

(SECOND ARTICLE)

The Location of Memory in the Prenate

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There are many studies nowadays that show that children and adults are able to remember their prenatal lives. This discovery raises very important questions. What is the nature of memory and where is it located? How is it possible to have memories of a time when the central nervous system was not fully developed or even existent? If a baby is capable of remembering his conception, from a time when he did not have a brain and a body, where are those memories stored? In Chamberlain's words (1990):

Memories close to birth are not hard to explain. We can probably assume that whatever equipment is in place at birth is probably in place a little earlier.

Memories that go back into the first and second trimester require a different explanation. (p. 178)

In order to answer these questions, it is essential to explore the notion of the location of memory, as it has been explored by many researchers in the last century. Gregory (1987) presents two major approaches to the localizability of memory: "Since at least the 1940s there has been a long-running controversy among physiological psychologists over the localizability or non-localizability of the memory trace" (p. 458). Localized models understand that memories are coded in identifiable structures of the brain, and non-localized models consider that memories are related to physiological structures but not necessarily reducible to them.

Jenny Wade (1996, 1998) explores in depth the theme of memory and consciousness in the newborn and adds a third category to the previous two models of memory: the non-physical or transcendent model. Each of these models, local, non-local and non-physical or transcendent, are supported by empirical data, but there is no fully systematic model and, it is fair to say, the data are not yet conclusive (Gregory, 1987).

Local Model

Different researchers have postulated the theory that memory is stored and retrieved in identifiable structures of the central nervous system (Mc Connell, 1962; Ungar, 1967; Wolfgram & Goldstein, 1987) based on the role of peptides as part of the chemistry of the brain. Daniel Siegel (1999) notes however that there is no “storage closet” in the brain in which something is placed and then taken out when needed. “Memory storage is the change in probability of activating a particular neural network pattern in the future” (p. 25). What gets stored are the probabilities of neurons firing in a particular pattern but not specific memories. Siegel explains how different structures of the brain relate to specific types of memory, like the amygdala and other limbic regions relate to emotional memory and the motor cortex relates to behavioral memory.

Van der Kolk (1996) postulates that the limbic system, an essential part of the midbrain structures, is involved in the storage and retrieval of memory. This information turns out to be very significant for prenatal and perinatal psychology because as Pert (1987) suggests, the limbic system is already partially mature after a month of gestation and fully formed by the third trimester of prenatal life, which gives neurological support to the notion that prenatals are capable of having memories from a very early time.

Non-local Model

Other researchers postulate a non-local approach when trying to understand the location of memory. Recent research on biochemical transmitters states that RNA, part of the nuclei that conveys genetic information, contains and transmits memory as well (Dossey, 1989; Rossi, 1990 as cited by Wade, 1996). This would be in line with Verny and Kelly's hypothesis about "organismic memory," according to which information is encoded in the cell. "I hypothesize that [memories] are laid down in individual cells; I call memory so derived 'organismic memory.' This would allow even a single cell such as an ovum or a sperm to carry 'memories'" (Verny & Kelly, 1981, p. 192). Verny also postulates the existence of a para-neurological memory system, which will be explored later on in considering the transcendent model. Cellular memory and the RNA model could represent a mechanism for prenatal memories from even the earliest stages of prenatal development (Dossey, 1989; Rossi, 1990 as cited by Wade, 1996; Verny & Kelly, 1981). Memories of this kind, however, do not appear to explain the existence of a self-conscious awareness and the specific, detailed memories that some preverbal children seem to exhibit through their behavior. I believe it is useful to differentiate between *cell-consciousness* and *self-consciousness*. In this context, it seems a cell is capable of forming memories and impressions based on its basic experiences and learning processes, which does not mean that cells are capable of holding the consciousness of the self or being of the person. Other authors like Wade (1998) believe as well that the memory stored within the cell is incapable of explaining the existence of a self-identity and the memories related to it.

Impressive as they are, these accounts of cellular memory do not support the idea that egoic awareness exists non-locally in the body. The results demonstrate an aggregation of individual cellular memories into an integrated system of bodily responses that may behave as though threatened or rejecting of the environment, but that is hardly the consciousness of socially-abstract mentation. (p. 132)

Transcendent or non-physical model

Transcendent or non-physical theories (as described in the first article) like the one presented by Besant (1999), Bohm & Peat (1987), Eccles (1989), Reyes (1949) or Sheldrake (1995a) offer a model where consciousness and memory predate the physical body and are not limited to the existence of the brain. These theories leave much room for explaining the existence of prenatal memories from the moment of conception and even from before that time.

Some researchers refer to preconception experiences and report hundreds of cases in which parents affirm connecting with their future babies before they were conceived (Carman & Carman, 1999; Hallett, 1995). This idea is also present in different traditions like the Hindu or Tibetan, as well as in the indigenous peoples of North America, Africa and Australia (Carman & Carman, 1999; Hubbell Maiden & Farwell, 1997). Emerson et al. (1999) present the case of a toddler remembering her experience before conception:

A couple had a little girl and a newborn son. The girl kept asking to be alone with the baby. Her parents were afraid to allow it because they thought perhaps she was jealous of her new brother and would harm him. Finally they agreed to the child's request, but they listened in through the intercom in the newborn's room.

