

What About The Children?



RESEARCH SUMMARY

Robin Balbernie, Circuits and Circumstances: The Neurobiological Consequences of Early Relationship Experiences and How They Shape Later Behaviour, *Journal of Child Psychotherapy*, vol. 27, no.3, 2001, 237-255.

This paper adds to the growing literature on the importance of child care in the early years based upon the latest research on the human brain. Although part of the paper is devoted to the minority of abused infants, its discussion on the development of the brain in the first 2-3 years is significant for all.

This significance has to do with 'neuroplasticity'—the ability of the brain to change its own structure in response to environment. It is in the first few years of one's life that the brain puts this ability to use most frequently and with maximum of ease and benefits. Human beings seem to be programmed by nature to learn intensively in the first 2-3 years of life so as to equip themselves to fit into their surroundings. Not surprisingly, therefore, they interact powerfully with their environments. However, for the baby the primary caregiver *is* the environment. The author draws upon relevant literature to assert that "a baby's emotional environment will influence the neurobiology that is the basis of mind. From the infant's point of view the most vital part of the surrounding world is the emotional connection with his caregiver" (p.237).

Between the birth of the baby and the time it reaches the age of 2 the brain develops as many synapses (connections joining the neurons of the brain in a functioning network) as an adult and by age 3 this doubles to about 1,000 trillion (p.240).

Depending on the stimulation provided by the environment some of these connections are reinforced till they reach a certain threshold where they become permanent parts of the brain; others not thus reinforced are eliminated later (a process that continues till the early years of adolescence). The "'instruction' to attend to the primary caregiver is genetic" (p.242) and through her behaviour the caregiver helps to reinforce some of the synaptic connections being made in the developing brain and allows others to die out. Perhaps the area of the "brain [most] strongly affected by the quality of the first, caregiving, relationship, and which subsequently plays a large role in governing how the individual meets the world is the orbitofrontal cortex...[whose development] depends upon relationship-based experiences that become aggregated into the internal working model of attachment" (pp. 242-43).

As a developing organism, the infant is very alive to perceived threats and dangers to itself in the environment and it is at this point that the primary caregiver, as the focal point of the baby's environment, must have the sensitivity to tune into the infant's internal state and have the inclination and ability to modulate that state within comfortable limits through such means as body language, tone of voice, touch and eye contact. Even such minutiae of caregiver-infant interaction as eye contact in the first year and parental disapproval of toddler behaviour in the second year are saved by the orbitofrontal cortex as models for behaviour in later life governing relationships with others, coping with stress, creating self-identity and feeling and exhibiting empathy with other individuals. In extreme cases of emotional neglect in early years the individual becomes predisposed to violent behaviour through altered brain functions (p.246), just as abuse or trauma may cause "hyperactivity, impulsive behaviour, anxiety and poor emotional control" (p. 246).

But even in case of the more ordinary and mainstream experience, “[A]s a general principle, it is now clear that: ‘attachment seems to be responsible for modulating the stress system’ [Eliot, 2001: 312]” (p. 248). The better is the early attachment between the primary caregiver and the infant the better will she cope with the frustrations of life when the time comes because “secure attachment can promote resilience” (p. 250). It has been demonstrated by “Gunner [1998]...that secure infants can cope with stressful events without their cortisol levels rising” (p. 250) (cortisol is produced in the body to cope with stress and affects general metabolism and increases the blood level of glucose to create a surge of energy [p.249]). This is not to say that the brain loses all capacity to rework its neuronal networks after the first few years but the task becomes considerably more difficult with each passing year. To sum up, the attachment relationship between the infant and the primary caregiver becomes hard-wired into the developing brain as the foundation for a balanced, secure and well-adjusted emotional life in adulthood.

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REFERENCE

Eliot, L. (2001) *Early Intelligence: How the Brain and Mind Develop in the First Few Years*. London : Penguin.

Gunner, M. (1998) ‘Quality of early care and buffering of neuroendocrine stress reactions: Potential effects on the developing human brain.’ *Preventive Medicine*, 27:208-11.

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