PRENATAL AND PERINATAL MEMORIES IN PREVERBAL CHILDREN:
CLINICAL OBSERVATIONS USING VIDEOTAPE EXAMINATION

A Dissertation Proposal Submitted in Partial Fulfillment
of the Requirements for the Degree of Doctor of Philosophy
in Clinical Psychology
Specialty in Prenatal and Perinatal Psychology

by
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Santa Barbara Graduate Institute
November 2006

This is to certify that the dissertation proposal/dissertation entitled:

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ABSTRACT

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The investigation of prenatal and perinatal memories in preverbal children has been overlooked in psychological research. In this study, I explored the degree to which trained observers could accurately identify preverbal children's prenatal and perinatal experiences based on the children's behavior in a therapeutic setting. Accuracy was assessed by the degree of correspondence between the observers' interpretations and the pregnancy and birth history as described by the child's parents and/or his or her therapist(s). This investigation was a first effort to subject to an empirical test prenatal and perinatal psychology's foundational claims that (a) preverbal children (and others) have memories of their prenatal and perinatal experiences, (b) preverbal children reenact significant memories through play and other behavior, and (c) trained observers can accurately identify the prenatal and perinatal memories of preverbal children.

Five short video clips were presented for observation to five therapists trained in the field of prenatal and birth therapy and unfamiliar with the children's history. The observers were then interviewed about their observations and completed a "multiple-choice" questionnaire listing 10 prenatal or perinatal experiences for which they were to select one for each clip.

The interviews revealed a high degree of congruence among the observers' interpretations of the children's behavior and between those of the observers and the therapists. Further, the observers chose the expected answer to the questionnaire 18 out of 25 times. Using binomial probabilities with an alpha level of .05, there were significantly

more correct answers than expected by chance, $p < .001$ (one-tailed). The high degree of correspondence (72%) between observers' interpretations and the children's prenatal or perinatal histories suggests that these behaviors have a direct relationship to particular prenatal or perinatal experiences. From this, 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 wellbeing of the child.

ACKNOWLEDGMENTS

I realize that this research has only been possible with the support, love and participation of many people that I have encountered in my life. I am going to name the ones that come to mind and that have assisted me more directly, in one way or another, to complete my dissertation project. I would like to first of all thank the babies and their parents participating in this research project. I would like to thank as well the anonymous observers, and the facilitators of the therapy sessions from which the video clips come from: Raymond Castellino, Nancy Greenfield, Jean Weitensteitner and Wendy Anne McCarty. These sessions took place at the BEBA Clinic, in California, and I would like to specially mention and acknowledge the founders of this clinic, Raymond Castellino and Wendy Anne McCarty, as well as the administrator Sandra Castellino for all their help and collaboration in my research.

I want to honor and mention the support of my friend and advisor Brock Travis who encouraged me to undertake a doctoral dissertation from a soul inspired perspective. I consider my research project as the child that has been growing in me for the last few years. I want to express my love and appreciation for my doulas during the gestation and birth of this baby: Carrie Contey and Nancy Greenfield.

I want to specially mention my midwives, that worked really hard, day after day, to make sure that this baby was growing well and to ensure the safety and success of her birth. I consider my committee members as my midwives for the essential role that they played in this project: my chair, BJ Lyman, Wendy Anne McCarty and Jill Kern, and my external reader Dr. Joseph P. Bush. I want to mention as well the statistics technician Frank Rust who generously offered his time and expertise.

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Above all, I want to thank my Soul for guiding me in each step of the way and to the Spirit that has inspired this work.

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CHAPTER ONE: INTRODUCTION

For the last two hundred years, the belief most predominant among the medical and psychological professions was that prenates and newborns were not conscious beings because their brain 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 for this reason, until the brain is fully developed the mind does not exist. As a corollary, once the brain is dead, the mind stops existing too.

In the last 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 prenates and newborns are capable of intelligent communication and memory.

This latter perspective, part of an emerging paradigm (Chamberlain, 1999a; Dossey, 1999; McCarty, 2002, 2004; Wade, 1996), has clear and important implications for the way we meet and communicate with prenates and newborn babies, as well as for how we support people in their process of dying. This new paradigm considers prenates and newborns as conscious beings, capable of memory, mentation, intelligence, emotions, and the capacity to learn, and communication.

Different psychologists and psychotherapists in the last decades have been finding cases of adults who spontaneously remember their prenatal lives and births (Chamberlain, 1999e; Cheek, 1986; Janov, 1983). These memories have been frequently corroborated by hospital records or information provided by the clients' parents. This in itself has challenged the old belief about infantile amnesia and the supposed incapacity of prenates and newborns to learn and communicate. Later studies have found that toddlers are also capable of remembering specific events of 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). This study was designed to explore the boundary even further and examine the idea that preverbal children are also capable of having implicit and perhaps even explicit memories of their prenatal lives, something considered impossible in 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 last months of gestation when the brain is already formed—although not fully developed—is in itself challenging. Explaining the existence of memories from conception or even earlier, challenges even more the old paradigm that considers memories to be stored in the brain. How can anyone remember something from a time when the brain did not even exist? Are memory, mind and consciousness, after all, functions of the brain or do they precede birth and continue after we die? Three memory models will be explored as part of my literature review in a search to find answers to these questions and lend support to this investigation.

This research study examined the hypothesis that preverbal children are capable of registering their prenatal and perinatal experiences implicitly *and* explicitly, and

subsequently communicating these experiences through their behavior. The way to access information from the child at this early age cannot be through language, but through observation of their movements and behaviors. Selected video clips of sessions with five preverbal children and their families were presented to five practitioners trained in prenatal and perinatal therapy. The assumption was that in these chosen video clips children were expressing aspects of their prenatal and perinatal lives. Sometimes they expressed aspects of their prenatal or perinatal life in an implicit way (like for example, repeating the same movement patterns they did at birth) and other times they expressed aspects of their prenatal or perinatal lives in an explicit way (such as purposefully and repeatedly choosing to play with an ambulance and putting a child inside it). In my opinion, and the facilitator of the session's opinion, this behavior is connected with the fact that the child was transferred to the hospital after birth.

These five observers watched the video clips without any previous history on the child and his family, and 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 find out if they concur with each other as well as 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.

Prenatal Memory Experiences: A Researcher's Perspective

Ten years ago, I was one of those people that could not remember anything about her birth and prenatal life. The first time I heard about people exploring their experiences in the womb, I heard myself saying; "It has to be very hard to revisit the experience of one's own birth and prenatal life." Why did I think that, I wondered? Several months

later, I signed up for my first process workshop in England, with Dr. Raymond Castellino. This workshop was absolutely eye opening for me. In it, I explored the moment of discovery when my parents found out they were pregnant with me, and their difficulty in integrating this information, with my nursing sister being only one and a half months old. How could I possibly know this? My parents, both dead then, had never talked about it to me, yet I had a clear sense of remembering when my mother discovered she was pregnant with me and a deep perception that this memory was accurate. Then my logical mind intervened and helped me understand that it was quite likely that my mother, twenty-five years old, with a nursing baby and two toddlers, would feel overwhelmed with the thought of another pregnancy. This unplanned and unwanted pregnancy was me, and only then did I start to understand the effects of this early experience and the imprint it left on my life up to that point. In that workshop, I also explored the possibility of repatterning that imprint and experienced the joy of feeling welcome in the world for the first time.

The workshop had a deep impact on my psyche, my understanding of myself, my history and the way I relate to others. It also triggered my interest in this new field of prenatal and perinatal psychology. Months later, I started a two-year foundation training in prenatal and perinatal therapy in Europe, facilitated by Dr. Castellino, and after that moved to California to train with him as a family facilitator at the research clinic that he and Dr. Wendy Anne McCarty founded in 1992. The BEBA Clinic (Building and Enhancing Bonding and Attachment) has been exploring this new field of prenatal and perinatal psychology for more than a decade. I have been involved with this clinic for nearly five years; observing and videotaping sessions first, then assisting the main

facilitator, and now facilitating or co-facilitating sessions with children and their families as they explore their early prenatal and postnatal life.

The five video clips that constitute the material of my research come from sessions at the BEBA Clinic in Santa Barbara, California during the last decade. Dr. Castellino has trained all the five practitioners that observed and wrote about these sessions and they all work with families and children in Europe or in the United States.

