

Prenatal and Perinatal Memories in Preverbal Children: Clinical Observations Using Videotape Examination

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Abstract: None available.

Full Text: Headnote ABSTRACT: This research study examined the hypothesis that preverbal children are capable of implicitly and explicitly registering their prenatal and perinatal experiences and of subsequently communicating these experiences through their behavior. It asked the question, Can trained observers accurately identify preverbal children's prenatal and perinatal experiences based on the children's behavior in a therapeutic setting? The study utilized mixed-method analysis, and accuracy was assessed according to the degree of correspondence between the observers' interpretations of behaviors and the pregnancy and birth history as described by the child's parents and/or his or her therapists). The results revealed a high degree of correspondence (72%) between observers' interpretations and the children's prenatal or perinatal histories, which suggests that the selected children's behaviors have a direct relationship to particular prenatal or perinatal experiences. From these results, we might make the inferential leap that preverbal children appear to be capable of accessing and reenacting memories from their prenatal or perinatal lives. If true, this has implications for our understanding of the importance of prenatal and perinatal life to the subsequent physical, emotional, and mental development and well-being of the child. KEY WORDS: prenatal memory, preverbal children, consciousness, prenatal and perinatal psychology. INTRODUCTION Throughout the past two hundred years, most medical and psychological professionals believed that prenatals and newborns are not conscious beings because their brains are not fully developed, and that preverbal children are not capable of memory. At the same time, another prevalent belief was that adults could not remember their lives before three years of age—a phenomenon called infantile amnesia—and that any memory of that time is a fantasy or a false memory (Chamberlain, 1990; Siegel, 1999; Siegel & Hartzell, 2003). The underlying assumption is that the mind is a function of the brain and that without brain function, capacities associated with the mind are not possible. As a corollary, after the brain is dead, the mind stops existing, too. During the past decades, research into prenatal life, near-death experiences, and reincarnation has shown an overwhelming number of cases that indicate that consciousness is independent of the brain and precedes the development of the central nervous system (Atwater, 1999; Chamberlain, 1999a; Ring & Elsaesser Valarino, 2000; Shroder, 2001; Tendam, 1990). At the same time, research has shown that prenatals and newborns are capable of intelligent communication and memory. This latter perspective, part of an emerging paradigm (Chamberlain, 1999a; Dossey, 1999; McCarty, 2002, 2004; Verny & Kelly, 1981; Wade, 1996), has clear and important implications for the way we meet and communicate with prenatals and newborn babies, as well as for how we support people in their process of dying. This new paradigm considers prenatals and newborns to be conscious beings capable of memory, mentation, intelligence, emotions, learning, and communication. Are Preverbal Children Capable of Remembering Prenatal Life? Psychologists and psychotherapists in past decades have reported cases of adults who spontaneously remember their prenatal lives and births (Chamberlain, 1999b; Cheek, 1986; Janov, 1983). These memories frequently have been corroborated by hospital records or information provided by the clients' parents. This has challenged the old belief about infantile amnesia and the supposed incapacity of prenatals and newborns to learn and communicate. Later studies have found that toddlers also are capable of remembering specific events in their prenatal lives and births, and that they are able to communicate these explicit memories once they start to talk (Ikegawa, 2002; McCarty, 2004; Piontelli, 2004; Rhodes, 1991). The present study was designed to explore the boundary even further and to examine the idea that preverbal children are capable of having implicit

and perhaps even explicit memories of their prenatal lives, something considered impossible by present neurobiology (Siegel, 1999; Siegel & Hartzell, 2003). Investigating how a child or an adult is capable of remembering his or her life in the womb during the final months of gestation when the brain is already formed-although not fully developed-is challenging. Explaining the existence of memories from conception or even earlier directly challenges the old paradigm that memories must be stored in the brain. A new paradigm is necessary to explain how anyone can remember something from a time when the brain was not even formed. The idea that consciousness is independent of the brain and precedes neurological development-and even more, the notion that consciousness exists before birth and after death-is becoming increasingly prevalent in some fields of research and thought. More and more scientists and doctors (Bohm, 1980; Morse, 1990; Penfield, 1975), therapists (Castellino, 1995; Cheek, 1986; Emerson, 1992; McCarty, 2004, 2006), and spiritual thinkers from the last century and before (Bailey, 1932; Blavatsky, 1888; Jurriaanse, 1978; Wilber, 1998) subscribe to this view when it comes to understanding human nature and the nature of the universe.

