

The Expanding Boundaries of Memory

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Publication info: Pre- and Peri-natal Psychology Journal 4. 3 (Spring 1990): 171-189.

[ProQuest document link](#)

Abstract: None available.

Full Text: Headnote ABSTRACT: In psychology, traditional studies have sought the boundaries of memory in specific brain structures thought to mark the beginning and limits of memory. Recent discoveries in neuroscience suggest new brain processes and chronologies relevant to memory. Advances in brain research and instrumentation have clarified some memory pathways and permitted direct observation of the living brain but these studies obscure the real boundaries of memory. A major breach of boundaries has come with verification of birth memories of children and adults. Superb memory abilities support a host of newly appreciated cognitive talents of newborns. Memory boundaries are enormously expanded by evidence of prenatal memory, gestation memory, and past-life memory which require radically different explanations. Evidence from the farther reaches of memory, accessed in non-ordinary states of consciousness, indicates that storage of memory is outside the bodybrain. In this perspective, memory appears to be an innate and ageless endowment of human consciousness. Psychologists and neurologists used to know the boundaries of memory. Few people could remember anything before age 3, probably because they had too little cortex and no language. Intelligence was not expected of the unborn, and even newborns were called a "brainstem preparation" obviously not equipped for perception and memory. Anything that seemed like memory was called a "fantasy." In medicine, brain and body were different realms. Clear boundaries separated the nervous system, endocrine system, and immune system, marking off the territory of specialists. A brain in coma or under general anesthesia was not expected to remember anything. Brain death would, of course, wipe out all memory. In psychology departments memory, learning, communication, and personality were taught in separate courses and probably had different developmental schedules. Consciousness was considered unsuitable for scientific study and thinking was taught in the philosophy department. That was how it was. Today most of these carefully set boundaries have been breached; in retrospect, they were illusions of convenience. Scientists now cross all disciplinary lines to probe the outer limits of memory and to scrutinize its microscopic pathways and incredible biochemistry. New discoveries make old theories quickly obsolete. At present no theory comprehends all the known facts of memory but a holistic approach is replacing the atomistic approach of the past. ADVANCES IN THE STUDY OF MEMORY Memory is expanding along all its borders. Memory does not begin at age two or three but stretches back to birth; newborns have led us to this truth. But memory does not begin at birth; it stretches backward to include prenatal memories as well. In crossing this boundary, it is the unborn who are teaching us. At still farther reaches of memory, even material boundaries have been bridged, as we learn from research into altered states of consciousness. The true complexity of memory is a recent discovery (Tulving, 1985). Scholars generally agree now that memory is not one but different systems (Luria, 1966; Pribram, 1969), not always unified, functioning as "modules" independently and in series (Gazzaniga, 1985), working both automatically and at will, limited and perhaps inaccurate (Loftus, 1980; McCloskey & Zaragoza, 1985), but in altered states, memory is sometimes remarkably reliable and clearly beyond previously accepted limits (Cheek, 1974; Stevenson, 1974; Raikov, 1980; Chamberlain, 1981; Grof, 1988: Part I). The lexicon of modern memory reveals both complexity and confusion: short and long term memory, autobiographical memory, semantic memory, affect, perceptual, and motor memory, declarative and procedural memory, "habit" memory, recognition and recall, explicit and implicit memory, embryonal imprints, holographic or cellular memory, anniversary memory, out-of-body memory, and past-life recall. Some of these extend completely beyond the "neurological substrate" which is supposed to contain them or make them possible (Stevenson, 1977; Grof,