Operational Definitions

The research topic of this study is prenatal and perinatal memories and imprints in preverbal children. First of all, an operational definition will be presented on the main terms used in this study: Prenatal memories, perinatal memories, memory, recall, implicit memory, explicit memory, imprint, reenact, preverbal children, and consciousness. Prenatal memories refer to what we are able to remember about our life before birth (including preconception, conception and gestation). Perinatal memories refer to the memories of the perinatal time. Perinatal is defined by the *Merriam-Webster's Collegiate Dictionary* (1993) as "Occurring in, concerned with, or being in the period around the time of birth" (p. 864). Memory is defined by the *American Heritage Dictionary* (2001) as "The mental faculty of retaining and recalling past experience" (p. 530). Recall is defined in the same dictionary as "The ability to remember information or experiences" (p. 698). Implicit memory is a new term that stretches the boundaries of what has been classically understood by the term memory. Siegel (1999) presents the following definition of implicit memory: "A form of memory devoid of the subjective internal experience of 'recalling', of self, or of time…. [It] includes behavioral, emotional, perceptual, and perhaps somatosensory memory" (p. 33). Explicit memory, on the other

hand, refers to the classical conception of memory and is defined by Siegel as "A form of memory requiring conscious awareness for encoding and having the subjective sense of recollection (and if autobiographical, of self and time). [It] includes semantic (factual) and episodic (autobiographical) memory" (p. 33). Imprint is defined in the *American Heritage Dictionary* (2001) as "To impart a strong impression. To fix firmly, as in the mind" (p. 428). Often it is considered that implicit memories happen by a process of imprinting without actual recollection of self or time. Reenact is defined in the *Merriam Webster's Collegiate Dictionary* (1993) as "To repeat the actions of (an earlier event or incident)" (p. 982). Preverbal children are also called infants; this term refers to children that have not started to use language in their communication. According to Rowan (1996) the Latin origin of the term "infant" means "unable to speak". "Consciousness" is defined in the same dictionary as "The quality or state of being aware, especially of something within oneself" and as "The state or fact of being conscious of an external object, state or fact" (p. 245). The Samueli Definitions and Standards of Healing Research committee (Dossey, 2003) defines consciousness as:

> The capacity to react to, attend to, and be aware of self and other. Consciousness subsumes all categories of experience, including perception, cognition, intuition, instinct, will and emotion, at all levels, including those commonly termed 'conscious', 'subconscious', 'superconscious' or 'unconscious', 'intention' and 'attention', without presumption of specific psychological or physiological mechanisms. (p. 11)

Statement of the Problem/Research Questions

The reason for choosing prenatal and perinatal memories in babies as my research topic relates to my passion for working with very young children, as well as my desire to fill in the gap in research about prenatal and perinatal memories in preverbal children. For this reason, the main research question for my study will be: Do preverbal children have memories of prenatal and perinatal experiences that they express through their behavior that can be perceived as such by trained observers?

At the same time, I have been a student of spirituality and the wisdom teachings for the last twenty years, and always had an interest in understanding better the nature of consciousness and exploring the concept of our human identity. This research project is bringing together my two passions—working with families and babies, and exploring the nature of consciousness and identity. I believe that exploring the conscious life of prenates and babies can shed much light on human nature, and the nature of human memory and consciousness. For this reason, my literature review will explore the topic of prenatal and early consciousness as well as prenatal and early memory.

CHAPTER TWO:

LITERATURE REVIEW

Two main subjects of research are considered in this literature review: consciousness and memory. These topics were chosen because they address the core issues of this research study on prenatal memories in preverbal children. The first assumption to be substantiated is that prenates and babies are conscious beings capable of memory. In order to support this hypothesis, we need to look into the literature on consciousness and memory.

Themes of Consciousness

Consciousness is a theme described extensively in ancient and modern literature. Some experts in the field think that we are still lacking a theory of consciousness (Mishlove, 1993). Others, like Wade (1996), have attempted to elaborate a theory of consciousness that includes prenatal and perinatal life. "My intent is to explore this very idea, to examine developmental psychology within the context of the emerging paradigm, to create a theory of the individual evolution of consciousness, using a post-Newtonian perspective" (p. 3).

Consciousness Before Brain Development

One essential idea elucidated by Wade and other authors or researchers in the field of prenatal and perinatal psychology (Chamberlain, 1998; Cheek, 1986; McCarty, 2004; Verny & Kelly, 1981; Wambach, 1979) is the notion that consciousness in the prenate exists even before the brain is fully developed and the senses are fully operating. Anecdotal stories, therapeutic memories of working with adults, and stories told by toddlers all show extremely accurate prenatal and early memories, many of which have

been verified by external means, and make researchers question the origin of these memories from a time when the brain is "technically" not able to produce them.

Mainstream belief identifies the mind with the brain. Nilsson (1990), for example, postulates that the undeveloped brain of an eight-week fetus is incapable of real consciousness. On the other side of the spectrum, and in the light of what prenatal and perinatal psychology has discovered in the last decades, the belief that attributes consciousness to the development of the brain is up for a revision. As Dr. Chamberlain (1988a) says: "Medicine and psychology have confused brain with mind. Preoccupation with the immaturity of the physical brain at birth has delayed discovery of the true mental competence of newborns" (pp. 21, 22).

From different fields of research and thought, the idea that consciousness is independent from the brain, and supersedes neurological development, and even more, the notion that consciousness exists before and after the life of the person is becoming more prevalent. There are more and more scientists and doctors (Bohm, 1980; Morse, 1990; Penfield, 1975), therapists (Castellino, 1995; Cheek, 1986; Emerson, 1992; Luminaire-Rosen, 2000; McCarty, 2004, 2006) and spiritual thinkers from the last century and before (Bailey, 1932; Blavatsky, 1888; Jurriaanse, 1978; Wilber, 1998) who subscribe to this view when it comes to understanding human nature and the nature of the universe. For example Penfield (1975), widely recognized as the father of neuroscience and neurosurgery, has clearly stated:

> For myself, after a professional lifetime spent in trying to discover how the brain accounts for the mind, it comes as a surprise now to discover, during this final

examination of the evidence, that the dualist hypothesis (the mind is separate from the brain) seems the more reasonable of explanations. (p. 23)

Wendy Anne McCarty (2002), one of the present pioneers of prenatal and perinatal therapy, has written:

> I now believe that for us to more fully and accurately understand the experience and development of the growing prenate and baby, we must acknowledge and hold a higher truth. We are consciousness prior to and beyond our physical body and brain. (p. 344)

Jurriaanse (1978), one of the spiritual thinkers of our century, wrote:

> A point that should be clearly understood is that man is not only conscious while he is in physical incarnation. Because his consciousness is associated with the soul, it does not matter whether the soul happens to be in or out of incarnation—the consciousness remains unaltered. (p. 331)

This perspective that considers consciousness as something independent from the physical body and the brain has existed for centuries, and the great sages and ancient philosophers have spoken about it repeatedly:

> According to the great sages, there is something in us that is always conscious—that is literally conscious or aware at all times and through all states, waking, dreaming, sleeping. And that ever-present awareness is Spirit in us. That underlying current of constant consciousness (or non-dual awareness) is a direct and unbroken ray of pure Spirit itself. It is our connection with the Goddess, our pipeline straight to God. (Wilber, 1998, p. 44)

Near Death Experiences

Also, near death experiences (NDE) have offered much evidence that consciousness exists even when the brain is considered technically dead, and indeed, how the state of consciousness in NDE is more expanded and inclusive than our normal waking consciousness. There are thousands of accounts from individuals that have experienced a NDE, such as this one:

> In this place, whatever it is, I did not have the limited consciousness I have on earth. It felt like I had 125 senses to our normal five. You could do, think comprehend, and so on, you name it, with no effort at all. It's as if the facts are right before you in plain sight with no risk of misinterpretation because the truth just is! (Ring, 2000, p. 45)

The evidence that supports this paradigm is growing exponentially. The shift sustains the idea that our consciousness is independent of the physical body, recognizes supraphenomenal realities, and questions the classical empirical Newtonian concept of life (Chamberlain, 1999a; Targ & Puthoff, 2005; Wade, 1996).

Accessing Consciousness

Birth memories, along with near-death experiences, past-life memories, and other altered states, may help carry us into a new age of consciousness. With the widespread use of therapeutic approaches such as hypnosis, meditation, breathing techniques, flotation tanks, and even psychedelics, more and more birth memories are coming up, enabling increasing numbers of us to see that human consciousness is something that exists at all times—before, during and after birth (Chamberlain, 1999b, p. 17).