The Location of Memory in the Prenate The studies mentioned above 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? To answer these questions, it is essential to explore the notion of the location of memory, as it has been explored by different researchers in the last century. Gregory (1987) presents two major approaches to the localizability of memory. Localized models posit that memories are coded in identifiable structures of the brain, whereas non-localized models consider memories to be related to physiological structures but not necessarily reducible to them. 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 nonphysical or transcendent model. In this model, consciousness and memory predate the physical body and are not limited to the existence of the brain. Likewise, the source of consciousness and memory is considered to be outside the material plane; the brain is just the temporary instrument of reception. It is also important to point out that different experiments have shown how some people recall their prenatal and perinatal lives from a dual vantage point of awareness-one within the body and the other outside of it. If this is the case, and if memory and awareness can be simultaneously located both within biological structures (the brain or cells) and outside of them, then one could hypothesize that each of the three models (local, nonlocal, and transcendent) is valid, each describing an aspect of the totality. McCarty's (2004) Integrated Model and Wade's (1996) Holonomic Theory of Consciousness present, in my opinion, a synergistic perspective inclusive of these three memory models, including both biological and transcendent sources of memory capable of explaining prenatal and perinatal memories, even from a period before the brain existed.

METHODS This research study examined the hypothesis that preverbal children are capable of registering their prenatal and perinatal experiences both implicitly and explicitly, and of subsequently communicating these experiences through their behavior. Information cannot be gathered from children at this early age through language, but rather through observation of their movements and behaviors. Selected video clips of sessions with five preverbal children and their families were presented to five practitioners (observers) trained in prenatal and perinatal therapy. Each video clip included segments of one session with a preverbal child at the Building and Enhancing Bonding and Attachment (BEBA) clinic in Santa Barbara, California. I selected clips that I believed were clear instances of preverbal children communicating some aspect of their prenatal and perinatal experience (gestation or birth). The assumption was that in these chosen video clips children were expressing aspects of their prenatal and perinatal lives. Some expressed aspects of their prenatal or perinatal life in an implicit way-for example, by repeating the same movement patterns they did at birth. Others expressed facets of their prenatal or perinatal lives in an explicit way-such as the child who was transferred to a different hospital after birth, and during the session chose to repeatedly play with an ambulance and put a child inside it. The five

observers watched the video clips without knowing any previous history about the child and his family. They were asked to describe what they observed and to speculate about what the child was communicating through his movement and play. These descriptions were analyzed and compared to discover whether they concurred with each other, with the history of the child as presented by the parents, and with the observations of the facilitator who was working with the child and his family.

Instrumentation Two basic methods of data collection were developed and used to gather information from the observers: a qualitative interview and a quantitative questionnaire. Only the interview was used with the facilitators of the sessions. These facilitators knew the history of each child and were invited to read the intake forms of each child and his family to refresh their minds about the case before performing the interviews. In this study, interviews were performed via telephone due to the international locations of some of the observers and facilitators. After the interviews, the observers were presented with a multiple-choice questionnaire. Later, both interviews and questionnaires were compared with the history of the preverbal child and his/her family.

Interview questions (qualitative). The questions asked of the observers and facilitators in these interviews were designed to explore the main research question of this study: To what extent are prenatal and perinatal memories observable in the behavior of preverbal children during therapy sessions? To explore this topic, observers were asked three questions: 1. Do you observe any significant behaviors in this nonverbal child that might reflect events from the prenatal and perinatal period? Describe these behaviors. 2. Is there a theme that repeats in this nonverbal child's behavior? 3. Can you describe what the child seems to be communicating. 4. Are you aware of anything in the child's history that is related to what he/she is showing in the video clip? (The same three questions were asked of the facilitators of the sessions. In addition, the facilitators were asked question 4.)

Questionnaire (quantitative). After the interview, observers were presented with a multiple-choice questionnaire that asked them to select one of ten choices that would best describe the kind of prenatal or perinatal experience the child seemed to be communicating. The facilitators of the sessions did not respond to this questionnaire because they helped me select the video clips and already knew the "correct" answers. To avoid confusion, I tried to ensure that each video clip reflected only one possible answer, and I asked the observers to select just one answer for each video clip. I clarified that any of the ten answers might apply to more than one video clip. Ten choices were offered in response to the question, Which kind of prenatal or perinatal experience does this child seem to be communicating?: 1. Failure to progress at birth 2. Suction birth (vacuum extraction) 3. A birth with the cord around the neck 4. Ambulance transport 5. Multiple conception (three or more fertilized eggs) 6. Abortion survival 7. Use of heel sticks at birth 8. Intubation 9. Twin loss 10. Something else

Data Analysis This study combined quantitative and qualitative analyses. Qualitative data in the form of interviews were obtained, followed by quantitative data in the form of an observer questionnaire. Coding processes were used to convert the raw interview data into themes or categories for analysis. These data were then compared with the facilitator interviews and with the clinical intake forms that reflect the history of the children and their families. To analyze answers to the multiple-choice questionnaires, the applied statistical model used binomial probabilities and an alpha level of .05.