1987). The immune system, itself newly discovered, seems to have a remarkable memory of its own. This system seems to start identifying and memorizing foreign antigens without waiting for the brain to blossom. Some believe this system deals with an average of seventy viruses at a time and will ultimately accumulate information to deal with perhaps a million different antigens (Badgley, 1987, chap. 1). Fortunately you and I don't have to do this consciously! Another memory, not much studied, is musical memory, displayed, for example, by a virtuoso pianist who can play hours of the most elaborate piano music on earth, all without a page of music. The marvel of music memory dawned on me one day when I realized I could often join in after hearing only three or four notes of classical music on the radio. I could rarely, however, remember who wrote it or what it was called-obviously a different type of memory. Astounding feats of memory (musical, mathematical, statistical) are occasionally displayed by "idiot savants" (Treggert 1989), the last persons we would expect to have a fabulous memory. A friend of mine (who is not an idiot) can recite a book of poems from memory. Research to unravel the mysteries of memory has naturally focused on the brain, especially live persons with brain injury or disease, or who have had radical types of brain surgery like the split-brain operation which separates the left from the right hemisphere. Very extensive experimental surgery on animals has led to identification of specific circuits and key relay stations for certain kinds of memory, e.g. circuits for visual recognition memory, spacial memory, circuits that connect emotions with memories, and senses with memories (Mishkin &Appenzeller, 1987). In animal research, investigators have learned how to inflict memory loss by various combinations of injury and disconnection of brain components like the hippocampus and amygdala in the limbic system. Combining such manipulations with psychological testing has led some neuroscientists to propose contrasting types of memory called "declarative memory" (knowing that something happened) apparently associated with the amygdala, and "procedural memory" (knowing how to proceed) associated with the hippocampus (Cohen and Squire, 1980; Squire, 1987). Others find evidence for an entirely different circuit for "habit," a memory which may be affiliated with the striatum. Independent of limbic circuits, this part of the forebrain is very ancient in an evolutionary sense and may help to explain how we (and our animal friends) learn things by constant repetition. But these are not the only brain structures related to memory. Damage to the thalamus and hypothalamus can also hurt memory as in Korsakoff's syndrome where alcohol plays a destructive role. Knowledge of brain processes is leaping forward with the help of new technology permitting direct observations of the living brain (Andreasen, 1988). Computerized tomography (CAT scans) and magnetic resonance imaging (MRD show brain dimensions in depth and perspective, revealing possible structural abnormalities. Other instruments go beyond structures and visualize functions of the brain such as regional cerebral blood flow (RCBF). Positron emission tomography (PET) can provide a metabolic map of brain activity including blood flow rate, cell metabolism, and blood volume being delivered to specific areas. Tests done with this elaborate technology have shown electrical and chemical changes in a single neuron as a result of learning. But even with the cyclotron and team of physicists and chemists required for PET, human memories are still invisible. This equipment pointed at the brain, powerful as it is, does not show us the expanded boundaries of memory. SETTING THE BOUNDARIES BACK TO BIRTH A major breach of boundaries has come with verification of cogent memories of birth from very young children and from adults of all ages (Chamberlain, 1988a). Birth memories have surfaced repeatedly in the last hundred years but they were generally denied for lack of a plausible explanation. Evidence for memory was pushed aside because of beliefs and presumptions having their origin in anatomy, perhaps the most certain of all branches of medical science. Who could argue with anatomy? Anatomy, as we were all taught, revealed the pitiful inadequacy of the newborn brain. It was unfinished and substandard, merely one quarter of its ultimate weight. Myelination, neuronal growth, axonal growth, and cortical networks could not compare with adult brains. As anyone could see, babies were incapable of upright posture, locomotion, coordination, had no language, and could do little more than sleep. Their senses were not developed but even if they were, the brain could not organize them into anything meaningful. Hence, in the name of science, infant cries were confidently described as "random sound," their smiles were "muscle