There are a vast number of books in the literature that address the theme of consciousness, from those on ancient wisdom (Bailey, 1932; Blavatsky, 1888; Jurriaanse, 1978), to other more recent texts based on science and psychology (Bohm & Peat, 1987; Castellino, 1995; Cheek, 1986; Emerson, 1992; Luminaire-Rosen, 2000; McCarty, 2004; Morse, 1990; Penfield, 1975). The purpose of this project will not be to review all this literature, but to select some of the books that have help me understand the nature of consciousness and its application to the realm of prenatal and perinatal psychology.

As mentioned before, the *Merrian Webster Collegiate Dictionary* (1993) defines consciousness primarily as: "The quality or state of being aware especially of something within oneself" and as "The state or fact of being conscious of an external object, state, or fact" (p. 245). Today many researchers in the field of prenatal and perinatal psychology (Castellino, 1995; Chamberlain, 1998; Cheek, 1986; Grof, 1992; Janov, 1983; Janus, 2001; McCarty, 2004; Verny & Weintraub, 1991)) support the idea that the prenate is aware of himself and his environment; that he is capable of thought, will and perception; and that he has a sense of his own personal or collective identity. Different sources of data support the notion of conscious awareness in the prenate. Some examples of this are: toddlers' memories of their life in the womb (Ikegawa, 2002; Rhodes, 1991, 1996), adults' memories of prenatal life elicited under hypnosis (Chamberlain 1999e; Cheek, 1986; Wambach, 1979; Zimberoff & Hartman, 1998), observation of the behaviors of prenates (Chamberlain, 1999d; Piontelli, 2004), and a comparative study of the memories of children and their mothers related to the prenatal and perinatal periods (Chamberlain, 1986).

Jeanne Rhodes (1991) has done a study interviewing children between two and a half and three and a half years old regarding their memories of birth and prenatal life. Out of 29 children, five clearly had memories about their birth and/or prenatal life, and four more had memories that could possibly relate to these early experiences. Here is an example of one interview with a three and a half year old boy.

Interviewer: "What was it like in mommy's tummy"?

Child: "Things bumped me."

Interviewer: "Could you hear anything?"

Child: "It's like fish, gluck, gluck."

Interviewer: "That's wonderful, can you tell me anything else about it?"

Child: "They pushed me out."

Interviewer: "Who pushed you out?"

Child: "Man."

Interviewer: "Man?"

Child: "Yes, man."

Interviewer: "What happened when you were pushed out?"

Child: "I hurted."

Note: In the follow up telephone call with this child's mother, she reported that his birth had been an emergency caesarean (pp. 99, 100).

Some years later, a medical doctor named Akira Ikewaga (2002) conducted similar studies in Japan to research children's memories of their birth and time in the womb. Ikewaga did two surveys of mothers of children ages one to six years. In the first

survey he used a questionnaire that included the following areas of exploration: Whether or not their children have talked about remembering their birth or their time inside the womb, and the contents of their stories; the ages of the children when they spoke of these memories; the circumstances of delivery—whether easy or difficult; whether the delivery needed obstetrical procedure, etc. The results were astonishing—79 questionnaires were answered showing that 41% of the children had told their mothers they remembered their birth and 53% said that they remembered their time in the womb. Here I transcribe a conversation between a mom and her child:

> I could see outside from mommy's tummy.
>
> (What did you see?)
>
> Trees, buildings, lights…
>
> (What were you doing inside my tummy?)
>
> It was like a tent and I was playing. There were fishes in there too. I played with them.
>
> (Wasn't it pitch dark inside the tummy?)
>
> The clouds were orange like a sunset. Streets were orange, too.
>
> (Did you hear mommy's and daddy's voice?)
>
> Yes. Mommy and daddy were rubbing and patting mommy's belly and talking.
>
> (Ryuhsei Suzuki / two years and seven months, quoted in Ikegawa, 2002, p. 6).

Memories of adults under hypnosis or other forms of therapy show that individuals are capable of remembering their prenatal life experiences (Chamberlain, 1999e; Cheek, 1986; Wambach, 1979; Zimberoff & Hartman, 1998). There are many forms of therapy that assist adults in remembering their prenatal and birth experiences.

Examples include rebirthing, gestalt and fantasy procedures, hypnosis, primal therapy, and womb surround process workshops. Some of these approaches use specific means to help adults regress to the prenatal period such as breathing exercises, free association, isolation in water tanks, hypnosis, LSD or physical movements combined with music. Other modalities rely entirely on the therapeutic process (Chamberlain, 1990).

Wambach (1979) regressed 750 patients under hypnosis to describe their fetal lives and 89% of them reported two separate and simultaneous sources of awareness as they were re-experiencing this period in their lives. Here is one case presented by Wambach that illustrates this idea:

> I mostly observed the fetus, but at one point I felt a pulsating sensation around my body. I don't know whether this was because I was in the fetus, but it was a sensation I had. I feel I really observed the fetus. (p. 104)

David Cheek (1986), an obstetrician who was initially skeptical of the possibility that patients could remember their birth, after working with hypnosis with 500 clients came to believe that babies are aware during and prior to birth, and that the actions, thoughts and words of those around them during this time of their lives create a lasting imprint in the children's minds. His research demonstrates that people are capable of reproducing the movements present at their births, suggesting that these early body memories are retained somewhere in the consciousness of the person.

> Prenatal memories have been presented to me often by patients and students in workshops who had only volunteered to explore their memories of birth. Initially, I was not looking for such memory because I was sure it did not exist. (Cheek, 1986, p. 98)

Observations of babies in the womb through ultrasound scans show how prenates behave during the time they live in the womb. Many observations of this period of life support the idea that prenates are aware, expressive and affected by their interactions with adults (Piontelli, 2004; Van de Carr & Lehrer, 1997).

One clear way to appreciate this is by studying the movements that prenates make while they live in the womb. There are three types of movements: self-initiated, reactive to the environment, and interactive or social (Chamberlain, 1999c). Self-initiated movements commence in the sixth week of gestation when prenates exercise continually until their intra-uterine space no longer allows them to do it. Reactive movements are self protective reactions to the outside and a way to cope with the environment. For example, after amniocentesis some babies become motionless, their heart rates rise and their breathing movements decrease.

Prenates can also respond to music. Depending on the music, they can react in different ways: from kicking heavily up to the extent of bruising their mom's abdomens, to entering a calm state and even learning the music and recognizing it after birth. Interactive and social movements are common between baby and mother or father. Some parents have learned to create an interactive game with their prenates paying attention to their kicking movements and responding to them (Van de Carr & Lehrer, 1997). "Other studies demonstrate how prenates can learn musical passages, stories, and the voice of the mother and father, and the sounds of the parents' native language, compared with other languages" (Chamberlain, 1999d, p. 177).

Ultrasound scans have been very useful to help substantiate that prenates have pain perceptions, preferences, capacity to learn, memory, emotional states, aggressive

behavior and personal interests (Chamberlain, 1999d; Piontelli, 2004). These discoveries clearly support the idea that prenates are sentient and conscious beings capable of communication and memory.

Research studies like the one implemented by Chamberlain (1986), comparing the testimonies under hypnosis of mothers and children about the birth process of the child, support the notion that babies are conscious human beings who can have prenatal memories. In every case, the mother did not tell anything to her child about his/her birth. Yet most of the information given by both sides was consistent with each other, and was verified by other sources (e.g., medical records or other witnesses present at birth). Mother and child presented a different perspective of the experience, and remembered sometimes different details, but their stories were consistent and connected, and the sequences were similar. "Details of time of day, locale, persons present, instruments used (suction, forceps, incubators), type of delivery (headfirst, breech), and feeding of water or formula were usually correct" (Chamberlain, p. 22).

These four types of studies (toddlers' memories of their life in the womb, adults' memories of prenatal life elicited under hypnosis, observation of the behavior of prenates, and a comparative study of the memories of children and their mothers related to the prenatal and perinatal periods) support the belief that prenates are aware, sentient, expressive and able to communicate. This claim is based on the discoveries in psychology through experimental research, clinical findings, anecdotal records of personal experiences and intrauterine photography. As demonstrated above, an essential characteristic of the prenate is his capacity for memory. Consciousness and memory are

intimately related, as normally when consciousness is present in the person, memory is present as well:

> The source of memory is virtually synonymous with the origins of awareness...since a subjective sense of self depends upon recognizing a stream of experience as uniquely one's own, and upon having a stream of consciousness with some history binding one moment to the next. (Wade, 1996, p. 24)

The Location of Memory in the Prenate

Some of the studies presented in this paper 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 prenates 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)

Expanding the Field of Memory Research

Lashley (1960), one of the premier investigators of memory, tried for thirty years to find the site and substance of memory. He experimented with animals by cutting out portions of their brains and predicting that they would lose what they had learned. To his surprise, although their performance worsened, they didn't lose their capacity to remember (Ferguson, 1978; Sheldrake, 1995). These experiments made him come to the conclusion that memory cannot be located in any particular area of the brain.