RESULTS In this section, I present the study results for one of the five video clips, which serves as an example of the way the data have been analyzed throughout the study. For a full presentation of the results, please consult my dissertation (Blasco, 2006). For the video clip, I do the following: 1. Introduce the relevant history of the child, drawing on the information presented by the parents on the intake form filled out during their contact with BEBA, and on information provided by the facilitator; 2. Provide my description of the behaviors manifested in the clip (with as little interpretation as possible), after having seen the clip at least a dozen times; 3. Present the facilitator's description and interpretation of the behavior of the child in the clip; 4. Present the themes that emerged from my interviews with the five observers and compare them to the interpretations of the session facilitator(s); and 5. Present the questionnaire results. To analyze the interview data, I followed Patton's (2002) prescription of first engaging in an inductive process, followed by a deductive one. That is, I first identified themes present in the observers' interviews and coded them before inferring any

conclusions; then, I engaged in the deductive process of establishing comparisons by arranging quotes from observers and facilitators in a tabular format, summarizing data, and drawing conclusions. After identifying and coding themes from the interview transcripts, I looked for convergent themes—instances in which two or more interviewees (whether a facilitator or an observer) put forth a similar interpretation of a particular behavior manifested by the child in the video clip. Next, I looked for unique themes—instances in which one observer put forth an interpretation of a particular behavior manifested by the child in the video clip that was not mentioned by any other of the observers or by the facilitator. Finally, I looked for divergent themes—instances in which two or more of the interviewees (whether a facilitator or an observer) had discrepant interpretations of a particular behavior manifested by the child in the video clip. Facilitator comments are included in the tables of convergent and divergent themes because their interpretations serve as a reference point to analyze observers' themes. Interpretations unique to the facilitator (not mentioned by any observers) are not included in unique themes because their comments do not serve the purpose of comparison to observers' interpretations. An analysis of the facilitators' unique interpretations, based on their knowledge of the history of the child and insight gained from their therapeutic process with the child is presented in the facilitator's description and interpretations section.

Video Clip: Sarah Herel present the first video clip used in this study. This video clip is a short segment of a clinical session with a child who will be called Sarah. Based on knowledge of the history of this child as presented by the mother on the intake forms at the BEBA clinic where the video clip was filmed, the interview with the facilitators, and my own observations, the facilitators and I perceive that in this video clip Sarah is relating her experience of being transported in an ambulance. During the video clip, Sarah chooses a toy ambulance from the shelf. She plays with several small figures and a phone in relationship to the ambulance.

Sarah's Birth Story Sarah was born at St. Frances Hospital by emergency C-section. While her mother stayed at St. Frances immediately after the birth, Sarah was transported about two miles away to Cottage Hospital, where she was taken to the neonatal intensive care unit. Sarah did not have contact with her mother for at least a day. During that time, her mother was actively working to call and find out about her baby and about how to get to Cottage Hospital and be reunited with her daughter.