spasms," their pain a "reflex," and their memories a "fantasy." In reality, anatomy and brain science misled us. Although some of the facts were no doubt accurate, our assumptions and beliefs were erroneous. We were wrong in assuming that the brain parts which developed early were primitive and incapable of complex activity. Early parts do not lie idle until more important parts are added later. Myelin is not essential to nerve conduction, and nerve conduction is not the sole means of communication in the nervous system. Memory works regardless of the size and weight of the brain. And the muscle system, so obviously immature at birth, is no guide to what is going on in the mind. Thus, many traditional beliefs about the brain have become myths. As long as we believed them, it was nearly impossible to recognize that newborns were cognitive. It took two decades and massive evidence from other disciplines to prove that infants have all their senses, coordinate and use them fluently, have keen perception, communicate with us emotionally, speak with body, hands, face, and voice, and learn in all the classic ways that learning is tested. Obviously, they could not do all this with inferior brains (Chamberlain, 1987). In newborns, memory supports all cognitive activity such as learning and communication which appear to be innate rather than developmental. Making use of such innate talents, newborns demonstrate both memory and intelligence as they discriminate novel from familiar stimuli, display self-awareness in reacting to cry sounds, adapt themselves to unfriendly conditions when necessary, select preferred alternatives when available, and vigorously shape the environment to meet their needs and interests (Papousek & Papousek, 1981, 1987; Sternberg, 1988). Such modern perspectives provide a new context of credibility for the many signs of birth memory (and birth trauma) which have emerged again and again in the last hundred years. These include birth-related imagery and pathology discovered in psychoanalysis (Rank, 1929; Winnecott, 1949; Fodor, 1949; Feher, 1980), birth and womb memory in experiments with hypnosis (Rochas, 1911; LeCron, 1963; Raikov, 1980; Cheek, 1974), in the practice of hypnotherapy (Kelsey, 1953; Scott & Scott, 1984; Chamberlain, 1988-b), primal therapy (Janov, 1970, 1983; Farrant, 1986), LSD-assisted therapy (Grof, 1979; Lake, 1978), in various forms of body work (Diamond, 1981; Hendricks & Hendricks, 1987), yogic breathing (Ray & Mandel, 1987; Grof, 1988), and holding therapy (Laibow, 1988a, b). Validity My own introduction to birth memory came while I was working with a client in hypnosis who suddenly announced, "I see my birth! The doctor is holding me up, laughing, saying, 'see, I told you it would be a girl.'" Eventually I came to see that validity was demonstrated in the way the memories came up in hypnosis without solicitation, from persons who, like myself, knew nothing about them, and did not have any belief in them. It also struck me that their memories were distinctly personal and original, uninfluenced by any others, yet they had inner consistency, held up over time, contained facts not consciously known, and technical details of labor and delivery not expected from laypersons. Further validity was suggested by the way birth was remembered from the baby's location and point of view, and included things happening only to the baby which no one else could have known or reported in the baby's hearing. Finally, the reports contained secrets, information about delivery room accidents, violent acts of a parent, or offensive remarks which would not likely have been told to the baby by anyone involved. Reliability The reliability of birth memory, an important consideration in knowing how to interpret these memories, is something in which I have had a special interest. In research with ten mother and child pairs, I compared memories of the same birth obtained in hypnosis (Chamberlain, 1980/1986). Because this work has been reported elsewhere, I will only state here that the coherence and dove-tailing of their independent reports led me to conclude that birth memories, gathered in a disciplined way, were genuine recollections of experience. Though memory is not always perfect, the birth memories of grown children in my study proved to be a realistic guide to what actually happened. For abundant examples of birth memory, I urge you to read my book *Babies Remember Birth* (1988b). Another confirmation of birth memory is through learning because learning and memory go hand in hand. Birth-related fears and disturbed behavior are a type of learning where the memory is enshrined in the symptoms. I am indebted to Rima Laibow for this dramatic example. David, a ten-year-old, spent the first decade of his life constantly obsessing about sickness, spots on his skin, and a shadowy figure picking him up in the night. This involved years of the most extreme insomnia during which he would demand that his mother