Karl Pribram (1971) was drawn to brain research out of his interest in memory. He participated in the writing of Lashley's research and wondered how memory was not stored in any particular part of the brain but throughout it. He was deeply troubled by the mystery of memory, and in the mid 60s was exposed to the concept of the hologram, a kind of three dimensional image produced by lensless photography (Ferguson, 1978). He thought the hologram was a good model for how we store memory, not in a localized part but dispersed throughout the brain (Wade, 1996). Pribram discovered a mechanism that would explain how the whole is stored in every part: the holographic model. He speaks of

cellular memory based on the holographic model in which each brain cell carries the memory of the whole.

Non-physical or Transcendent Memory

At some point in his career, Pribram came to the realization that not only did the brain works as a hologram, but that the entire universe was a hologram. Soon after that, he read some of David Bohm's work about physics and was electrified to realize that Bohm was describing a holographic universe as well (Ferguson, 1978). "Our brains mathematically construct 'concrete' reality by interpreting frequencies from another dimension, a realm of meaningful patterns, a primary reality that transcends time and space. The brain is a hologram, interpreting a holographic universe" (Wilber, 1985, p. 5).

Bohm's (1980) holographic paradigm includes an explicate order, composed of what is visible, audible and tangible to us but holds that this world is in reality an illusion, like the three dimensional picture made with the aid of a laser. There exists, he says, an implicate or enfolded order as well underlying and causative to the explicate order. (Ferguson, 1987) In other words, the world that we perceive (explicate order) is just a projection of a higher dimensional reality beyond time, space and matter (implicate order) (Talbot, 1991). The implicate order, in turn, according to Bohm, arises from a series of deeper and deeper orders, merging into the holomovement, the infinite ground of all that is (Friedman, 1994). Within this holomovement all aspects of reality are interrelated and interconnected in an undivided whole. "Bohm's sense of the simultaneous interrelatedness and interpenetration of all phenomena is probably best summarized by calling his perspective the holonomic paradigm (from *holos* and *nomos*, the law of wholeness)" (Wade, 1996, p. 8). The explicate order can be conceived as a

static holographic interpretation of the holomovement. “The hologram analogy shows us how the holomovement might be displayed. Bohm calls this display the explicate order” (Friedman, 1994, pp. 63, 64).

The holonomic paradigm presents a non-local and non-physical understanding of memory in which memory is associated with the physical structures of the brain but is not necessarily reducible to them. The holonomic model could help explain prenatal memories from a time when the central nervous system is not completely developed or even existent.

The holonomic paradigm is not the only approach to postulate the existence of a non-physical or transcendent aspect of memory and consciousness. Other researchers postulate that the mind is independent from the physical brain. For example, Penfield (1975, as cited by Wade, 1996) in his last years and Eccles (1987) speculate about the source of consciousness and memory being outside the material plane and assert that the brain is just the temporary instrument of reception. “A key component of the hypothesis is that the unity of conscious experience is provided by the self-conscious mind and not by the neural machinery of the liaison areas of the cerebral hemisphere” (Eccles, 1987, p. 56).

For Benito Reyes (1949) memory is usually associated with the brain in human beings, although we cannot attribute memory exclusively to beings that have a brain. He gives the example of an amoeba that has no brain, and yet is able to remember and learn. As David Chamberlain has stated: “Proof of learning means proof of memory as well because learning requires memory” (1998, p. 35). Reyes clearly states that memory is not a function of the brain; rather, it is a function of consciousness. Without consciousness

there can be no memory. He thinks consciousness is the seat of memory. “It is becoming more and more evident even to positivistic scientists themselves that the brain is only a secondary organ directed by a deeper, more subtle, non-physical source” (Reyes, 1949, p. 114).

One of the most controversial biologists of the twentieth century, Rupert Sheldrake (1995a, 1995b), presents a revolutionary approach to the understanding of memory. He has developed the compelling theory of morphogenetic fields where memory is stored outside of the physical body.

> The spatio-temporal patterns we remember may not be inscribed in the brain in the form of material traces but may depend instead on morphic fields. The morphic fields through which our experience, behavior, and mental activity were organized in the past can become present again by morphic resonance. We remember because of this resonance from ourselves in the past. (Sheldrake, 1995b, p. 197)

His pioneering approach has been questioned from different angles, like research being done in cases of brain damage, whereby people lose memory when parts of their brains are destroyed or removed. This instance would support the notion that memory is stored in the brain. Sheldrake, however, responds by saying “Brain damage leading to loss of memory does not prove that memories are stored inside the damaged brain. It simply shows that those bits of the brain play some role in the recovery or the tuning-in to the memories” (Sheldrake, 1995a, p. 73).

At the beginning of the twentieth century, Annie Besant (1999), president of the Theosophical Society for more than twenty-five years, presented a revolutionary

approach to memory that corresponds with what Sheldrake has been writing from a scientific perspective at the end of that century. Besant does not consider memory as information stored in the brain, but as a remembrance of experience that we have previously shared and that is within the consciousness of the universe.

> Memory is not a faculty, and is not preserved; it does not inhere in consciousness as a capacity, nor is any memory of events stored up in the individual consciousness. Every event is a present fact in the universe-consciousness. (Besant, 1999, p. 201)

The morphogenetic field theory presented by Sheldrake as well as other non-physical or transcendent explanations of memory and consciousness like those presented by Besant (1999), Reyes (1949) and Bohm (1980), leave much room for the existence of prenatal memories from a time when the brain is not developed because memories are not stored in the brain; the physical brain is just an instrument, like a TV set through which information is received and transmitted.

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 prenates, 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).

Summary of the Three Memory Models and the Integrated or Holonomic Model

Local theories that consider memory a function of the brain may be able to explain early prenatal memories from a time when the brain existed, even in a rudimentary form. Van der Kolk (1996), for example, emphasizes the relevance of the limbic system (partially mature after a month of gestation and fully formed by the third trimester) in the storage and retrieval of memory. Local theories cannot, however, explain prenatal memories from a time when the brain was not there at all (like conception or the first weeks of gestation).

Non-local theories include different approaches. Some postulate that memory is stored in the RNA of the body (Dossey, 1989; Rossi, 1990), and others (Raymond, 1998; Larimore & Farrant, 1995; Wilheim, 2002). speak about cellular or organismic memory.

These theories can account for the existence of prenatal memories from the very beginning of life, from the time when two cells meet, a sperm and an egg, to create a fertized egg, but are not able to explain preconception memories (Carman & Carman, 1999; Hallett, 1995), past life memories in children and adults (Shroder, 2001; Stevenson, 1997) or near death experiences (Ring, 2000), increasingly prevalent in the literature.

Transcendent or non-physical theories 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)

Finally, different experiments have shown how some people recall their prenatal and perinatal life from a dual vantage point of awareness—one within the body and the other outside of it. If this is the case, one could hypothesize that if memory and awareness can be simultaneously located in physical structures (brain, cells) and outside of them, the three models presented before (local, non-local and transcendent) are all valid as each of them describe an aspect of the totality. We could even use the metaphor of the "elephant" and say that one is seeing the tail, the other the trunk and the other a leg, but only when we put them all together are we able to see the picture of the whole elephant. In this line of thought, I believe Wade and McCarty have presented a synergistic perspective

inclusive of these three memory models based on a holographic model. In my opinion, the integrated model (McCarty, 2004) and Wade's holonomic theory of consciousness (1996) are the most comprehensive approaches to explain the different kinds of prenatal and perinatal experiences and memories seen in prenatal and perinatal therapy with children and adults.

Studies in Reincarnation

Some researchers have gone even further and present evidence of children who seem to remember a period of existence prior to their conception. Dr. Ian Stevenson has documented more than two thousand cases of "past life" memories in children that have been corroborated by historical data or family records (Shroder, 2001; Stevenson, 1974, 1997). Dr. Stevenson's books are full of cases where:

> A young child, usually two or three years old, without prompting from anyone, recalled enough specific details of a past life for his former identity to be established. Then Dr. Stevenson investigated the case and verified that the child had not learned about the remembered person by any normal means, leaving past life memory as the only explanation. (Bowman, 1997, p. 109)

Dr. Stevenson was interested in studying young children because their memories are relatively pure. In addition, he made sure that these children did not have any other way to know specific details of the past lives they were describing. Often, these children start talking about a previous existence, giving details of names and places that no one in their family knows. In half the cases, Dr. Stevenson reports that the family will try to suppress these memories but the child will keep talking about them for months or even years (Bowman, 1997). At this point, some families begin to inquire into the accuracy of

these memories, visiting members of the family the child felt he belonged to in his previous life.

