Hardwired to Connect:
The New Scientific Case for Authoritative Community

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A commission of 33 distinguished children's doctors, research scientists, mental health and youth service professionals was formed because of the concern over the rising rates of mental illness, behavioral problems and emotional distress among U.S. children and teens.

Their goal was to review what they saw as the fundamental inadequacies in our conceptual models for thinking about how to promote child and youth development.

The commission came up with six key findings that not surprisingly support the philosophy of Nurturing Parenting:

1. Humans are hardwired to form relationships.

   Biological systems predispose human beings to form and sustain enduring, nurturing relationships. Based on studies of both animals and humans, neuroscientists have come to understand that a complex system of hormones and other chemical messengers in the brain guides how we react to what's happening to and around us. An important part of the system biologically predisposes us to form and sustain strong attachments to other people. Let's start with sex. Sexual intercourse triggers a woman to release an attachment hormone, oxytocin, which stimulates her brain to feel both a sense of well-being and an impulse to become emotionally attached and to engage in nurturing behavior. Childbirth and nursing also trigger a spike in oxytocin (as well as seeing children and pets) triggering the same sense of well-being and desire to nurture. Women have higher levels of oxytocin than men who have higher levels of testosterone.

   We also know that some biological signals not only initiate but also powerfully reinforce the process of forming long-term nurturing relationships. Recent animal studies show, for example, that when male marmosets engage in nurturing behavior towards their pups, this triggers the release of more of the hormone prolactin, which, in turn, likely reinforces the father's impulse to continue the nurturing.

   Other studies indicate that similar hormonal feedback loops reinforce nurturing behavior in human males. Now, with human males, when a man becomes involved in a sustained committed intimate relationship, his testosterone level – and thus his biological drive toward both aggression and promiscuity – actually goes down significantly. In short, forming a long-term stable intimate relationship triggers the man's hormonal system to shift gears in a way that makes it more likely that he will want and be able to be a nurturing, supportive husband and father over the long term.

2. The presence or absence of a nurturing environment during childhood not only shapes a child's psychological and emotional development but also alters brain development in ways that profoundly affect long-term health.

   The Nature/Nurture Debate

   For thousands of years, we have recognized the importance of nurture in forming a child's character, but neuroscience is now beginning to show that the positive effects of nurture go far deeper, actually shaping a child's brain in ways that will provide lifelong health benefits. Sadly, a lack of nurture likewise affects brain development but in ways that may permanently increase a child's vulnerability to depression, social isolation, and other negative outcomes.

   A simple way to think about what happens is that when infants and young children grow up in a secure, highly nurturing environment, their brains develop in a way that helps them have healthy relationships with others and that helps them cope with stress. The emotional circuits that are used more frequently – the secure attachment circuits) develop more capacity, while those used less frequently – the stress circuits – develop less capacity.

   When, later in life, the child becomes a parent (or perhaps even takes on some other nurturing role) the biological experience of having been so well taken care of as a youngster will predispose him or her to take good care of the next generation.

   If, on the other hand, the child grows up in a highly stressful and non-nurturing environment, the opposite occurs. The child's brain develops a greater sensitivity to stress and less propensity for healthy nurturing behavior.

   The important point is this: For better or for worse, the presence or absence of early nurture actually affects a child's brain circuitry. The results become hardwired in a way that can profoundly affect lifelong behavior. While new research is looking for ways to enrich an older child's nurturing environment to compensate for early deficits, it is clear that early investment in supportive nurturing pays lifelong dividends.

3. Animal studies suggest that possible nurture may neutralize genetic vulnerabilities to depression and similar problems and perhaps even transform what would otherwise be genetic vulnerabilities into strengths.

   Animal studies suggest that the "nurturing effect" on a child's neurological development is in fact quite strong.

   In a long-term study of a colony of rhesus monkeys at the National Institute of Child Health and Human development over the course of several generations, scientists identified three genetic subpopulations within the colony. The first group had a genetic vulnerability to anxiety and timidity. When given regular access to alcohol, these monkeys drank heavily and steadily, mimicking the "self-medication" drinking pattern sometimes seen in humans suffering from depression or anxiety. The second subgroup was genetically prone to aggression, poor impulse control, and binge drinking. These monkeys were not well liked and often succumbed to early deaths. Finally, the third group was a group of super nurturing females – super moms – who cuddled and groomed their infants much more intensely than other mothers in the colony.