come every fifteen minutes to look at him. One day during holding therapy, David suddenly recalled a scene from his birth. He screamed that he couldn't see through the blue haze but there were lights and shadowy figures. "I'm afraid, but you are coming to pick me up," he said, "I know it's you." Born with high bilirubin, David had been kept in the NICU where he was given phototherapy wearing protective blue goggles. It was in this blue haze that he became phobic of shadowy figures coming to pick him up. He had reason to be afraid but knew when his mother came to pick him up, and felt safe. Following this breakthrough in memory, his insomnia left! In a second case which reveals learning at birth, a child of nine years, again in holding therapy, exploded with a memory (Laibow, 1988-a). He saw his mother lying flat on her back partially covered by green cloths, her face masked, stomach cut open, and dead. He was being lifted up all bloody and believed that he must have killed his mother by cutting open her stomach. He had remembered his Cesarean delivery. Once home from the hospital, finding himself in an angry environment and afraid he might be killed himself, he quickly deduced that it would please his mother "if my mind is dead," and proceeded to be retarded. This is what he was for nine years until his unconscious memories of birth suddenly burst forth in holding therapy. In a short time after this revelation, he was placed in a class of normal children his age and proceeded to act normal! This clinical report is a warning to us about newborn cognition. Finally, proof of both the validity and reliability of birth memory, is found in the conscious birth memories of two and three year old children. Although still rare, these stories are multiplying now because parents are better prepared to listen, and know they can ask. I have gathered numerous examples of this type of memory in chapter seven of *Babies Remember Birth* (Chamberlain, 1988b). Like the children themselves, these memories are innocent, unpredictable, and expressive. With limited vocabulary children act out, point to parts of the body, draw pictures, provide motion and sounds, repeat conversations they heard, correctly report the actions of those present, and with pertinent questions, engage in astute criticism of how the birth was managed. Parents can easily validate these reports (Laibow, 1986). I'm sure this remarkable body of evidence will grow as parents realize they must ask children about birth when they first start to talk. If they wait a year or two longer the memories will slip into the unconscious memory bank. A serious look at these conscious birth memories of very young children should end academic debate about whether memory at birth is really possible. The children are teaching us about memory. We must not rob them of their contribution.

EXPANDING THE BOUNDARIES TO PRENATAL LIFE Another boundary of memory is presently being breached by the arrival of more and more memories of life in utero. This area of discovery raises many of the same issues which have surrounded birth memory but presents an even more profound challenge to understanding the relationship of brain to memory. The problem is that the farther back you go from birth, the more you run out of brain material to account for memory. This has led scholars to propose new concepts of memory storage and processing. Before looking at the theories, however, let us look at the memories themselves. In hypnotherapy womb memories are nearly as common as birth memories. Like many birth memories, they come without request and can sometimes be verified as true. Some memories are pleasant reports of everyday life; most, however, deal with life and death issues which have persisted into adult life as mental health problems. My client Loretta, while still in the womb, remembered her mother standing on the deck of a boat, holding tightly to a railing, tense, and trying to steady herself. "She's looking at an island. There are other people looking over the water, listening to someone tell them where they are going, explaining to them about the island. My father is standing by my mother, worried about her. He wants to know if she is all right. The rocking of the boat is making her sick. She sat down and is rubbing her stomach. I feel the motion on the stomach, the rubbing. My mother was rubbing me and she was worried if I was all right. She was relaxing me by rubbing." Loretta's mother and father were surprised to hear this story coming out of the third trimester of pregnancy. They said she had correctly reported their outing on a sightseeing boat but said they had never told her about it. Even if they had, it would not explain the empathy, perception, and clairvoyance found in her report. Shortly before her birth, my client Kim remembered her mother talking about her, telling her brother that she was going to be born. "He's asking, am I a boy or a girl? Well find out when I'm born in about two weeks.