> Members of the two families visit each other and ask the child whether he recognizes places, objects and people of his supposed previous existence. ... In the past only a few cases ... have received investigation by independent persons outside the immediate families of the subjects. I have tried to remedy this deficiency by conducting the international census of cases suggestive of reincarnation mentioned above and by arranging whenever possible for firsthand investigations of the cases by persons familiar with the methods of psychical research. (Stevenson, 1974, p. 17)

Stevenson presents some irrefutable cases of children with birthmarks or birth defects that match wounds from their previous lives. In fact, 35% of his verified cases (309 of 895) of children remembering a previous life have some kind of birthmark or defect. "Birthmarks and birth defects—especially when they can be verified against medical records of the deceased—are undeniable, tangible evidence of a direct correspondence between a past and present life" (Bowman, 1997, p. 124). In his book, *Where Reincarnation and Biology Intersect*, Stevenson (1997) presents many cases of birthmarks and birth defects in children that remember a previous life. To illustrate, I have selected one case:

> The first case of this group is that of Maung Zaw Thein Lwin, a subject of Burma who remembered the previous life of a man, U Mar Din, who, while trying to rob birds' nests at a temple, had fallen through a weak ceiling board and dropped about five meters onto concrete flooring below. He suffered multiple injuries,

> particularly of the head. Maung Zaw Thein Lwin's birthmark was a large, scar like area at the back of his head. This was at the location of what was probably the most serious of the injuries noted on U Mar Din after he fell onto the concrete floor. (p. 37)

Dr. Stevenson has dedicated more than 35 years of his life to the systematic research of reincarnation, the results of which will stand up to scrutiny from the most skeptical minds. One such skeptic, journalist Tom Shroder (2001), accompanied Dr. Stevenson in his fieldwork for six months to examine the lives of children and their families around the world touched by reincarnation memories. In his travels, Shroder was confronted with irrefutable evidence of young children who spoke of remembering previous lives and provided detailed and accurate information about people who died before they were born. This evidence of past life memories in young children can only be explained from a memory model that includes a transcendent location of memory and identity.

Near Death Experiences and After Life Experiments

Another situation that exemplifies a transcendent source of memory from a time when the brain is technically dead is the life review that occurs during near death experiences (NDEs), where people report being able to remember their entire lives in what seems to be an instant. For example:

> It proceeded to show me every single event in my twenty-two years of life, in a kind of instant three-dimensional panoramic review.... The brightness showed me every second of all those years, in exquisite detail, in what seemed only an instant of time. (Ring, 2000, pp. 148, 149)

Dr. Schwartz (2003) presents groundbreaking experiments in which he tried to prove, or disprove, the existence of an afterlife. As a faculty member of the University of Arizona, he put his academic reputation at risk by performing rigorous experiments in which mediums attempted to contact dead friends or relatives of volunteer participants. These volunteers did not provide the mediums with any information about the deceased subjects they were trying to contact. The results obtained by the mediums were then compared with known information to determine the accuracy of the mediums' perceptions. The accuracy of the results obtained by many of the mediums as they contacted people that had died clearly substantiates the idea that some form of memory and existence continues after death.

The last examples of preconception, past lives memories, life reviews in NDEs and after life experiments clearly speak of a source of life, consciousness and memory that precedes the physical body and the brain and continues to exist after death.

> There is evidence that suggests this transcendent awareness is operating prior to conception and is therefore the *primary awareness*, one that taps information prior to and after conception and demonstrates an omni-awareness that is far more expansive than the human cells and growing fetus can explain. (McCarty, 2004, p. 98)

Finally, after studying all these theories, and inspired by the work of Bohm & Peat (1987), Chamberlain (1986, 1998, 1988a, 1988b), McCarty (2004, 2006), Verny & Kelly (1981), Wade (1996, 1999) and Wambach (1979), I believe that the most comprehensive explanation for the existence of prenatal memories is the integral or holonomic model that understands memory as a phenomenon that occurs at more than

one level at the same time. This revolutionary idea could provide the theoretical framework to understand why the prenates can, at the same time, gather rudimentary memories and impressions in their developing brains, and store much more mature memories and impressions in a consciousness that tranßscends their fetal bodies.

Memory Functions

The subject of memory storage has been covered extensively in this review because it sets the context to understand the different theories that explain the origin of prenatal memories, but storage is just one memory function among others. Briefly, a classical classification of the different functions or stages of memory will be presented in light of Siegel's (1999) and Klein's (1966) work. These two authors categorize memory functions or stages in a similar way and understand memory as a phenomenon related to the neurons in the brain (which means they are part of the local model).

For Klein *registering* is the first stage of memory, and it relates to particular perceptions—auditory, visual, etc., whereas Siegel uses the term *encoding* to refer to the capacity to create a representation or image of something in one's mind. The next stage is the *storage* or *retention* of memory and following Siegel's work, retention means increasing the probability of activating the same neural network pattern in the future. "Note that there is no 'storage closet' in the brain in which something is placed and then taken out when needed" (Siegel, 1999, p. 25). Instead, there is an increased probability of reactivating the same neural network that was encoded before, following the axiom presented by Donald Hebb (1949): "Neurons which fire together at one time will tend to fire together in the future" (p. 70). Siegel and Hebb among others, support a model that

essentially suggests that particular memories are coded in specific pathways or neural circuits.

Klein considers *coding/categorization* as the next stage in the process, where the new input is organized and located in the existing schema of meaning. Both Siegel and Klein write about *retrieval* or *reconstruction* as the last stage in the process, wherein there is an activation of a potential neural network profile very similar, but not identical to, the profile activated in the past.

For both Siegel and Klein, it is important to realize that a memory can be stored without conscious attention and still influence current behavior. "Our earliest experiences shape our ways of behaving, including patterns of relating to others, without our ability to recall consciously when these first learning experiences occurred" (Siegel, 1999, p. 24).

Infantile Amnesia and Explicit and Implicit Memories

It is still common in our present day to find psychologists and researchers (Menzam, 2002; Pendergrast, 1995; Spanos, 1996) that believe any memory flashback about birth or prenatal life is a fantasy or a false memory. This idea is based on Freud's observation of what he called infantile amnesia: the notion that adults repress memories of their early childhood because those memories are unacceptable and charged with sexual content, or are due to a lack of neural development (Kail, 1990).

The notion of infantile amnesia has been proven wrong by numerous studies that show how adults and children are capable of remembering their early prenatal and postnatal life (Chamberlain, 1986, 1988b, 1999b; Cheek, 1986; Grof, 1992; Janov, 1983; Janus, 2001; Piontelli, 1992; Wambach, 1979). In Chamberlain's words: "Now, at last, the theory of infantile amnesia is dead" (1998, p. 198).

Maybe what we need to consider is that early memories of a preverbal time have a different quality than later verbal memories. The differentiation between implicit and explicit memories provides some answers to the question of infantile amnesia. As Siegel (1999) clarifies: "'Infantile' or 'childhood' amnesia is one such example...in which normal infants' and young children's implicit memory is intact, but their explicit recall, especially episodic memory, is impaired" (p. 38).

Researchers (Greenfield, 1997; Kosslyn & Koenig, 1992; Siegel, 1999; Siegel & Hartzell, 2003; Squire, 1998) in the last decades have been talking about two different memory systems: implicit, non-declarative or procedural; and explicit, declarative or semantic/episodic. Implicit or non-declarative memory is a form of early nonverbal memory that exists prenatally and continues throughout the rest of our lives. Implicit memories are encoded without our conscious attention and, when retrieved, 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 (Kosslyn & Koenig, 1992; Menzam, 2002; Siegel, 1999; Siegel & Hartzell, 2003).

> Implicit memory relies on brain structures that are intact at birth and remain available to us throughout life. These structures include the amygdala and other limbic regions for emotional memory, the basal ganglia and motor cortex for behavioral memory and the perceptual cortices for perceptual memory. (Siegel, 1999, p. 29)

Implicit memories include behaviors, emotions, perceptions, images and perhaps bodily sensations. They are the kind of memories recorded by our senses, have a powerful effect on us, and are responsible for many of our unconscious habits and

preferences. Rothschild (2000) explains how these kinds of memories have to do with the storage and recall of learned procedures (like bike riding) or behaviors.