Researcher's Description of the Second Video Clip Sarah is a 15-month-old girl. She is mostly nonverbal but has started to say a few words. Sarah is standing on the floor in the BEBA clinic pointing to an upper shelf of toys as she looks to Ray Castellino, one of the facilitators in the room. Ray picks her up so that she can choose the toy she wants from a shelf that was out of her reach. Ray asks what she is looking for up there. She chooses one of two toy ambulances sitting next to each other and brings it down to the floor with Ray's assistance. She pulls from under the ambulance a small plastic bed that fell out as they were lifting the toy down and examines it before handing it to Ray. She then turns the ambulance upside down. Several small objects fall to the floor, and she hands the ambulance back to Ray. One of the objects is the ambulance's driver, which she places back in the ambulance through the driver's window. She places another small plastic figure (probably a child) into the ambulance through the same window and then takes the ambulance back from Ray. As she does this, the two plastic figures fall out of the ambulance and onto the floor. Ray removes the top of the ambulance and Sarah takes two other plastic adults from the inside of the ambulance, handing each of them in turn to Ray. Then she picks up the child figure from the floor and hands it to Ray. She tries to remove a telephone from the ambulance, but it cannot be removed. Then she says twice, "Mommy?" And Ray says, "Where is the Mommy?" The sequence on this video clip lasts about two minutes. The sound has been purposefully kept in this video clip because the content of the conversation doesn't give any clues about the child's history but does help a viewer to understand what is happening in the moment. The conversation that happens during the clip is as follows: Ray: What are you getting up there? That one, OK...Oh, you want a tiger?... There you go. Sarah: Off. Ray: Top off.. .This one, and this one. A child. Thank you... The telephone stays in there. Sarah: Mommy? Mommy? Ray: Where is the mommy? Facilitators' Descriptions and Interpretations of Sarah's Behavior in the Video Clip Ray Castellino and Jean Weitensteitner were the two facilitators in this video clip. They were interviewed separately. Their interviews about this clip will

be analyzed and compared with the answers of the five observers. Ray Castellino's observations. Ray explains how Sarah wants the toy ambulance from the shelf. Once it is down, she puts two figures inside the ambulance, through the window. Then she asks him to remove the top of the ambulance. Ray thinks that Sarah is showing the part of her story in which she went on an ambulance ride to the hospital. Ray refers to the way Sarah says "Mommy?" and he thinks she is asking "Where is Mommy?" After that, Sarah looks to her mother in the room and back into the ambulance. He refers to how she was transported to Cottage Hospital immediately after her birth, and how her mother did not come with her. Ray thinks that one of the two figures Sarah put inside the ambulance probably represents her. Ray refers to the fact that Sarah has done a lot of work at BEBA around the separation from her mother during this time of her life, and for that reason, she does not show much distress during the clip. He thinks the sequence that Sarah is presenting in this clip is consistent and coherent from the beginning to the end; what she is showing is consistent with what happened to her, and she is very coherent in the way she shows it, without distress or activation. Ray summarizes this clip in the following way: I think she's showing the part of the story where she went on an ambulance ride and where she was separated from her mother. She was showing that someone was driving. There was a little baby there. I'm assuming that she is referring to herself, and then, where's her mommy? Jean Weitensteitner's observations. Jean explains that Sarah is pointing to the shelf as if she is interested in something specific from an upper shelf. Ray picks her up, and from a shelf full of toys she immediately reaches for the ambulance and pulls it down. Jean explains how this is not the first time Sarah had played with the ambulance during a session. Apparently, she did the same during a series of sessions. Jean does not recall Sarah being directly told about her history of being transferred by ambulance to another hospital. Jean recalls how at some point during the session Sarah says "Mommy?" and looks around the room and inside the ambulance. She explains that Sarah's mother did not go with her in the ambulance to the second hospital. Sarah went with other adults, who were unknown to her. At the same time, Jean remembers how Sarah's mother was making calls from St. Francis Hospital, trying to find out where Sarah was and trying to be admitted to Cottage Hospital to be with her. Jean points out that a gurney falls out of the ambulance when it is taken down from the shelf. Sarah picks up the gurney and looks at it. Jean is very specific about how Sarah plays with two adult figures and a child figure during this clip. First, Sarah puts the two adult figures and then the child in the ambulance, and later she takes the two adults out first and then the child. Jean explains how Sarah puts a toy figure through the window and into the driver's seat. After she puts the toy figure in the driver's seat, and then the child, Sarah asks Ray to remove the top of the ambulance. Inside the ambulance, she discovers an attached phone. She reaches for the phone and says, "Mommy?" As mentioned, soon after Sarah's birth, her mother was trying to find out where she was transferred and to get herself admitted in the same hospital. Jean and Ray did not know this part of the history for some time, but Sarah's mother told them later. Jean thinks it is significant that Sarah found a phone inside the ambulance and started calling out "Mommy?" Jean summarizes this clip in the following way: I think she's very clearly and directly communicating a sequence of a transport to a hospital, and coming out, and that there wasn't her mom around, and the place of looking for mommy. And communicating that she doesn't know where the mommy is, but she recognized that these other people, whomever else was there, didn't include her mommy. Interview Results I now present the findings from my interviews with both facilitators and five observers regarding this video clip. Providing verbatim quotes excerpted from the interview transcripts, I present, as an example, one of the six convergent themes, one unique theme, and one of the four divergent themes that I identified. Convergent themes. The six convergent themes mentioned above are, in the order of their degree of convergence among interviewees (the first being the most convergent and the last being the least convergent), (a) vehicle (ambulance, car, or bus); (b) mommy; (c) two adults; (d) child; (e) removing the ambulance top; and (f) no distress or activation. The following comprises data supporting the first convergent theme. Theme 1: Vehicle (ambulance, car, or bus). As shown in Table 1, all seven interviewees notice the presence of a toy vehicle in the clip. Some mention an ambulance, others a car, and others a bus. Unique themes. There is one unique category that appears in only one

