity, however, we additionally take responsibility for our own reaction to the tests and for the actions we must take to improve or overcome the difficult situations, and avoid viewing ourselves as victims or becoming absorbed in self-pity or resentment.

Parental Responsibility

In this discussion of raising resilient children, it is important to note that there are genetic and heritable differences influencing predispositions in children which will affect the development of a particular temperament, as well as influence the types of coping strategies a child might be inclined to use (Busjahn et al.; Mellins, Gatz, and Baker). The Bahá'í writings acknowledge these inborn differences but also speak highly of the influence of education and environmental conditions on the underlying inherited attributes:

The variety of inherited qualities comes from strength and weakness of constitution; that is to say, when the two parents are weak, the children will be weak; if they are strong, the children will be robust. . . . For example, you see that children born from a weak and feeble father and mother will naturally have a feeble constitution and weak nerves; they will be afflicted, and will have neither patience, nor endurance, nor resolution, nor perseverance, and will be hasty; for the children inherit the weakness and debility of their parents....

But the difference of the qualities with regard to culture is very great; for education has great influence. Through education the ignorant become learned, the cowardly become valiant.... Education must be considered as most important; for as diseases in the world of bodies are extremely contagious, so, in the same way, qualities of spirit and heart are extremely contagious. Education has a universal influence and the differences caused by it are very great. ('Abdu'l-Bahá, *Bahá'í World Faith* 319–20)

Some individual babies, then, due to genetic predispositions or intrauterine influences, will be at either extreme of the behaviorally “normal” spectrum at birth. However, by age three or four, according to Huether, some of these “abnormal” babies may have developed quite well (toward average responsiveness) while others who seemed normal at birth now show extreme behavior. The biggest difference between those babies who developed toward normal and those who developed away from normal is their experience with social supports.

In infancy, a child’s cognitive development is limited such that the child alone cannot effectively execute coping strategies. Rather, when faced with a stressor, the child relies solely on social support to alleviate any feelings of anxiety caused by the stressor, thus terminating the stress response at the level of the brain. With increasing maturation of the associative cortex, children are able to gain more control over their own responses to stressors. The more successful they are in dealing with hardship at this age, the more strengthened and reinforced the underlying neuronal networks responsible for the execution of their coping strategies become. Infants who did not acquire faith in their social supports early on will be forced to learn to cope by acquiring adequate cognitive and behavioral strategies earlier than they would have otherwise had to do.

We must not underestimate, then, the importance of social supports or the family/home environment into which the child is born and raised. Indeed it seems that ideally all of a child’s essential needs of nurturance, safety, and love should be provided for when the child first enters the world. In the Hidden Words Bahá'u'lláh proclaims: “Out of the wastes of nothingness, with the clay of My command I made thee to appear, and have ordained for thy training every atom in existence and the essence of all created things. Thus, ere thou didst issue from thy mother’s womb, I destined for thee two founts of gleaming milk, eyes to watch over thee, and hearts to love thee” (*Hidden Words* Persian no. 29).

The environment the child is exposed to, however, both inside the womb and once born, as well as the education he receives, can have a profound influence. In talking about the importance of the role of the mother as the first educator of the child, the Universal House of Justice writes: “Her attitude, her prayers, even what she eats and her physical condition have a great influence on the child when it is still in the womb.” It also refers in the same letter to the earliest days and months of a baby’s life as an “intensely formative time when it is growing and developing faster than it ever will again during the whole of its life” (*Compilation on Women* 27).

Since the brain is most plastic and malleable in childhood, the influences of early experiences with successes as well as challenges faced while coping with hardship will be most beneficial in childhood but will result in lasting changes into adulthood. ‘Abdu'l-Bahá explains, “It is extremely difficult to teach the individual and refine his character once puberty is passed.... even if every effort be exerted to modify some tendency of his, it all availeth nothing. He may, perhaps, improve somewhat today; but let a few days pass and he forgeteth, and turneth backward to his habitual condition and accustomed ways. Therefore it is in early childhood that a firm foundation must be laid” (*Selections* 111.7). ‘Abdu'l-Bahá further counsels the importance of education and training of children while young, as well as the method of such training:

Let the mothers consider that whatever concerneth the education of children is of the first importance. Let them put forth every effort in this regard, for when the bough is green and tender it will grow in whatever way ye train it.... Whensoever a mother seeth that her child hath done well, let her praise and applaud him and cheer his heart; and if the slightest undesirable trait should manifest itself, let her counsel the child and punish him, and use means based on reason, even a slight verbal chastisement should this be necessary. It is not, however, permissible to strike a child, or vilify him, for the child’s character will be totally perverted if he be subjected to blows or verbal abuse. (*Selections* 95.2)

This combination of reward and punishment, of praise and verbal chastisement at an early age, too, contributes to the strengthening and rearrangement of the child's developing neuronal circuits and aids in the training and development of the child's soul.