> And in no small part, by virtue of the non-conscious status of these kinds of memories, the nature of non-declarative memory creates some of the mystery of human experience. Here emerge the dispositions, habits and preferences that are inaccessible to conscious recollection, but that nevertheless arise from experience, influence us and are a part of who we are. (Squire, 1998, p. 71)

Around eighteen months, the toddler rapidly develops a part of the brain called the hippocampus (in the medial temporal lobe) and the orbitofrontal cortex, which allows him to have explicit memory. This is the kind of memory that people are most used to because it is associated with the internal sensation of remembering, and it has two components: semantic or factual memory, developed around eighteen months, and autobiographical memory, that appears some months later and involves the orbitofrontal cortex. This last development comes hand in hand with an increased use of language and the capacity to have a sense of self and time.

> Explicit memory requires conscious awareness and provides a sense of recollection as the person remembers. Autobiographical memory starting around the second birthday, requires enough maturation of the prefrontal cortex for the child to have self-awareness, mindsight and capacity to regulate his emotions. (Siegel & Hartzell, 2003)

Both forms of explicit memories, factual and autobiographical, require conscious attention to be encoded in order to activate the hippocampus. When encoding occurs, the items perceived are first placed in “sensory” memory, which lasts between a quarter to

half a second. Only some items move into what is called “working memory” which lasts up to half a minute, when there is no further rehearsal. When rehearsed, the items can be maintained for a longer period of time in short-term memory, or even be placed in long-term storage. Long-term memory does not last forever unless a phenomenon called “cortical consolidation” occurs which makes the remembered items become a part of permanent explicit memory. In this process, the hippocampus is not needed any longer for retrieval. Recent research indicates that rapid-eye-movement (REM) sleep stage may play an important role in cortical consolidation (Siegel, 1999).

Implicit and explicit memory systems are interrelated and part of a whole; when children start to speak, which is classically considered the time they become capable of explicit memories, they do not lose their non-verbal expressions and implicit memories. This has been demonstrated by a study that shows how children almost three-years of age are capable of remembering what happened two years before, and show it through motor behavior memory (Myers, Clifton & Clarkson, 1987).

Implicit memories operate unconsciously unless they become conscious through bridging to explicit memory. Through the bridging process we make sense and put words to implicit memories such as sensations, emotions and behaviors otherwise forgotten by our conscious minds. In the case of traumatic events, the bridge between implicit and explicit memories does not exit, and part of the therapeutic and healing processes is to construct that bridge so that the client can understand and integrate his or her upsetting emotions, disturbing body sensations and confusing impulses (Rothschild, 2000).

However, when it comes to memory of traumatic events, implicit memories not linked to explicit memories can be troublesome. It appears that traumatic events

> are more easily recorded in implicit memory because the amygdala does not succumb to the stress hormones that suppress the activity of the hippocampus. No matter how high the arousal, it appears that the amygdala continues to function. (p. 31)

Rothschild's explanation of implicit and explicit memory is very close to my observation of how memory works in preverbal children, and to what we observe in the video clips selected for this study. Through their behavior and play, preverbal children express implicit memories of experiences that happened earlier on in their lives. At times, however, it seems to me that some of these children communicate experiences remembered explicitly, even giving factual details in their behavior and play. Often this happens when triggered by adults relating the prenatal or perinatal experience and bridging the implicit memory of the child with actual and explicit facts of what had happened. In my work at the BEBA Clinic, I have often seen this bridging between implicit and explicit memory happen when a parent or therapist verbalizes events related to a specific prenatal or perinatal story of the child, and the child engages in a behavior or play correlated to the event described. For example, this is seen when the parents are talking about the birth history and the child starts to make the specific movements and express the emotions he felt when he was born. It is seen also on other occasions when a preverbal child initiates showing with her behavior a specific part of her prenatal or perinatal story. In one of the video clips selected for this study, a 16-month old child who was transferred by ambulance to the hospital after birth, goes to the closet, takes a toy ambulance from the shelf and starts to recapitulate through her play detailed events surrounding the ambulance transfer to the hospital. An example like this, in my mind,

clearly questions the developmental time when explicit memories are consider possible by some researchers.

The theory of implicit/explicit memory as presented by Siegel and Squire is embedded in the local model. These authors are able to explain early imprinting of sensations, emotions, motor movements and behaviors in the first year and a half of life (and probably before, in the prenatal life, too), but cannot explain a later recollection of the actual event that created these implicit memories (because, according to this theory, the brain is not yet mature enough to form "factual" or "autobiographical" memories). In this sense, the implicit/explicit memory theory as presented by Siegel and Squire fails to explain the recollection of prenatal life. Siegel & Hartzell (2003) still believes in infantile amnesia as a universal phenomenon occurring across cultures and clarifies that: "It has nothing to do with trauma but instead appears to be dependent on the fact that maturation of particular structures in the brain has not commenced" (p. 23).

Following the transcendent model of memory, as well as the integrated or holonomic model, it makes sense for me to say that although the human biological aspect registers memories implicitly during the prenatal period and the first eighteen months of life, there is also a transcendent source of awareness independent of the brain that is recording the experience of the prenate or child explicitly. It seems congruent with current neurobiology (Siegel & Hartzell, 2003; Squire, 1998) that early memories are stored as implicit memories in the physical form, but following the transcendent model of memory, I hypothesize that early explicit autobiographical memories are possible as well in infants, and recorded by the transcendent self. This explanation could account for the behavior of the 16 month-old child, Sarah, playing with an ambulance and toy figures,

and showing in her play explicit autobiographical events that happened to her right after she was born. This explanation may account as well for the fact that adults, toddlers—and preverbal children—sometimes appear to remember and communicate explicit aspects of their prenatal and perinatal experiences.

Traumatic Imprinting from the Prenatal and Birth Periods

From conception until the moment of birth, prenatal and perinatal psychologists posit that every aspect of prenatal experience shapes and contributes to the mental, emotional, psychological, physical and spiritual development of the individual. More and more researchers and therapists (Castellino, 1995; Cheek, 1986; Grof, 1992; McCarty, 2002; Nathanielsz, 1999; Noble, 1993; Rank, 1929) postulate that prenatal life and birth set fundamental imprints and beliefs in the person. For this reason, "an understanding of the effects of prenatal life and birth is a profound window from which to view the client/patient because it is during this time that the primary imprints for life are set" (Castellino, 1995, p. 33).

Cheek (1986) explains human imprints as the result of experiences that produce injury or great emotional stress, together with the emotional and physiological responses to them. This kind of imprint can happen at any moment and tends to influence the individual throughout life unless modified in therapy. In a similar vein, Noble (1993) describes how "imprints influence perceptions and personality development; they do not fade with the passage of time" (p. 56). Instead, they "form a kind of template or pattern on which later hurts are layered" (Emerson et al. 1999, p. 7). From the prenatal time, the experiences most likely to be recalled are the ones associated with strong emotions, high level of adrenaline and neuropeptide receptor activity (Menzam, 2002; Wade, 1996).

McCarty (2002) talks about beliefs as the foundational component that organizes our personal reality—using a concept introduced by Talbot (1991)—and postulates that "our earliest experiences lay the *belief blueprints* of our reality" (p. 356). She states that babies' beliefs arise from a combination of several influences including his own consciousness and what he brings with him into this life, his genetic material embedded with generational influences, his parents' conscious and unconscious beliefs, environmental factors, plus other people and energies around him. McCarty maintains that during conception, pregnancy and birth, these beliefs create a synergistic impact and form a blueprint for the remainder of life.

From different perspectives—neurobiology, medicine, psychology and psychotherapy—the idea that conception, gestation and birth are very important moments in our existence, and set imprints and beliefs that will most likely last for the rest of our lives, is gaining ground. The researcher cannot avoid asking: Why do these early experiences have such an impact in the person? Again we find that, depending on the conceptual model that the researcher is holding as his own belief system, different explanations will be offered to answer this question. For some researchers (Castellino, 2000; Emerson, 1992), the fact that many experiences of conception, gestation and birth are traumatic leaves an imprinting in the body and energetic system of the person that can lead to the development of post-traumatic symptoms.

Some authors (Verny & Kelly, 1981) have described that, when a traumatic or stressful situation occurs, the hormone ACTH (adrenocorticotropin hormone) is released in the body. This hormone plays an essential role in helping to retain memories. When the experiences during gestation and birth are stressful, the body of the mother releases

the hormone ACTH. This hormone floods the fetus and helps record the stressful event. "Every time something frightens her, large amounts of the hormone flood into the child's system, helping him to retain a clear, vivid mental picture of her upset and its effect on him" (p. 187). This explanation would account for any stressful experience at least from conception to birth. Since it refers to the release of ACTH in the body of the pregnant mother, one could speculate that the eggs in the mother before conception could also be affected hormonally.