interview-Theme 2: Sadness and collapse. Observer 5 thinks that Sarah seems sad at the end of the clip, after mumbling "Mommy?" and that she goes into a "collapse": But the look on her face at that point was kind of in a gaze, haze, I don't even know if she made contact with her mother or not, with her eyes. She just seemed really, at that point, sad, and went into a collapse kind of thing. Divergent themes. Theme 3: One child or two children. As shown in Table 2, both of the facilitators and three of the observers speak about the figure of just one child or baby. Observer 3 thinks that there are two figures of children in this clip. Questionnaire Based on what we know about Sarah's history and on our observations of the clip, the facilitators of the sessions and I think that Sarah is showing how she was transported by ambulance immediately after birth. For that reason, the "correct" answer to the questionnaire given at the end of the interview was ambulance transport (see Table 3). Three observers answered ambulance transport. Observer 3 chose abortion survival-it seemed to him that in a pregnancy prior to Sarah, the mother might have had a miscarriage or an abortion. Observer 5 selected something else (without providing any further explanation). Using binomial probabilities with an alpha level of .05, and given a 1 in 7 probability that the observers would select the anticipated answer, it is statistically significant that three of the five observers identified the expected answer, $p < .05$ (one-tailed). In other words, it is improbable that the observers selected the answer by chance. General Results In this article I am presenting only Sarah's case but the whole study was composed of 5 different cases. In each case, after the interview, observers were presented with a multiple-choice questionnaire that asked them to select one of ten choices that would best describe the kind of prenatal or perinatal experience the child seemed to be communicating in each video clip. The questionnaire produced a total of 25 "trials" (i.e., 5 clips multiplied by 5 observers). The observers chose the "correct" answer 18 out of 25 times. Using binomial probabilities with an alpha level of .05, there were significantly more correct answers than would be expected by chance, $p < .001$ (one-tailed). Further, all five of the observers identified significantly more correct answers than chance alone would predict, $p < .05$ (one-tailed). Finally, there were significantly more correct diagnoses of Clips 1, 2, 3, and 5 than would be expected by chance, $p < .05$ (one-tailed). These findings, shown in Table 4, provide compelling evidence that the observers' selection of the "correct" diagnoses of the prenatal or birth experiences reenacted in the videos were not random events or lucky guesses.

TABLE 1
Clip 2: Theme 1: Vehicle (Ambulance, Car, or Bus)

Facilitator A	"She wants the ambulance toy from the shelf...Well, I think she is showing the part of the history where she went on an ambulance ride and where she was separated from her mother."
Facilitator B	"What she did was she was looking around & pointed to the shelf, she wasn't tall enough to get up there but one of the facilitators picked her up, and she chose immediately to reach for the ambulance and pulled the ambulance down... There was a series of sessions where she focused in on the ambulance, on that sequence, and it didn't come from somebody naming it...I think she is clearly & directly communicating a sequence of a transport to a hospital."
Observer 1	"She is playing with the ambulance ... So it might be the way she went to the hospital."
Observer 2	"And it is just a curiosity around her selecting the ambulance ... My guess, is that she was, for whatever reason there was a necessity to go to the hospital, in the ambulance."
Observer 3	"What I observe is this desire for Sarah to have this car. She wants the car from the shelf. And the car, she is really interested in having this car and opening it, and she wants this car with what is therein."
Observer 4	"Possibly there was an ambulance ride or a ride in the car... Possibly, in terms of the past, that there was a ride in the car. Or, it looks more like a bus or an ambulance."
Observer 5	"This child sees a toy, a specific toy, Ray brings her up to the specific toy which she takes ... [it's a] car."