Conclusion

Children are faced with enormous challenges as they struggle to find their place in a world increasingly agitated by terror, violence, prejudice, injustice, and decadence. However, when their training provides them with the capacity to face such challenges, they can find their rightful place as spiritual and social beings who become the "light of the world." The Universal House of Justice writes: "One of the signs of a decadent society, a sign which is very evident in the world today, is a frenetic devotion to pleasure and diversion, an insatiable thirst for amusement, a fanatical devotion to games and sport, a reluctance to treat any matter seriously, and a scornful, derisory attitude towards virtue and solid worth" (*Compilation of Compilations* 1:53). Children are not immune to the influences of this decadent society but are saturated by its negative messages. Unless they are guided to understand the deeper meanings of the spiritual dimensions of life, and are equipped with adequate coping skills to confront society's harmful effects, they will remain incapable of transcending society's hollow influence and unable to become their true selves. This is why spiritual training is given such importance in the Bahá'í writings. It is through such training that children increase their capacity to cope with the menacing influence of society, and bring to fruition all of their latent talents and potentialities.

Spiritual education, loving nurturance, and careful, attentive training of children cultivates their identity and transformation as spiritual beings engaged in service toward the betterment of humanity. "Children," writes the House of Justice,

are the most precious treasure a community can possess, for in them are the promise and guarantee of the future. They bear the seeds of the character of future society which is largely shaped by what the adults constituting the community do or fail to do with respect to children. They are the trust that no community can neglect with impunity. An all-embracing love of children, the manner of treating them, the quality of the attention shown them, the spirit of adult behaviour toward them—these are all among the vital aspects of the requisite attitude.

When children are loved, nurtured, cared for, and educated by their parents and the community, a strong foundation is constructed for a better future for themselves and society. Carrying out that obligation to its fullest implies that parents must constantly place their children's well-being—physical, social, and spiritual—above all other responsibilities, a decision that must be supported by the social institutions of the community. There is only one chance to raise our children to become well-rounded, spiritually strong, and morally responsible adults. This is a chance that parents, as the first to socialize and train their children, must seize with great determination and perseverance. As the Universal House of Justice writes: "Love demands discipline, the courage to accustom children to hardship, not to indulge their whims or leave them entirely to their own devices."

Notes

1. In expounding on this paragraph, The Universal House of Justice explains: "'Abdu'l-Bahá, in His Tablets, not only calls attention to the responsibility of parents to educate all their children, but He also clearly specifies that the *'training and culture of daughters is more necessary than that of sons'*, for girls will one day be mothers, and mothers are the first educators of the new generation. If it is not possible, therefore, for a family to educate all the children, preference is to be accorded to daughters since, through educated mothers, the benefits of knowledge can be most effectively and rapidly diffused throughout society" (in Bahá'u'lláh, *Kitáb-i-Aqdas* n76).

2. Julio Savi defines the concept of Bahá'í spiritual education as "that kind of education which, on the one hand, enables man to understand his own spiritual nature and to learn the dynamics of its development so that once maturity has been attained he may automatically foster his own spiritual growth, and, on the other hand, which trains him from his early childhood so that he may manifest in his life the qualities of the world of the Kingdom and not the traits of the world of creation" (188). For further reading on the concept of spiritual education see Hatcher 38, 40.

3. See also 'Abdu'l-Bahá, *Selections* 110.3 and 113.1–3.

4. The scientific basis of human behavior is an evolving and sometimes controversial field; despite these limitations we present the data currently available.