Even with the presence of ACTH hormone in times of stress and trauma, it is a common experience to forget our first years of life (including the time spent in the womb), although these years often carry some trauma for the child. Some authors (Marquez, 2000; Noble, 1993) assert that these traumatic memories are repressed or forgotten, as a way to preserve the integrity of the self. "A traumatic event remains deeply imprinted as organic memory, but the accompanying shock creates a neurochemical barrier of repression between the unconscious and conscious mind" (Noble, 1993). Janov (1983), the father of primal therapy, clarifies this idea even more: "There are chemicals in the brain triggered by pain to eradicate the memory of the trauma. Note that the chemicals do not rid us of the trauma itself only of our memory and consciousness of it" (p. 15).

The notion of implicit memory helps us understand how early experiences not remembered by our rational mind, are still part of our behavioral, emotional, perceptual and perhaps bodily memory (Siegel & Hartzell, 2003). I believe we need an integrated or holonomic model to explain many cases of adults and children that have an explicit—factual or autobiographical—memory of a traumatic event that happened before their

second year of life (when, following Siegel's explanation, the brain was not mature enough to have them).

Joanna Wilheim (2002), a Brazilian analyst, postulates that early imprints are initially stored as sensory impressions, and acquire a mental representation later on. Her clinical experience has shown her that early imprints can be traced back to the moment of conception, when the germinal cells are capable of gathering sensory impressions. This idea has been further elaborated by Farrant (1988) Larimore & Farrant (1995) and Turner & Turner (1998).

Memories of Conception

Larimore and Farrant (1995), both primal therapists, understand cellular consciousness as the memory of the earliest experiences in life. They have been working with hundreds of people who remember their conceptions and express it through similar movement patterns. "Cellular consciousness is the complete memory that we each carry in our bodies of our earliest experiences, including conception and the separate experiences of being a sperm and an egg" (1995, p. 18).

Larimore and Farrant (1995) identify six body movements that happen spontaneously in people from all over the world without having been exposed to any information about cellular consciousness. These movements show: The egg leaving the ovary, the sperm awaiting ejaculation, the sperm's journey to and fertilization of the egg, the egg's welcoming the sperm in, conception and the descent through the fallopian tube, and implantation. Their experience shows that clients ascribe similar meaning to these movements. This fact leads them to believe that conception leaves a powerful imprint in the psyche. Here is an example of how clients experience the descent through the

fallopian tubes: “The client’s movements as the zygote, and then blastocyst, during this period are gentle, almost continual, and quite beautiful. The period going ‘down the tubes’ is usually one of bliss, union, relaxation, comfort and growth” (p. 22).

Several authors (Janov, 1983; Larimore & Farrant, 1995; Turner & Turner, 1998; Wilheim, 2002) maintain that conception and surrounding events leave a strong imprint in the person. After 27 years of research on the psychological impact of conception, Turner and Turner maintain that conception holds one of the most important keys to understand our ability to create, sustain and destroy relationships throughout life. Dr. Arthur Janov (1983) asserts that “Our motivations for conceiving are literally filtered through the tissues that form both the baby itself and the baby’s first environment” (p. 28), which often has profound and lasting consequences. Wilheim presents a clinical study that illustrates how much conception-imprints influence the behavior of a female patient with a strong impediment to mate. Wilheim suggests that the moment of conception may be the:

> Origin of a feeling of guilt, both to the sperm’s cellular memory—for having forsaken his kinds in the field of death—and to the egg’s cellular memory—for having “left its mother’s home”, for having “married a stranger”, for having dared to face the unknown adventure of starting a new life on its own. (p. 22)

Cellular memory, as presented by primal therapists such as Farrant (Larimore & Farrant, 1995; Raymond, 1998), attributes consciousness to the cell and consider that memories from the earliest period in life—beginning with or even prior to conception—can be stored in the cells. Cellular memory is part of the non-local memory model, as we described earlier on. McCarty (2004) considers that Farrant’s perspective has elements of

both transcendent and biological perspectives lumped together under the name of cellular memory.

Other authors, like Chamberlain (1990) hold a different perspective as they address the cases of clients remembering their conception. Chamberlain does not follow the second memory model (non-local) to explain this kind of early memories, but follows the transcendent model. Here is the case of one of his clients remembering her conception:

> 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 the trouble." (p. 181)

Chamberlain's explanation of conception memories relies on the transcendent model of memory. This model certainly has room to accommodate the idea that early experiences of conception can be remembered later on in life. In fact, memories of conception lead us to the conclusion that memory is independent of the brain, since these memories arise from a time when the brain was not yet existent.

Memories of Gestation

Thousands of people have shared their memories of prenatal life in the context of psychotherapy or hypnosis (Verny & Weintraub, 2002). In order to understand the different kinds of memories from prenatal life, it is important to look closer into the evolution and growth of the prenate during the nine months of gestation. There are many

works that describe and depict the precise biological development of a prenate (Flanagan, 1965; Nilsson, 1990); others that explain the physiological development of the brain and the physical senses (Chamberlain, 1999a; Panthuraamphorn, 1998); and yet others (Luminare-Rosen, 2000) that include as well the emotional, and mental development of the prenate and their correspondence to the biological phases of growth. In this section, only the most relevant information related to prenatal learning and memory will be analyzed.

Physiological Development of the Brain and the Physical Senses

The brain seems to develop in two major phases. The first phase begins during the 10th week of gestation and continues through the 18th week. During this phase the number of brain cells is established. The second phase refers to the growth of brain cells as they increase in weight and size. This phase starts around the 18th week and continues until three years of age. "This period of brain growth is characterized by a high degree of plasticity, which means that environmental stimuli during this period might have a strong and long-lasting influence on further development" (Panthuraamphorn, 1998, pp. 138, 139).

The senses develop very rapidly as well during the gestational period. As Chamberlain states (1999a) the sense of touch is operative in the second month of gestation. Reaction to external sound by the prenate has been recorded as early as 16 weeks, two months before the ear is fully formed. Visual activities start as well long before the eyes are formed and before eyes open—around week 26. Taste receptors are operating by 14 weeks, and are very connected to the development of the sense of smell.

Emotional and Mental Development of the Prenate

The discovery of ultrasound has permitted researchers to observe the fetus in its natural environment. Out of this observation, more and more evidence appears that demonstrates social and emotional behaviors in prenates, as well as a capacity to communicate, learn and remember (Sallenbach, 1991; Van de Carr & Lehrer, 1997).

Sallenbach (1991) mentions three distinct phases in the prenatal learning process. During phase one—covering the first trimester—the formation of the embryo is purely somatic, and learning and perception are described as somasensory. Positive and negative experiences can be incorporated into the somatic structure, as well as the corresponding emotional responses. The second phase—corresponding mostly to the second trimester—shows a beginning dominance of the vestibular, auditory and olfactory systems. During this phase, the fetus begins to discriminate through movement and auditory perception. In the third phase—covering the last trimester—there is a growing integration of sensory information and the central nervous system displays increasing dominance.

Sallenbach (1991), Panthuraamphorn (1998) and Van de Carr and Lehrer (1997) have studied prenatal learning and suggest different stimulation programs depending on the developmental phase of the prenate. Sallenbach postulates that learning, in the first phase, is mostly tactile and auditory, while there is a somatic identification with the emotions of the mother and the family. In the second phase learning is auditory—soft, low frequency tones and human voices—combined with movement. In the third phase, the prenate has the ability to integrate multisensory learning, language and higher auditory frequencies. Sallenbach suggests that in this phase there is an elementary sense of Self.

Van de Carr has pioneered the field of prenatal stimulation since 1979. He created a program known as the Prenatal University where he teaches parents how to interact with their prenatal children beginning in the fifth month of gestation, using words, touch, games, music, story-telling and even numbers. Research in the field of prenatal stimulation is providing a lot of data on the study of prenatal memory as well as demonstrating the prenatal capacity to communicate and learn. Van de Carr's research shows that children who have been prenatally stimulated recognize words and demonstrate verbal skills much sooner that other children who have not received comparable stimulation. His research also shows significant differences in bonding, early infant speech attempts, early development of teeth and duration of breastfeeding (Chamberlain, 1999a; Van de Carr & Lehrer, 1997). Van de Carr transcribes a comment from a prenatal classroom mother about her baby's sensory memory:

> With my first child, my husband would rub my stomach every night at 10 o'clock and rub the baby's back. The baby would move underneath his hand and calm down, which would then let me sleep. After the baby was born, we noticed that if she was upset or cried, she would calm right down or go to sleep if he rubbed her back. (1997, p. 73)

Inspired by Van de Carr's work, obstetrician Panthuraamphorn (1998) created a Prenatal Enrichment Program at a hospital in Bangkok, Thailand. This program starts at week 12 and is divided into two phases. The first one promotes the health and wellbeing of the mother, and facilitates the establishment of a strong and loving bond between parents and prenate. The second phase is a multisensory program that stimulates the auditory, tactile, visual and vestibular systems.