TABLE 2
Clip 2: Theme 3: One Child or Two Children

Facilitator A	"It looked like a baby."
Facilitator B	"And then puts in a child."
Observer 1	"She is handling the little child."
Observer 2	"And child."
Observer 3	"What is really interesting is that she put two children into the car and takes later two children out of the car ... The theme is about these two children. She puts in the car, and then she puts them out of the car again."
Observer 4	N/A
Observer 5	"Here's the baby."

TABLE 3
Clip 2: Answers to the Questionnaire

Observer 1	"Ambulance transport."
Observer 2	"Ambulance transport."
Observer 3	"Abortion survival."
Observer 4	"Ambulance transport."
Observer 5	"Something else."

TABLE 4
Survey Findings

Observer	Subjects					Number Correct
	Clip 1: David	Clip 2: Sarah	Clip 3: Lucas	Clip 4: Mary	Clip 5: Eva	
1	1	4	9	8	2	5**
2	1	4	9	9	6	3*
3	1	6	9	9	2	3*
4	1	4	8	8	2	4**
5	1	<i>10</i>	9	9	2	3*
Number Correct	5**	3*	4**	2	4**	18***

Note. Italicized numbers represent incorrect answers. The nominal numbers in the table represent the answers the observers chose on the survey: 1 = failure to progress; 2 = vacuum extraction; 4 = ambulance transport; 6 = abortion survival; 8 = intubation; 9 = twin loss; and 10 = something else. * $p < .05$, one-tailed. ** $p < .01$, one-tailed. *** $p < .001$, one-tailed.

DISCUSSION Summary of the Study In this study, I have investigated prenatal and perinatal memories and imprints in preverbal children. These memories are difficult to assess, because very young children most readily communicate through their actions and behaviors rather than through verbally explicit conversation. Therefore, the study was based on the observation of the behavior of preverbal children during videotaped therapy sessions. Five cases were presented to five therapists trained in the field of prenatal and perinatal therapy. Two basic instruments were used to gather information from the observers in this mixed-method study: an interview and a questionnaire. The facilitators of the videotaped therapy sessions were also interviewed, and their answers were compared with those of the observers. A binomial distribution was used to analyze observers' answers to the multiple-choice questionnaire. The observers chose the expected answer 18 of 25 times (72%). Using binomial probabilities with an alpha level of .05, there were significantly more correct answers than would be expected by chance, $p < .001$ (one-tailed). Seventy-two percent of the time, observers were able to relate certain behaviors in the preverbal child with aspects of the child's prenatal or perinatal experience, without knowing anything about the child's history. From this, we might make the inferential leap that the preverbal child is re-experiencing implicitly, or even recalling explicitly, specific prenatal or perinatal events. The implications of these findings will be discussed later in this article.

Findings Related to the Literature The pioneering idea that adults are capable of remembering prenatal and perinatal events has been presented by psychologists and psychotherapists in the past decades who have found cases of adults spontaneously or under hypnosis remembering their prenatal life and birth (Chamberlain, 1999b; Cheek, 1986; Grof, 1992; Janov, 1983). This in itself challenges the belief about infantile amnesia and the supposed incapacity of prenatals and newborns to be conscious and remember. Later studies have found that toddlers also are capable of spontaneously recalling specific events of their prenatal life and birth, and that they are able to communicate these explicit memories once they start to talk (Ikegawa, 2002; Piontelli, 2004; Rhodes, 1991; McCarty, 2004). I have not found any previous study that explores the possibility of preverbal children having implicit or explicit prenatal or perinatal memories and being able to communicate these through their behavior and play. My study intended to explore this possibility and to examine the idea that preverbal children are capable of having implicit and perhaps even explicit memories of their prenatal and perinatal lives, something considered impossible according to the understanding of contemporary neurobiologists (Siegel, 1999; Siegel & Hartzell, 2003). It appears to me that, in