5. See Savi 79-81 for discussion and references from the Bahá'í writings.6. For a review, see Redei et al.

Works Cited

- ‘Abdu’l-Bahá. *Paris Talks: Addresses Given by ‘Abdu’l-Bahá in Paris in 1911–1912*. 11th ed. London: Bahá'í Publishing Trust, 1969.
- . *The Promulgation of Universal Peace: Talks Delivered by ‘Abdu’l-Bahá during His Visit to the United States and Canada in 1912*. Comp. Howard MacNutt. 2d ed. Wilmette, Ill.: Bahá'í Publishing Trust, 1982.
- . *Selections from the Writings of ‘Abdu’l-Bahá*. Comp. Research Dept. of the Universal House of Justice. Trans. Marzieh Gail et al. Wilmette, Ill.: Bahá'í Publishing Trust, 1997.
- Anisman, H., M. D. Zaharia, M. J. Meaney, and Z. Merali. “Do Early-Life Events Permanently Alter Behavioral and Hormonal Responses to Stressors?” *International Journal of Developmental Neuroscience* 16 (1998): 149–64.
- Bahá'u'lláh. *Gleanings from the Writings of Bahá'u'lláh*. Trans. Shoghi Effendi. Wilmette, Ill.: Bahá'í Publishing Trust, 1994.
- . *The Hidden Words of Bahá'u'lláh*. Trans. Shoghi Effendi. Wilmette, Ill.: Bahá'í Publishing Trust, 1985.
- . *The Kitáb-i-Aqdas: The Most Holy Book*. Wilmette, Ill.: Bahá'í Publishing Trust, 1993.
- Bahá'u'lláh and ‘Abdu’l-Bahá. *Bahá'í World Faith: Selected Writings of Bahá'u'lláh and ‘Abdu’l-Bahá*. Wilmette, Ill.: Bahá'í Publishing Trust, 1977.
- Bahá'í Education*. Comp. Research Dept. of the Universal House of Justice. London: Bahá'í Publishing Trust. 1987.
- Bahá'í Prayers: A Selection of Prayers Revealed by Bahá'u'lláh, the Báb, and ‘Abdu’l-Bahá*. Wilmette, Ill.: Bahá'í Publishing Trust, 1991.
- Bifulco A., G. W. Brown, and Z. Adler. “Early Sexual Abuse and Clinical Depression in Adult Life.” *British Journal of Psychiatry* 159 (1991): 115–22.
- Brindley, D. N., and Y. Rolland. “Possible Connections between Stress, Diabetes, Obesity, Hypertension, and Altered Lipoprotein Metabolism that May Result in Atherosclerosis.” *Clinical Science (Colch)* 77 (1989):453–61.
- Busjahn, A., H. D. Faulhaber, K. Freier, and F. C. Luft. “Genetic and Environmental Influences on Coping Styles: A Twin Study.” *Psychosomatic Medicine* 61 (1999): 469–75.
- Chrousos, G. P. “The Concepts of Stress and Stress System Disorders.” *Journal of the American Medical Association* 267 (1992): 1244–52.
- The Compilation of Compilations*. Vol. 1. Maryborough, Vic.: Bahá'í Publications Australia, 1991.
- De Boer, S. T., R. DeBeun, J. L. Slangen, and J. Van der Gugden. “Dynamics of Plasma Catecholamine and Corticosterone Concentrations during Reinforced and Extinguished Operant Behavior in Rats.” *Physiology and Behavior* 46 (1990): 691–98.
- Elder, Glen H. *Children of the Great Depression: Social Change in Life Experience*. Chicago: University of Chicago Press, 1974.
- . “Historical Change in Life Pattern and Personality.” *Lifespan Development and Behavior*. Vol. 2. Ed. P. Baltes and O. Brim. New York: Academic Press, 1979.
- Felsman, J. K., and G. E. Vaillant. “Resilient Children as Adults: A Forty-Year Study. *The Invulnerable Child*. Ed. E. James Anthony and Bertram J. Cohler. New York: Guilford Press, 1987. 289–314.