After identifying these three subpopulations, the researchers began an adoption experiment in which infants from the genetic subgroup prone to anxiety were raised by the super nurturing females. The researchers found that when raised by super moms, these monkeys' above-average rates of anxiety, timidity, and alcohol abuse disappeared. Strong nurture effectively neutralized the genetic vulnerability to anxiety and anxiety-related alcohol abuse.

Strong nurture had an even more profound effect on the second subgroup. No only did the group's tendency toward inappropriate aggression and binge drinking disappear, but members of the group actually became more successful than average in making their way to or near the top of the colony's social hierarchy. In this case, strong nurture transformed an inherited genetic vulnerability into a positive behavioral asset.

Unfortunately, the long-term effects of a lack of nurture are equally profound. Decades of research on human infants who have been deprived of their mothers has produced a remarkably consistent body of results. As they grow older, many of these children may be more likely than others to have difficulty forming more than superficial relationships, have little empathy for others, and possess a limited capacity to experience and express emotions. Clearly, the "nurture effect" is not to be taken lightly.

4. The nature of brain development during adolescence creates a continuing need for a nurturing environment.

The biologically-based need for a nurturing environment doesn't end with early childhood. Recent advances in neuroimaging demonstrate that significant brain growth and development continue through adolescence and into an individual's early 20s. And some of the challenging behavior patterns that we consider most characteristic of adolescents now appear to arise directly from the changes occurring in the brain during this period of life.

Adolescence is a period of particularly rapid change in the portions of the brain responsible for judgment and insight and in the functioning of some key neurotransmitters. Of particular interest are changes during adolescence in the activity of the key neurotransmitter Dopamine. Changes appear to cause what some researchers are calling a "reward deficiency." Translation: For the adolescent, any pleasurable stimulus, from music to drugs, may need to be especially powerful and intense in order to pass the adolescent brain's recently altered ('reward deficient') threshold for interest, pleasure, or excitement. Thus many teens' quest for adventure, novelty, and risk may simply reflect their efforts to feel good.

Teenagers may also suffer the consequences of risk taking more intensely than do adults. For example, young people who abuse alcohol and drugs appear biologically primed to suffer more harm than adults who do the same thing because of the distinctive characteristics of the adolescent brain.

Some of the moodiness and unhappiness we associate with adolescence also may be rooted in developmental changes in the adolescent brain, again involving changes in the functioning of various neurotransmitters (brain chemicals).

5. Human beings are biologically primed to seek moral and spiritual meaning, and nurturing relationships are a central foundation for positive moral and spiritual development.

   There are three aspects to this premise: (1) growing evidence indicates that we are biologically primed to seek moral meaning and a spiritual connection to the transcendent, (2) evidence points to a powerful interaction between the brain and the environment, and (3) nurture (or lack of nurture) plays a central role in shaping the substance of the child's moral and spiritual belief.

   What we believe is that children's moral and spiritual development is driven by their innate impulse – arising from the human brain's capacity for self-awareness – to try to understand their place in the world. This process begins in childhood and intensifies during adolescence. The universality of the process across cultures and across time strongly suggests that it reflects an inherent, biologically-based part of the human development associated with spiritual practices such as contemplative prayer and meditation again suggesting that our capacity and desire for spiritual experience are, to some degree, hard-wired.

   In turn, the particular moral and spiritual perspectives children and youth develop – altruistic and empathetic at one extreme, nihilistic and antisocial at the other – depend largely on the quality of children's relationships with the key adults in their lives, particularly their parents.

6. Nurturing relationships and a spiritual connection to the transcendent significantly improve physical and emotional health.

   As the foregoing evidence indicates, we are biologically primed to connect with other people and with moral and spiritual meaning and that individuals who follow these biological cues are likely to be significantly healthier and happier than individuals who do not. Studies of the health effects of marriage illustrate this point. One series of recent studies found that close sexual relationships, especially those of married couples, resulted in significantly improved health, including stronger immune systems and more rapid healing of wounds. Conversely, high-conflict marital relationships appear to weaken the immune system and increase vulnerability to disease.

   A large and growing body or research also demonstrates significant health benefits associated with religious faith and practice. For adults, religious practice correlates with improved overall health, increased longevity, higher levels of reported personal happiness, and a stronger sense of purpose in life. For adolescents, religious practice is significantly linked to higher self-esteem, more positive attitudes about life, reduced risk of intentional and unintentional injury, reduced substance abuse, and a range of other positive health outcomes.