four of the five cases presented in the original study, the memories involved are more implicit than explicit. Implicit memories, as described by Siegel (1999), are behavioral, emotional, perceptual, or somatosensory. For example, David, a 6-month-old child, shows body movements similar to those he experienced when he got stuck during his birth. Mary, in another clip, puts tubes down her throat, producing a sensation similar to that which she probably experienced while being intubated at birth. In these four cases, my perception is that the children do not seem to be trying to communicate their stories in explicit ways, as if they were consciously recalling specific events that happened to them. They are just showing their story implicitly in the way they move their bodies, behave, or display their emotions. As is explained in the literature (Kosslyn & Koenig, 1992; Menzies, 2002; Siegel, 1999; Siegel & Hartzell, 2003), in the case of implicit memories, the subject does not have the internal sensation of something being recalled and does not connect this internal experience with something that comes from the past. Obviously, I am not able to determine what the internal experience of these children is, but I can hypothesize that these children do not seem to be consciously trying to communicate what happened to them in their prenatal or perinatal life. Instead, they are just showing movements and behaviors that make observers believe that they are portraying events that occurred during their prenatal or perinatal experience. On the other hand, in Clip 2, Sarah seems to be accurately reproducing specific events in a symbolic manner, using toys available in the room. This points in the direction of her having explicit autobiographical memories. In this instance, Sarah is putting a toy figure of a child and two adults in a toy ambulance, paralleling her history of being transported by ambulance to the hospital after birth. Her mother did not come with her, and Sarah is asking for her during the clip when she uses the word mommy. Sarah is 16 months old. The literature states that at about two years of age children start to be capable of forming explicit autobiographical memories, from that point on (Siegel & Hartzell, 2003). Sarah's case may demonstrate that a 16-month-old is capable of explicit autobiographical memories, not only of current events but also of her past-including the prenatal and perinatal period-something not possible according to Siegel (1999). Other researchers and therapists have hypothesized that verbal children are capable of recalling explicit memories of their prenatal and perinatal lives (Ikegawa, 2002; McCarty, 2004; Piontelli, 2004; Rhodes, 1991). I suggest that preverbal children may also be capable of having explicit memories of their prenatal and perinatal lives, although this is very difficult to assess because they are unable to use words to communicate such memories. This assertion challenges the present understanding of when explicit memory becomes possible-around 18 months of age, according to Siegel's (1999) work. When I asked Ray Castellino (personal communication, June 13, 2006) his opinion about 16-month-old Sarah having explicit memories, he responded: Explicit memory is possible anytime prior to 18 months of age. This is a rather radical statement to make. In order to theoretically comprehend this, we have to shed the conventional view of the mind-brain alliance and garner an energetic paradigm more aligned with the East than the West. . . . From this radical paradigm you can make a statement that explicit memory is entirely possible prior to 18 months of life. The primary reason is that in this paradigm consciousness and mind preexist or exist before the development of the nervous system. Cellular development and physical physiology is organized by the mind. Implicit and explicit memory then preexist the body. Implicit memory exists as energy movement and emotion prior to the advent of soma, cells, and tissue. In the same way, explicit memory exists as images and sounds prior to the advent of soma, cells, and tissue. In my opinion, Sarah's ability to have autobiographical memories at that early age could be explained by the concept of a dual source of consciousness and memory (as described before)-one dependent upon the development of the physical form and the other independent of it. Although Sarah's brain may not be mature enough to produce explicit autobiographical memories, her transcendent self, working independently of the brain and central nervous system, would, according to this theory of memory, be capable of producing them. As Wade (1998) explains: "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-exists as a source of memory" (p. 133). Sarah's story is, of course, an anecdotal case; further research is needed to

