

The Biology of Transcendence

by Michael Mendizza

All of us know intuitively that we are not by nature savage beasts. Fewer, however, are aware that we are driven to some fairly beastly behaviors by enculturation, despite the fact that the process itself is supposed to prevent this. This irony brings us to the fundamental struggle between society and culture, which is also the struggle between intelligence and intellect, evolution and devolution, spirit and religion, gospel and myth, heart and brain, love and law, creator with created.

A CAREGIVER'S PROHIBITIONS

Although the sizes of the hindbrain and forebrain are determined by the mother's emotional state while a child is in utero, the growth of the prefrontals is determined by mother-infant interactions in the first eighteen or so months after birth, and, you recall, *the prefrontals are critical to all higher intelligence and to transcendence itself.*

Allan Schore points out that growth and development of the prefrontals is experience-dependent, which means that the actual cellular growth and functioning of the prefrontals is dependent on appropriate stimuli from the environment. For a child in the first year and a half after birth, that environment is the mother: "Interactions with the mother directly influence the growth and assembly of the brain's structural systems that perform self-regulatory functions in the child ...and mediate the individual's inter-personal and intra-personal processes for life."

Not only does the extent of cellular growth depend on environmental stimuli, but the character or nature of what does grow and develop is determined by the same model imperative. "The physical and social context of the developing [child] is . . . an essential substratum of the assembling [brain] system... The tenth to eighteenth months mark the final maturation of the system in the prefrontals essential to regulation of affect [emotion or relationship] for the rest of that person's life."

(This observation must be qualified based on evidence that the prefrontals undergo a major growth spurt at adolescence, a discovery not commonly known when Schore was developing his theory.)

So, with the mother present to fulfill the model imperative, the toddler learns to walk, plunging with spontaneous excitement and abandon into his exploration of his new world and the interaction of his body and self with it, only to be met with an unexpected obstacle. Schore reports, "The mother of the eleven- to seventeen-month-old toddler expresses a prohibition on the average of *every nine minutes*, placing numerous demands on the infant for impulse control." (Italics are mine.)

By prohibition, Schore means the mother's NO! or DON'T—and, all too often, physical punishment—concerning some action the toddler undertakes, such as reaching for an object in the grocery store. The impulse control demanded by the mother is selective and arbitrary, determining what is permissible to be learned through exploration and what isn't.

While there are times when a mother is genuinely and legitimately concerned for a child's safety and well-being, above all she is concerned that the child learn to mind her and obey her commands as a matter of principle more than practicality. A good child is one who obeys and a good mother is one who has a good child. Both judgments are levied by culture.

In turn, the process of breaking down a child's resistance to these restrictions, which is equivalent to breaking his will, constitutes what is conventionally called socializing a child. Of course, as covered in our last chapter, this is not at all socialization, but enculturation.

And here Schore goes into great detail explaining, "Shame is the essential effect that mediates the socializing function." The authorities Schore quotes assume axiomatically that this "socializing" must be enforced; that prohibiting self-generated impulse actions is absolutely necessary; and that instilling a sense of shame is absolutely essential to such impulse control, leading to proper socialization.

In the final analysis, parental prohibitions extend to virtually all forms of tactile interaction. The untouched child is met with the command DON'T TOUCH! more than any other—and we adults are met with the same words regarding children...

THREATENING THE BOND

The mother can accuse and shame a child simply through her look. An accusatory or scolding look becomes a substitute for verbal command and warns the child that his action could break his bond with the mother and bring isolation. This shuts down the child's positive emotional state on which exploration and learning depend, leading to his withdrawal from that exploration out of fear of further threat to the bond with the mother. Schore puts it this way: "The mother utilizes facially expressed stress-inducing shame transactions which engender a psychobiological mis-attunement."

...Schore describes over many pages how each prohibiting NO! or shaming look brings the shock of threat, interrupts the will to explore and learn, and produces a cascade of negative hormonal-neural reactions in the child. Schore then describes at length the child's depressive state brought about as a result of these episodes of shame stress.