She says if I am a girl my name will be Kimberly Sue. She doesn't know what it will be if I'm a boy." 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. This is the case with a host of memories of attempted abortion. My client Irene remembered an abortion attempt while in hypnosis. We had used an emotion (a very frightened feeling) to find the trail that led back to this womb memory: "It's too sad. I already remember it. I was hardly formed and my mom is using some kind of remedy to wash me away. It feels real hot ... I know she is trying to get me out of there. I'm just a little blob. I don't know how I know, but I know. My aunt seems to be giving my mom directions. I can hear her voice and another woman in the background. She is not supposed to get pregnant. She doesn't know me ... It didn't work either. It had a strong harsh smell, almost a disinfectant smell, like ammonia, strong, a vile, strong smell ... I can see where I was too; I was way up there, just teeny. I knew nobody really wanted me then ... but I was determined. I was a fighter even then. Poor mom would die if she knew I knew all this stuff!" Other hypnotherapists have also encountered these memories. Josephine Van Husen (1988) has written about forty eight survivors of abortion attempts and how the patients themselves had to teach her to appreciate and work with these memories. She learned that she could ask the size of the head in relation to the shoulders and calculate the prenatal age. She was impressed when some stories were confirmed by the mothers. An awesome sign of memory is the reactivation of forceps bruises or a blue area on the throat where a person was being choked by the umbilical cord! That these marks come and go with the memory is a sure sign that memory has been preserved somewhere. In experiments with deep regression in hypnosis, a Soviet psychologist found that authentic reflexes of the perinatal period could be reproduced (Raikov, 1980). Others have found that, under certain conditions, clients can access information of their own early gestation (Hubbard, 1950; Laing 1982; Lake 1978; and Grof, 1985). Many readers will know that Graham Farrant (1986) discovered in repeated primals that his mother had attempted to abort him. When he telephoned his mother and asked about it she denied it but after he described to her how she had taken a bunch of pills and gotten into a hot tub, she broke into tears and said, "You couldn't know this, I never told anybody." Graham calls these deeply ingrained unconscious memories "cellular" memories. Sometimes these memories blossom in time as if programmed by an internal clock (Earnshaw, 1983). In a study of veteran's nightmares, Van der Kolk (1987, p. 69-70) discovered that post-traumatic nightmares may recur, even after decades of latency, in response to important events such as puberty, marriage, birth of a child, illness, or retirement. In sleep stage II and HI (not REM) he reports that nightmares are usually exact eidetic recreations of the traumatic experience itself-a tribute to the durability of memory. Canadian psychologist Andrew Feldmar (1979) discovered a time factor in a series of adolescent patients with a history of more than five suicide attempts each, always at the same time of year. With extraordinary insight, Feldmar eventually determined that the suicide dates of four patients corresponded to the month in which their mothers had tried to abort them. They had no conscious knowledge of the abortion attempts which they were unconsciously acting out. What looked like "insanity" was in fact a memory. Feldmar discovered that they had even used a method of suicide similar to the method of the abortion, for example, by chemicals or by instruments. After discovering that their suicide attempts were seasonal intrusions of prenatal memory they were free of the compulsion. When their anniversaries returned, they never wanted to try suicide again. Prenatal memory is rich, varied, and seemingly impossible prompting whole new theories of memory as process rather than place (Rosenfield, 1988; Bolles, 1988; Roediger, 1988). Rosenfield sees memory as a reassembly of experience from "maps" and "categories." Moving even farther away from something corporeal, Bolles describes memory as a "creative living product of desire attention, insight, and consciousness." He remarks that one of the greatest surprises of memory research is that memory is not clearly distinguishable from thought. Karl Pribram (1986) speculates that the brain may function as a spectral analyzer recording images by holography, distributing the information to all parts of the brain. He does not say when it starts to function. Early function of memory is conceivable if one accepts the theory of Richard Bergland (1985) that the brain is a gland.