- Francis, D. D., C. Caldji, F. Champagne, P. M. Plotsky, and M. J. Meaney. "The Role of Corticotropin-Releasing Factor—Norepinephrine Systems in Mediating the Effects of Early Experience on the Development of Behavioral and Endocrine Responses to Stress." *Biological Psychiatry* 46 (1999): 1153–66.
- Hatcher, William S. *Love, Power, and Justice: The Dynamics of Authentic Morality*. Wilmette, Ill.: Bahá'í Publishing Trust, 1998.
- Henry, J. P. "Neuroendocrine Patterns of Emotional Response." *Emotion, Theory, Research, and Experience*. Ed. Robert Plutchik and Henry Kellerman. New York: Academic Press, 1986. 37–60.
- Hilakivi-Clarke, L. A., J. Turkka, R. G. Lister, and M. Linnoila. "Effects of Early Postnatal Handling on Brain Beta-Adrenoceptors and Behavior in Tests Related to Stress." *Brain Research* 542 (1991): 286–92.
- Holmes, S. J., and L. N. Robins. "The Role of Parental Disciplinary Practices in the Development of Depression and Alcoholism." *Psychiatry* 51 (1988): 24–36.
- Huether, Gerald. "The Central Adaptation Syndrome: Psychosocial Stress as a Trigger for Adaptive Modifications of Brain Structure and Brain Function." *Progress in Neurobiology* 48 (1996): 569–612.
- Huether, Gerald, Stephan Doering, Ulrich Rürger, Eckart Rütther, and Gerhard Schüssler. "The Stress-Reaction Process and the Adaptive Modification and Reorganization of Neuronal Networks." *Psychiatry Research* 87.1 (1999): 83–95.
- Koehl, M., A. Barbazanges, M. Le Moal, and S. Maccari. "Prenatal Stress Induces a Phase Advance of Circadian Corticosterone Rhythm in Adult Rats which Is Prevented by Postnatal Stress." *Brain Research* 759.2 (1997): 317–20.
- Kurzban, Brian, comp. *Fire and Gold: Benefiting from Life's Tests*. Oxford: George Ronald, 1997.
- McEwen, Bruce S. "Stress, Adaptation, and Disease: Allostasis and Allostatic Load." *Annals of the New York Academy of Sciences* 840 (1998): 33–44.
- . "The Neurobiology of Stress: From Serendipity to Clinical Relevance." *Brain Research* 886 (2000): 172–89.
- Meaney, M. J. "Maternal Care, Gene Expression, and the Transmission of Individual Differences in Stress Reactivity across Generations." *Annual Reviews of Neuroscience* 24 (2001): 1161–92.
- Meaney, M. J., J. Diorio, D. Francis, J. Widdowson, P. LaPlante, C. Caldji, S. Sharma, J. R. Seckl, and P. M. Plotsky. "Early Environmental Regulation of Forebrain Glucocorticoid Receptor Gene Expression: Implications for Adrenocortical Responses to Stress." *Developmental Neuroscience* 18 (1996): 49–72.
- Meaney, M. J., J. B. Mitchell, D. H. Aitken, S. Bhatnagar, S. R. Bodnoff, L. J. Iny, and A. Sarrieau. "The Effects of Neonatal Handling on the Development of the Adrenocortical Response to Stress: Implications for Neuropathology and Cognitive Deficits in Later Life." *Psychoneuro-endocrinology* 16 (1991): 85–103.
- Meerlo, P., K. M. Horvath, G. M. Nagy, B. Bohus, and J. M. Koolhaas. "The Influence of Postnatal Handling on Adult Neuroendocrine and Behavioural Stress Reactivity." *Journal of Neuroendocrinology* 11 (1999): 925–33.
- Mellins, C.A., M. Gatz, and L. Baker. "Children's Methods of Coping with Stress: A Twin Study of Genetic and Environmental Influences." *Journal of Child Psychology and Psychiatry and Allied Disciplines* 37 (1996): 721–30.
- Munck, A., P. M. Guyre, and N. J. Holbrook. "Physiological Functions of Glucocorticoids in Stress and Their Relation to Pharmacological Actions." *Endocrinology Review* 5 (1984): 25–44.