Jean Piaget spoke of a major characteristic of childhood being "an unquestioned acceptance of the given. "To the young child everything is as it is—wonderful, exciting, inviting, and entrancing—and all of it draws him into an intimate rapport and total involvement and interaction with the world. Once shame is imprinted, however, there will never again be "unquestioned acceptance of the given." Instead there will be a faltering hesitancy as doubt intrudes and clouds his knowledge of self and world.

The work of shame does not stop with doubt, however. Shame stress brings the same overload of cortisol and depression and withdrawal found in children who experience psychological abandonment or separation anxiety.

“Increased cortico-steroid levels are also found in twelve-month-old infants undergoing separation stress from the mother,” Schore notes, and, “[t]his condition results in avoidance of mutual facial gazing.” Mutual face-gazing is the foundation of all audiovisual communication and is primary in all brain development. In some autistic and many depressed children, eye contact, so critical to development in these earliest months, was not available when required and, when offered later, too often indicates hostility. As a result, eye contact is regarded by such children as threatening and is avoided.

Schore’s words should be writ large; they articulate the fall of the human from grace into culture.

THE GREAT NEURAL PRUNING

This brings us to the most critical of all Schore’s observations from his twelve years of work and 2,300 research citations. Delving into the negative aspects of our biology, this observation is the pivotal point of part 2 of this book. But first a reminder: The prefrontal lobes are experience-dependent; the environment must furnish the appropriate stimuli if full growth is to take place.

Yet, shortly after that major preparatory growth spurt in the prefrontal-limbic connection, nature deconstructs those very neural structures—and thus the very orbito-frontal loop that she has just established! Recall that the prefrontals are nature’s latest neural creation, and this orbito-frontal connection is the fourth brain’s link with the ancient emotional-cognitive brain and, through it, with our heart.

Schore relates that the emotional shaming experience the toddler undergoes brings about a “degeneration and disorganization of earlier imprinted limbic circuit patterns...[and] produces a wiring of orbitofrontal columns.” He then details not only how the actual neural growth of structure and hormonal balance in the child are impeded by shame, but also how shame actually brings about the deactivation, severance, and pruning of those very superabundant connections that have just been established between limbic and prefrontal systems. In Schore’s words, “a period of maximum synaptic excession occurs within the human prefrontal cortex at the end of the first year and thereafter declines... Such alterations are known to be related to functional use-disuse.”

The worst is yet to come, however. Far more devastating than this pruning is that nature then brings about a corresponding increase of the connecting links of the emotional circuits in this cyngulate gyrus with the lower survival fight-or-flight structures of the amygdale, that neural module linked directly with our ancient defense and survival system in the reptilian brain. In this way, a sharp curtailment of connections with the higher, transcendent frequencies of mind and heart is brought about in order to shift growth toward the lower, protective survival systems.”

This is, again, just what we observed happening to the brain of the infant in utero when the mother is subjected to anxiety. Nature has again provided an excessive amount of neural material for a movement toward higher intelligence, and again has had to retreat on behalf of survival. This will happen again and again, particularly in the parallel adolescent period when corresponding growth spurts once more take place between the emotional brain and prefrontal lobes. (Occurring at adolescence is an advanced form of maturing analogous to that of the early toddler stage, when emotional connections are again uppermost in importance.)

There is a precise devolutionary process occurring here. At this most critical time, when the toddler begins exploring the world, the prefrontals lose the very synaptic connections they have just made with the limbic system and, through it, with the heart, the connections prepared for during the in-arms period and throughout the general nurturing period of that first year. When all the rest of the brain is growing at its greatest rate and enormous world exploration is supposed to take place, the prefrontal-emotional connection is cut back, withdrawn. Which area of the brain is instead receiving that energy, attention, and stimulus for growth? Of course, it is the hindbrain and its emotional loop, busily building defenses against a world that betrays and can't be trusted.

This loss of prefrontal material is brought about because as the caregiver becomes the "socializing" parent, emotional deprivation takes the place of nurturing in that second year—and the excited, exuberant child is turned into a "terrible two." More is involved here than use it or lose it—we witness a major shift from higher levels of intelligence to lower levels of defensive instinct, a natural survival reaction of the child's system must make to a harsh emotional environment. And we applaud this as successful "socialization" of a child.

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