This theory reunites the nervous system with the endocrine system and thereby changes both processes and chronologies. The brain is a gland, Bergland claims, because it produces hormones, is outfitted with hormone receptors, is bathed in hormones, hormones run up and down the fibers of individual nerves, and every activity the brain engages in involves hormones. Note that the hormones that "drive" the brain are located all over the body. Thus, the "stuff of thought is everywhere. Candace Pert and colleagues (1985) discovered that some 60 neuropeptides (information molecules manufactured by nerve cells), each journeying to specific receptor sites, are the major means of information exchange within the brain and body. Now that their locations have been mapped by radioactive molecules, it is apparent that neuropeptides connect the nervous system, endocrine system, and the immune system. The unique role of the immune system is that some of its cells are not stationary like the brain but circulate everywhere. They are bristling with the specific receptors for neuropeptides and are in fact guided by neuropeptides to places where they ingest foreign bodies, repair wounds, and ultimately "decide" which cells to kill (tumors) and which to restore. Stationary receptor sites for neuropeptides are widely scattered through the body and brain, making body-brain one vast interactional communication system. Of special relevance to memory, Pert discovered so many receptor sites for neuropeptides in the brainstem that she says it is, in reality, part of the limbic system, which appears to play a key role in memory. Because the brainstem is already visible at four weeks from conception (and is not "primitive" as once assumed) one can find here a possible basis for very early memory. In Pert's view, the body-brain is the physical substrate of the mind, which has yet another "immaterial substrate"-the information that is flowing around in it (1987, p. 86). This is a new way of talking about memory, the faculty that accumulates information. Pert finds more evidence for mind in the way that a single molecular substance is capable of instantly changing its conformation within its membrane to assume different identities-a striking combination of wave-like and particulate activity. This strengthens her view of the body-brain as an outward manifestation of mind (Pert, 1987, p. 87).

THE FARTHER REACHES OF MEMORY Some of my clients have remembered events around their conception-an apparent impossibility. For example, Ingrid remembered her mother and father making love on a couch in Germany, before they were married. The doorbell rang to announce that Grandmother and Aunt had come back from shopping when they weren't supposed to. The encounter sent Shockwaves through all present. Ingrid says, "Mother was beside herself. She knew she got pregnant. She was ashamed. She didn't want to do it in the first place . . . She blamed me for her trouble." (Ingrid believed that this event created a pattern for her to be constantly afraid of, and guilty about hurting others, a problem which drew her into therapy. She also had a specific anxiety reaction to sudden sounds like the unexpected ringing of a doorbell or a telephone.) Another client, Ida, remembered trouble at her conception: "It wasn't right then," she said. "Mother was not in the condition for me to come in. She was drunk. It didn't seem right. It was not a holy time; it was a bad time. She didn't want to be there with my dad. She was mad at dad, forced to be there. She didn't want me there; it was just an accident. I could see that the time wasn't right for me to come in; I knew. Funny, that I would know that it wasn't right." Ida said she did not take up residence in her mother for three weeks and spent the interim floating in a comfortable place hard to describe and hard to leave. There were special swirls of light that felt good. "It's real peaceful," she said. I wish I could share it with you. It makes me want to cry because it feels so good." Later she said this was the greatest religious experience she ever had. Early, early memories like this present us with two interesting problems: 1) We run completely out of any physical material which might somehow be considered a basis for memory, and 2) We run into the very same quality of self-awareness, thoughtfulness, even virtue, that we have seen in all other memories regardless of age. Running out of physical material for memory is certainly the ultimate test for theories of memory storage. However, after 70 years of intensive research, no one has ever been able to say where and how the brain stores memories (Sheldrake, 1981). Karl Lashley sought for three decades to find the location of "memory traces" but ultimately gave up saying, "It is not possible to demonstrate the isolated localization of a memory trace anywhere within the nervous system" (Lashley, 1950, p. 478). In the 1960's, scientists thought they had found memory in RNA "memory molecules,"