The girl entered the room and at first all was quiet. Then the parents heard their daughter say to the baby: “Tell me about heaven. I’m beginning to forget.” (p. 31)

Dual source of consciousness and memory. These three models (local, non-local and transcendent) locate memory in different places (in specific structures of the brain, in the cell and outside the body). Experiments have shown that some people are capable of having a dual vantage point of consciousness, one within the physical form and the other outside of it. Wade (1998) refers to experiments and studies that comprise veridical prenatal and perinatal memories recalled by adults in therapy or experimental conditions (e.g., Chamberlain, 1986, 1998, 1988b; Cheek, 1986). In these instances “The only way to account for the following findings is to accept that a physically transcendent source of consciousness—or, at the very least, one that functions outside any known physiological processes—exist as a source of memory” (Wade, 1998, p. 133).

For Wade, the notion that consciousness exists independently and prior to a functioning brain is essential to explain the memories of birth that describe non-subjective events that have been validated by parents or clinical records. In fact, she has come to the conclusion, similar to Wambach (1979), that there is a dual vantage point (internal and external) in prenatals, two sources of consciousness present at the same time. The first one relates to a rather immature fetal consciousness (which includes impressions from changes in the chemistry of the placenta, sensation of pressure, auditory memories, impressions of emotions and even some rudimentary ego development). “The second are findings suggestive of a much more mature form of consciousness that transcends, or is separate from, the fetal body” (Wade, 1998, p. 136). This dual perception is present in the spontaneous accounts of small children as well as adults under hypnosis. Chamberlain

(1998) presents several accounts of adults recalling prenatal experiences that exemplify this dual vantage point, like the following one by David: “At times I feel like I’m somewhere in the room witnessing what is going on, and at other times I am the child and seeing it from that point of view” (p. 187). These two sources of consciousness and memory are clearly part of the same self, and one of these sources—the transcendent one—works independently from the brain and central nervous system. In the same vein, Verny and Kelly (1981) hypothesize the existence of a bi-polar model of memory as the only way to account for the existence of prenatal memories related to conception and the first six months of gestation.

Consequently, what I am postulating are two separate but complementary systems serving our memory faculties. One depends for its functioning on the establishment of the mature neurological networks that comprise the CNS-ANS and is operative by the sixth month after conception. This system obeys the laws of physics and chemistry. The other is a para-neurological system. We are not as yet cognizant of the laws governing this system. (p. 192)

McCarty (2004, 2006), as a culmination of her research into prenatal and perinatal psychology, consciousness, new physics and her own professional and personal experiences, presents a table of characteristics describing the human and the transcendental perspectives, and in this sense provides further insight into the laws that govern these two systems.

The transcendental awareness appears to function in the non-local, implicit order of reality, exists prior to incarnation and is continuously present ... The transcendent voice is absent of strong emotions and portrays a witness perspective

with tones of caring, compassion, and love that accompany the omni-wisdom characteristic of this perspective. (McCarty, 2006, p. 209)

Focused within the physical form and physical-emotional experience, human or biological awareness during prenatal development, as described by McCarty:

Is instinctual, non-reflective or implicit, somatic-emotional, adaptive, and at the core-relational ... The human self's experience is visceral, with strong emotions, and intricately related and responsive to mother's experience, the health of the womb environment, and the physical/emotional journey at birth. (McCarty, 2006, p. 209)

McCarty concludes that these two distinct vantage points, the transcendental self and the human self, once incarnated, work together as an Integrated Self.

Integrated or holonomic model. Experiments that support the notion of a dual vantage point of consciousness and memory (biological and transcendent) open the door to an integrated model of memory and awareness. McCarty (2004) explains how in the prenatal and perinatal clinical literature most of the testimonies refer to two dimensions of awareness: a transcendent and a biological human perspective. In the biological human perspective, McCarty includes not just brain-based sources of memory but cellular and somatic memories as well. McCarty (2004) explains the interconnection of these different dimensions—biological and transcendent—using the term Integrated Self and presents an integrated model of early development. “The integrated model of early development is based on the premise that in order to better understand our human self, we need to consider it in relationship to the transcendental self” (p. 92).

Wade (1996) refers to a holonomic theory of consciousness to describe a similar idea and writes as well about a dual form of consciousness, “where a physically transcendent source of awareness and a brain-based source of awareness coexist” (p. 249).

After studying these three different memory models—local (brain based), non-local (cellular and organismic) and transcendent—and following the synthesis presented by Wade (holonomic theory of the evolution of consciousness) and McCarty (integrated model), I believe a synthetic approach that includes both biological and transcendent sources of memories is the most comprehensive and best explains clinic data related to prenatal and perinatal memories, even from a period before the brain existed. The integrated and holonomic approaches are based in the notion that memory is holographic, and for this reason it is stored at all levels, in the brain, in the cells and outside of the physical body. From this perspective, memory storage is a dynamic, living, evolving feedback system that includes all levels holonomically (McCarty, 2004).

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Extracts from my dissertation titled:

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