- Pieretti S., A. d'Amore, and A. Loizzo. "Long-term Changes Induced by Developmental Handling on Pain Threshold: Effects of Morphine and Naloxone." *Behavioral Neuroscience* 105 (1991): 215–18.
- Rak, Carl F., and Lewis E. Patterson. "Promoting Resilience in At-Risk Children." *Journal of Counseling and Development* 74 (March–April 1996): 368–72.
- Redei, Eva E., Nasim Ahmadiyeh, Amber E. Baum, David A. Sasso, Jennifer L. Slone, Leah C. Solberg, Claire C. Will, and Andreja Volenec. "Novel Animal Models of Affective Disorders." *Seminars in Clinical Neuropsychiatry* 6.1 (2001): 43–67.
- Russak, L.G., and G. E. Schwartz. "Feelings of Parental Care Predict Health Status in Midlife: A 35-Year Follow-up of the Harvard Mastery of Stress Study." *Journal of Behavioral Medicine* 20 (1997): 1–11.
- Rutter, Michael. "Protective Factors in Children's Responses to Stress and Disadvantage." *Primary Prevention of Psychopathology: Social Competence in Children*. Ed. M. W. Kent and J. Rolf. Hanover, N. H.: University Press of New England, 1979. 3:49–74.
- . "Resilience in the Face of Adversity: Protective Factors and Resistance to Psychiatric Disorder." *British Journal of Psychiatry* 147 (1985): 598–611.
- Sapolsky, R. M. "The Physiological Relevance of Glucocorticoid Endangerment of the Hippocampus." *Annals of the New York Academy of Sciences* 746 (1994): 294–304; discussion 304–7.
- Savi, Julio. *The Eternal Quest for God: An Introduction to the Divine Philosophy of 'Abdu'l-Bahá*. Oxford: George Ronald, 1989.
- Shoghi Effendi, *The Unfolding Destiny of the British Bahá'í Community: The Messages from the Guardian of the Bahá'í Faith to the Bahá'ís of the British Isles*. London: Bahá'í Publishing Trust, 1981.
- . *The World Order of Bahá'u'lláh: Selected Letters*. 2d ed. Wilmette, Ill.: Bahá'í Publishing Trust, 1974.
- Smith, Jan, and Margo Prior. "Temperament and Stress Resilience in School-Age Children: A Within Families Study." *Journal of the American Academy of Child and Adolescent Psychiatry* 34.2 (1995): 168–78.
- UNICEF. *State of the World's Children* 1996. <<http://www.unicef.org/sowc96/-index.html>>.
- Universal House of Justice. *To the Bahá'ís of the World*. Ridván 2000.
- Vallée, Monique, Willy Mayo, Françoise Dellu, Michel Le Moal, Hervé Simon, and Stefania Maccari. "Prenatal Stress Induces High Anxiety and Postnatal Handling Induces Low Anxiety in Adult Offspring: Correlation with Stress- Induced Corticosterone Secretion." *Journal of Neuroscience* 17 (1997): 2626–36.
- Vallée, Monique, Stefania Maccari, Françoise Dellu, Hervé Simon, Michel Le Moal, and Willy Mayo. "Long-term Effects of Prenatal Stress and Postnatal Handling on Age-Related Glucocorticoid Secretion and Cognitive Performance: A Longitudinal Study in the Rat." *European Journal of Neuroscience* 11 (1999): 2906–16.
- Werner, Emmy E. "High-Risk Children in Young Adulthood: A Longitudinal Study from Birth to 32 Years." *American Journal of Orthopsychiatry* 59 (1989): 72–81.
- . "Protective Factors and Individual Resilience." *Handbook of Early Childhood Intervention*. Ed. Samuel J. Meisels and Jack P. Shonkoff. Cambridge: Cambridge University Press, 1990. 97–116.
- . "Stress and Protective Factors in Children's Lives." *Longitudinal Studies in Child Psychology and Psychiatry: Practical Lessons from Research Experience*. Ed. A. R. Nicol. Chichester, U.K.: Wiley, 1985. 335–56.
- Werner, Emmy E., and Ruth S. Smith. *Vulnerable, but Invincible: A Longitudinal Study of Resilient Children and Youth*. New York: McGraw Hill, 1982.

Women: A Compilation of Extracts from the Bahá'í Writings. Comp. Research Dept. of the Universal House of Justice. Rev. ed. London: Bahá'í Publishing Trust, 1991.

Zaharia, M. D., J. Kulczycki, N. Shanks, M. J. Meaney, and H. Anisman. "The Effects of Early Postnatal Stimulation on Morris Water-Maze Acquisition in Adult Mice: Genetic and Maternal Factors." *Psychopharmacology* (Berl) 128 (1996): 227–39.