but with new information that nerve cells are constantly changing and molecules are turning over in a matter of days, weeks, or months at most, RNA did not seem like a very good explanation for memories that might remain intact for the better part of a century. Neuroscientists believe they have come close to finding the storehouse of memory by surgically removing parts of the brain or severing vital connections, testing for memory loss, and then setting things right again. Like tinkering with a television set this dramatically interferes with pictures and sounds, and, sure enough, reinserting or reconnecting them brings back the lost sound and picture. But does anyone believe that these sounds and pictures are stored in or retrieved from the set? Biologist Rupert Sheldrake (1981, 1987, 1988), who points out the fallacy of this approach to the brain, favors the hypothesis that brains are, like TV's, tuning devices, and the storage is outside the brain and body. This makes memory itself non-physical, an idea which receives strong support from research with non-ordinary states of consciousness (Stevenson, 1977; Grof, 1987). Of particular interest to me are the reports of persons who have left their brain and body behind during a near-death or clinical death experience. During the time they are away from their bodies-which are often heavily anesthetized or traumatized-they are quite comfortable, entirely lucid, performing impressive mental feats like reviewing their lives in seconds, carry on important conversations, learn new facts, and sometimes even change their values and goals in life-all apart from body and brain. That they were actually away from their bodies is shown from the information they bring back, information not available in the geographic location where the body lay. Many such cases have been documented (Moody, 1967, 1988; Ring, 1980; Sabom, 1982). Cardiologist Michael Sabom (1982) has published the detailed memories of four patients who clearly viewed their own surgery from some point above the operating table, while body and brain were under anesthesia, they were surgically draped, and had their eyes closed. From these reports we learn something surprising about the nonphysical dimension of the ordinary senses. More dramatically, Sabom reports the case of a soldier with severe injuries from a "booby trap" explosion which perforated his eardrums and burned his eyes so he couldn't see for weeks. Nevertheless, in his out-of-body experiences he described in detail what he saw hovering over the battlefield and over the operating table, and later identified the surgeon's voice having heard it in surgery (1982, p. 64-75). Similarly, Raymond Moody tells of a seventy-year-old blind woman who went out-of-body during her heart attack and resuscitation. Afterward, she described everything with full sight including the shape and color of the instruments used, and the doctor's blue suit (1988, pp. 134-135). In addition to the fact that damaged senses work perfectly when outof-body, note that anesthetics have no effect and memory is excellent-showing that memory and other cognitive functions lie in a protected sphere outside the body. Further evidence of this remarkable fact comes from very young children who not only remember their birth experience but recall how they died, where they lived, and who their parents were in a previous life. Ian Stevenson (1983) compared the past-life recall of 266 Indian and 79 American children and was able to validate many of these memories. In 77% of the Indian cases a deceased person was found whose life correctly corresponded to the child's statements. He tells us that in Asia it is common for families encountering this memory in children to search for the past-life family. In many cases the search is successful and the two families meet and verify the child's statements, most of which are found to be correct (1983, p. 742). What is so important in these cases of past-life recall is that there is no physical connection whatever between one lifetime and another, meaning that memory must be non-physical, metaphysical, or spiritual in nature. If some part of our personal consciousness is alive and well outside the physical body/brain, then there is no reason why we may not remember conception, gestation, abortion attempts, or birth events. Over the last hundred years, great efforts have been made to tune into consciousness beyond the body, with some notable breakthroughs (Fuller, 1979; Leichtman, 1979). This larger perspective helps us answer the second big question about the unexpected maturity found in early memories, namely how is it that we find no shrinking of the self or lack of identity, no obviously compromised thought, learning, and communication as we move back in time? As a hypnotherapist I have always been impressed by the fact that memories, at whatever age you tap into them, always show mature and humane qualities. Critics are quick to say it is because the person