determine when children begin to recall explicit memories. Limitations One limitation of this study is that the validity of the thesis presented cannot be proven. Rather, an inferential leap is required to claim that the child's behavior reflects his or her prenatal or perinatal history. Even when all the observers of the original study correlated the same infant behavior with a specific prenatal or perinatal trauma, I cannot argue conclusively that the child was engaging in this behavior because she was actually remembering an early experience. Although it is statistically improbable that the observers selected so many of the "correct" answers by chance, I cannot state with confidence that their identification of the answers confirms the following hypotheses: (a) that babies have memories of their births, (b) that preverbal children communicate those memories behaviorally, and (c) that trained observers can accurately identify the memories that preverbal children communicate behaviorally. I can speculate about these hypotheses, based on clinical observations, but future studies will be needed to systematically investigate the validity of the link between particular prenatal or perinatal experiences and infant behaviors. Those studies will face the same challenge this study faced (i.e., without verbal communication from the child, we cannot ultimately know what the child is thinking, which kind of memories he is having, or what he is trying to communicate). Another limitation of this study is that all observers and facilitators, including the researcher, went through the same prenatal and birth training facilitated by Dr. Raymond Castellino, and that all share the belief that people (including preverbal children) are able to remember their prenatal and perinatal experiences and to reenact these experiences in their daily lives. Moreover, Dr. Castellino has trained the researcher, the observers, and the facilitators to observe and interpret infants' behavior. Therefore, there may be a bias toward perceiving the type of behaviors and interpretations learned in the training. In retrospect it seems that, although the observers were purposely chosen for their skills in identifying prenatal and perinatal patterns, potential bias in favor of my hypotheses might be avoided by choosing observers unaware of my hypotheses, not already familiar with any of the individuals depicted in the videotapes, and not trained in or affiliated with the BEBA clinic or with Castellino's work. This study enables me to speculate about my hypotheses based on clinical observations, but it does not offer confirmatory evidence. Rather, it offers suggestive clues and indicators that should encourage future research in this area. Implications The results of this study favor the notion that preverbal children are capable of remembering, implicitly or maybe even explicitly, their prenatal and perinatal lives. This pioneering idea has the potential to change the way we receive babies into the world and the way we treat preverbal children who are unable to communicate their needs through words. Making society aware of the tremendous capacities of prenatals and infants-including their capacity to remember, to communicate, and to be aware of what happens to them and their environment-should imply changes in the way we practice medicine, health care, and infant psychology, and in the way parents welcome and communicate with their unborn and newborn babies. Our newborns often experience a bewildering array of interventions as they come into the world and during the first hours of their lives, including mechanical or chemical interventions during their births. They also often undergo postnatal procedures that are performed without the awareness that the newborn is a fully sentient, conscious being. If all professionals involved in the lives of newborn babies and infants, as well as parents, family, and society in general, become aware of children's innate capacity and their ability to remember and become imprinted by the way they are treated in these initial moments of their lives, I expect we will probably treat prenatals and babies with much more care, respect, and appreciation. This realization could have important implications for infant and child mental health, in terms of assessment and intervention. I also believe that training professionals to observe and recognize the imprinting of prenatal and perinatal experiences in the behavior of children would allow these professionals to recognize important clues in counseling families and helping parents to understand and to optimize their communication with their children. This research study is immersed in the understanding that infants are whole beings with a transcendent self expressed in a human form. I also believe that this understanding has the potential to help us shift into a different way of perceiving not only infants but also humanity as a whole. I believe every child has the right to be welcomed into the world as a conscious being who

is able to communicate and remember his or her experiences. If we treat our children with love, respect, and understanding, they in turn will have the imprinting to treat others the same way. This could have phenomenal implications, and in a few generations, we could be changing the world and transforming it into a much better place.

Recommendations for Future Research My study showed that in 72% of cases, five trained observers were able to identify correctly what a child was showing in his or her behavior and to relate it to events from the child's prenatal or perinatal history. This is the first systematic study to examine whether trained observers can identify preverbal children's birth and prenatal experiences. The compelling nature of the findings suggests that this is a fruitful avenue for further inquiry. One recommendation for future research is to conduct the same study, but to use untrained observers (i.e., participants that have not been trained in prenatal and birth therapy), to determine whether they too are capable-and to what degree-of perceiving relationships between a child's behavior and his or her unknown prenatal or perinatal history. If such capability is found, this observation could help eliminate the objection that the interpretations of trained observers are unduly influenced by their own biases and prior training. A second recommendation for a future study would be to present observers with a full one-hour therapy session rather than just a selected short clip. During an hour-long session, I suspect the preverbal child would engage in many behaviors, some related to their prenatal or birth history and others not. Still, such a study would allow observers to identify the prenatal or birth history of the child without knowing anything about the child's past. This study could be implemented with two groups: one made up of trained observers and the other with untrained observers. The results from the groups would be analyzed and compared. A study like this will help eliminate the objection that short segments selected from an hour-long session predispose observers to focus only on behaviors that the researcher feels are related to the child's prenatal and perinatal history. A final recommendation for future research would be to design a case study in which one specific behavior of the child (e.g., playing with ambulances) is studied longitudinally over multiple sessions at the BEBA clinic. The study would aim to analyze the clips that portray this kind of activity (playing with ambulances) and to compare those clips with each other and with the history of the child to determine to what degree the child's play is consistent with and reflects his or her prenatal and perinatal history. This study might help to eliminate the objection that a behavior occurring once may be due to chance and may not necessarily have a relationship to some specific prenatal or perinatal experience.

Final Thoughts The intention of my work has been to design a research project that would explore the idea that infants are conscious beings whose memories are not confined to their physical brains and central nervous systems. During my research project, I studied the possibility that preverbal children have birth and prenatal memories from a time when their brains were not fully developed. My small study favors this hypothesis, contributing to a body of research that includes consciousness as one of the principles ordering who we are. I hope this exploration into the consciousness and memory of preverbal children will support others in understanding infants more deeply and honoring who they are.

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