

as available or well known to American audiences.

The mother's development over her pregnancy period, preconception then month by month including the teratogens is included as well, and parallels the chapters on fetal development. In short, this book skillfully takes developmental psychology one step earlier, while at the same time addresses psychological life from the beginning. Kudos to technology, especially 3D and 4D sonography, that has made the womb, and thus prenatal behavior in utero, observable to make such a book possible.

The attractive book has as its cover Leonardo da Vinci's most famous anatomical drawing "Embryo in the Womb". The text was written, as Dr. Maret mentioned to me, for undergraduates (also good for graduate students). Thus, the material is in a scholarly, yet readable format, and well referenced. For anyone interested in having on their shelf the latest in the biological and psychological foundations of prenatal psychology, this book offers just that.

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The Philosophical Baby: What Children's Mind Tell Us About Truth, Love, and the Meaning of Life by Alison Gopnik. 2009. New York: Farrar, Straus and Giroux. (www.fsgbooks.com). 288 pp. ISBN-13:978-0-374-23196-5.

What is it like to be inside the brain of a baby or toddler? How is their interaction with the world different from the consciousness of an adult? These are the questions that cognitive scientists like Alison Gopnik ponder and research to discover the answers.

The main premise of this book is that according to evolutionary psychology the main purpose for the period of time from birth to age five is an intense period of learning and change. Gopnik argues that our genes do not tell the whole picture of the human being we are to become. By studying babies and young children, she has come to appreciate this human ability to change through interacting with our environment, especially other people in our environment. During the early years, our brain can engage in continuous experimentation and great creativity. As neuroscience has shown, the baby's brain has more neural pathways than an adult brain and through experience pruning of unused or little used pathways will occur. In this way, babies' can adapt to the particular cultural milieu into which they are born.

As a cognitive psychologist, Gopnik applies what has been learned

from psychological research and neuroscience to debunk a number of outdated ideas about the capabilities of young children. First, is the conventional wisdom of Freud and Piaget who theorized that young children are only capable of experiencing immediate sensations. Instead, new research has revealed that “children’s brains create causal theories of the world and these theories allow children to envisage new possibilities, and to imagine and pretend the world is different.” The second debunking is in the area of empathy and compassion possessed by young children. Piaget did not believe that young children could “take the perspective of others, infer intentions, and follow abstract rules.” Gopnik asserts that “literally from the time they’re born children are empathetic.” By one year of age babies can understand both intentional or unintentional actions and by age three have developed an ethic of care and compassion. Third, Freud and Piaget thought that young children could not tell the difference between “fiction and truth, pretense and reality, fantasy and fact.” Again, recent research has shown this not to be the case. In fact, two and three year olds can distinguish between imagination and pretense and reality and as Gopnik says, “They know that they are pretending.” In the chapter on consciousness and attention, rather than tackle the “Big Explanation of Consciousness”, Gopnik examines the way in which babies and adults have different ways of being aware of their environment. Babies have an expansive and panoramic kind of attention in which they “seem to be vividly experiencing everything at once.” She calls this ‘lantern consciousness’, which is less focused than adult consciousness. Based on neuroscience, babies’ brains have abundant cholinergic transmitters but little inhibitory transmitters (which develop later).

The chapter on memory examines episodic and autobiographical types of memory. She asserts that babies and young children have episodic but not autobiographical memory. Between the ages of four to six, a single autobiographical story that links the past and future is completed. Until then they don’t remember how they know about events and don’t remember their past attitudes about events.

The chapter on attachment and identity is familiar territory for those of us in the field of prenatal and perinatal psychology. The development of an internal working model of how people respond to them forms the basis for the expectations of other interactions. The shaping of our beliefs, which affect our actions and affect our experiences are formed in the unconscious. Finally, Gopnik reveals that early attachment patterns have both continuity and can change. The chapter on morality links imitation of facial expressions with the

development of empathy. She maintains that “babies are born knowing that particular facial expressions reflect particular kinesthetic feelings”. Imitation is the way babies learn about emotion and imitation is “both a symptom of innate empathy and a tool to extend and elaborate that empathy”. Young children are genuinely altruistic and an experiment with fourteen-month-olds showed that they try hard to help someone else. Eighteen-month-olds were found to be both empathic and altruistic in that they could feel the pain of others and try to make it better for the other.

In reconciling the information in this book with the work of Allan Schore and others, we can add to the description of the kind of attention and awareness that the baby has and see the connection to the development of the right frontolimbic system of the brain. Recent popular books such as “My Stroke of Insight” by Jill Bolte Taylor and “A Whole New Mind: Why Right-brainers Will Rule the Future” by Daniel Pink have explored the contribution of the right hemisphere of the brain to qualities such as emotional expression, context, synthesis, the big picture, inner peace and compassion. Reading the descriptions attributed to the right hemisphere is reminiscent of the descriptions of the baby’s brain and “lantern consciousness and awareness.” As Schore has said, the right hemisphere is dominant until the age of eighteen months to two years. When as adults we seek to improve our creativity, we often associate this with getting in touch with our underused and under-appreciated right hemisphere abilities including ‘softening’ our awareness from a narrow focus to a wider more diffuse focus. As we appreciate our earliest brain development which is right-hemisphere centered, we can find balance with the adult left-hemisphere based consciousness. Rather than an either or proposition, we honor the emotional aspects of our brain and our latent ability to see the whole picture.

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