remembering is an adult, and it is adults who think like this. This theory hardly explains the wisdom of little Jason at 4 years of age comforting his mother who was grieving over the death of her mother. "Don't cry, you don't have to cry," he told his mother, "Granny's okay. I've been there before. This happened to me. I used to drink and drink, and got very sick . . ." The "tabula rasa" of John Locke is a misunderstanding. Infants do not wait for us to fill their minds; they are already thinking persons, ready to influence us, if we are ready to enter into dialog with them. Perhaps the word for what we share in common with infants is consciousness, human consciousness, something ageless. This commonality impressed me as I read Sabom's accounts of people who were clinically dead and out-of-body trying to communicate with their loved ones (1982, p. 32). I could immediately think of reports in the same words coming "out of the mouths of babes." Can you tell which is which? I couldn't somehow let her know that I was all right. Somehow I knew I was all right but I didn't know how to tell her. I just watched. (A 37-year-old, dying) Mom's still crying a little bit but not like before. I knew I was okay. I tried to tell everybody but they wouldn't listen. (A 23-year-old remembering birth) I was able to see that I was not there. I had left. I said, 'If anybody can hear me, I am going to be okay.' (51-year-old dying) I think it was my mother screaming because she didn't want them to take me away. I wanted to say something but I couldn't. (30-year-old remembering birth) In these examples newborns and adults are alike in their compassion and care but each is hampered by not having full use of the physical body at the time. Note, however, they are not handicapped in their thinking; thinking seems to be a universal language unlearned, innate, something all humans share. One baby, Marybeth, expressed herself this way while remembering her birth: "I felt warm, safe, content, a self-assured child, but very wise; a wise person in a child's body." CONCLUSIONS 1. I think we have been hampered in understanding memory by preoccupation with the physical parameters of the brain. This approach has long delayed the discovery of the true capabilities of newborn and unborn babies. 2. For most of a century birth memories have been called "fantasies" and prenatal memories "impossible." Actually, it was the false boundaries of memory set by psychology and neuroscience that were fantasies. 3. Neuroscience is not likely to contribute much to psychology, or psychology much to neuroscience as long as brain continues to be confused with mind. Brain studies do not tell us about extended realms of consciousness. 4. I disagree with the belief expressed by Mishkin and Appenzeller (1987, p. 80) that "ultimately, to be sure, memory is a series of molecular events." Molecular events do not reveal the true boundaries of memory. The wonder of human memory will never be expressed by how much glucose is burned in the amygdala or how many neuropeptides have congregated in the hippocampus. 5. I do not believe that the term "cellular" memory is accurate to describe prenatal memory because memory is possible without cells and memory endures while the cells do not. 6. The memory of newborn babies appears to be as good as memory can be. In many children birth memories are carried consciously for three years or so and then, typically, slip into the unconscious memory bank. 7. Memory may be an inalienable right of all persons, regardless of age; it seems to track our experience even under conditions of anesthesia, coma, brain injury, and damage to the senses. Although ordinary memory may be flawed, at a deeper level there is vastly extended memory, reachable in non-ordinary states of consciousness. 8. Memory is an essential component of self, learning, thinking, intelligence, and communication. I propose that we consider them inseparable and treat the whole cluster as a human endowment that is innate rather than developmental. 9. One of the sins of science in the last century has been ridicule and indifference to the evidence for expanded consciousness and memory. This scientific amnesia for birth, womb, and past-life memory has delayed discovery of who we really are. 10. The fact that even the most advanced memory activities can take place without benefit of body or brain means that memory is our faithful and constant companion on a long journey. R.D. Laing, in confronting the endless nature of regression back to birth, to intrauterine life, and to preuterine life, says "This might demand a transformation of one's whole Weltanschauung" (1982, p. 100)-a complete change in how we see ourselves and the world. Why not? It seems like a good idea to me. References REFERENCES Andreasen, Nancy C. (1980). Brain imaging: Applications in psychiatry. Science 239, 1381-1388. Badgley, Laurence E. (1987). Healing AIDS naturally. San Bruno, CA:

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Publication title: Pre- and Peri-natal Psychology Journal

Volume: 4

Issue: 3

Pages: 171-189

Number of pages: 19

Publication year: 1990

Publication date: Spring 1990

Year: 1990

Publisher: Association for Pre&Perinatal Psychology and Health

Place of publication: New York

Country of publication: United States

Journal subject: Medical Sciences--Obstetrics And Gynecology, Psychology, Birth Control

ISSN: 08833095

Source type: Scholarly Journals

Language of publication: English

Document type: General Information

ProQuest document ID: 198676376

Document URL: <http://search.proquest.com/docview/198676376?accountid=36557>

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Last updated: 2010-06-06

Database: ProQuest Public Health

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