> At 20 weeks, the program included daily 20-minute sessions using a recorded tape of the parents' voices, calling the baby's name, talking to the baby and playing light music. The program progressed to include nature sounds, bell sounds, fingertip massage, the Kick Game, experiences of hot and cold, and water play with a shower spray on the mother's abdomen. (Chamberlain, 1999c, p. 40)

Chamberlain (1999c) refers to a large program implemented in Caracas, Venezuela, and directed by Beatriz Manrique. This study shows how prenates who received a stimulation program during gestation had an advantage over other children in almost every category measured including auditory capacities, speech, memory and motor skills. These studies on prenatal stimulation demonstrate the fact that prenates are able to learn and communicate from at least the 20th week of gestation.

Conjectures about the emotional life of the prenate date back at least to the Renaissance period. Writing about the emotional life of the unborn child, Leonardo Da Vinci (as cited by Blum, 1991) states:

> The wishes of the mother, which she had when she was pregnant, can often be found impressed on the child. A strong wish of the mother, her fears and her pain, all this has more power over the child than it does over the mother. (p. 284)

Observations by ultrasound researchers on the interactions between twins in the womb lend credence to Leonardo's comments in the capacities of the prenate for emotional communication. From as early as 20 weeks of gestation interactions between twins show behaviors that reflect a variety of feelings (Piontelli, 2004). "Ultrasound observations from various parts of the world have reported affectionate, friendly

behavior, playing cheek to cheek, kissing, aggressive punching, pushing and kicking—behaviors which reflect a spectrum of feelings" (Chamberlain, 1999c, p. 36).

Several authors (Chamberlain, 1999e; Van de Carr, 1997; Verny & Weintraub, 2002) refer to the incredible mental development that occurs during the third trimester, and the prenate's ability to learn sophisticated things like numbers, words, songs and stories, as well as his ability to be a responsive communicator.

Carista Luminare-Rosen (2000), based on a blending of Eastern and Western perspectives, has developed a Holistic Trimester Chart of the Human Personality that describes the development of the physical, emotional, mental "bodies" during the gestational period. During the first trimester there is a clear development of the physical body, and an embryonic capacity for emotional response. "Although the emotional body is not fully active during the first trimester, it is mildly influencing the fetus, since primal cellular consciousness already exists" (p. 199). By the end of the third month all the biological systems are formed and will continue to grow. During the second trimester the emotional body is actively integrating and responding to the physical influences of the mother, and begins to convert sensations into emotions with increasing sophistication. "Modern scientific prenatal research describes the child becoming highly sensitive to the emotions of his mother around this time, as well as having his own independent emotional reactions" (Luminare-Rosen, 2000, p. 201).

During the third trimester, the physical body matures to full term and the capacity for emotional response continues to grow. At the same time, the prenate becomes more responsive to thought, his/her memory expands and the ability to differentiate experiences and compose cognitive responses develops.

In this section, the capacity of the prenate to learn, remember and communicate has been examined as well as his physical, emotional and mental development throughout the three trimesters of gestation.

Birth Memories and Trauma

Like gestational memories, birth memories have been spontaneously remembered by thousands of adults in the context of various modalities of therapy (Chamberlain, 1999e; Cheek, 1986; Farrant, 1988; Grof, 1992; Janov, 1983; Lake, 1980; Rank, 1929; Winnicott, 1958). In general, the types of experiences most likely to be remembered are those that have great significance and a high degree of emotional charge—either positive or negative (Schacter, 1996). In this context, it does not come as a surprise that birth is a common memory for thousands of people in therapy. At the very least, birth is a very significant and intense event, and at the most, a traumatic experience for the child as well as for the mother. Emerson (1992) reminds us "Birth does not need to be traumatic in order to have a strong influence on the personality" (p. 6).

Birth memories often, however, contain some degree of trauma, from mild to severe. Emerson (1992) has done extensive work with adults and babies and presents a study based on his clinical observation of a random sample of 200 infants, in which he found that 95% of them had some degree of birth trauma.

Emerson believes that many more children are traumatized at birth than is normally accepted. To illustrate this idea, he refers to the frequency of crying in babies. According to Kitzinger (1990), an expert in this subject, it is considered normal for a baby to cry about two hours a day, and occasionally up to six hours. Emerson (1992) states that a baby born without trauma cries an average of 20 minutes a day and most of

the crying is used to communicate needs and discomforts. Solter (1995) also supports the idea that babies who had difficulties at birth tend to cry more and wake up crying often at night during the first 14 months.

The percentages of babies experiencing birth shock and trauma presented by other researchers, like Dr. Viola Frymann, a San Diego osteopath, are a bit lower but still considerable. In her study of 1,250 infants, Frymann found that 88% showed evidence of unresolved cranial birth trauma (1966). According to Castellino, the occurrence of physiological shock during birth is grossly under-reported and the long-range effects of birth shock on babies have been little understood. Castellino (2000) notes:

> I think that, more often than not, at some time during a birth, most babies experience some level of shock, especially during the later stages of birth when the baby is likely to experience a loss of oxygen or hypoxia for a short period of time. (p. 14)

On the other hand, some authors (Tendam, 1990; Turner & Turner, 1998) state that birth trauma is less prevalent than commonly believed, and that a normal, uncomplicated birth should not be traumatic for the child. These authors have a tendency to consider more traumatic other experiences of life like the separation from mother after birth, the prenatal time or even the memories of a previous life. Tendam (1990), out of his exploration of the literature on reincarnation as well as his work as a past-life therapist, suggests that: "The birth itself may re-stimulate traumas from past lives or reinforce traumas already re-stimulated in the prenatal phase" (p. 158). Turner and Turner (1998), pioneer researchers and primal therapists from the Netherlands who have worked

with more than 10,000 subjects, have observed among their clients that separation after birth tends to be more traumatic than the birth itself.

> In our research of almost thirty years, with tens of thousands of people, we have concluded that unless there is a medical crisis the birth itself is not so traumatic. But, being separated from mother after birth is the truly traumatizing event at the beginning of life. (p. 30)

The reality is that potentially normal births are often treated as medical crises in the United States and most of the Western world. Nowadays, the majority of babies are born in hospitals, and although many lives have been saved as a result of technological interventions during birth, hospital births have been reported to be more stressful and traumatic than home births. A study conducted by Geber (1958) found that when stress hormone levels were measured at birth, the hospital born babies produced higher levels of stress hormones compared to the babies born at home.

> Ironically, the main difficulty with childbirth today is that modern medicine has been *too* successful in its attempts to rescue mothers and babies when something goes terribly wrong. The problem is that an entire system of care has been built that focuses on disasters and expects them to occur. (Arms, 1994, p. 27)

Obstetrical interventions used in the past for emergency situations—induced labor, cesarean birth, suction birth, drugs, etc.—have now become the norm. This is having an impact in the amount of stress and trauma experienced by babies and their mothers during delivery. Dr. Michael Odent (1994, 2002, 2004), a leading pioneer in natural childbirth who has revolutionized modern obstetrics, warns about the consequences of medicalized births:

> In the USA the Caesarian rate has multiplied almost four times in the last fifteen years. More and more babies are born impregnated with drugs which had been given to the mother during childbirth. The number of babies who are separated from their mothers at birth and transferred to pediatric units has reached unbelievable proportions. Such practices should become a major concern for public health bodies (2002, p. 68).

A wealth of leading edge research in the field of prenatal and perinatal psychology highlights the fact that birth is a very intense experience, often traumatic, and creates strong imprinting in children (Castellino, 2000; Emerson, 1992; McCarty, 2002). Grof (1994) writes about the roots of human violence and greed, and states that the circumstances of birth can create a disposition to violence and self-destructive tendencies or to loving and healthy behaviors and relationships. "The vital emergency, pain, and suffocation experienced for many hours during biological delivery generate enormous amount of anxiety and murderous aggression which remain stored in the organism" (p. 10).

A number of researchers have studied the relationship between birth trauma and suicide. Psychologists and therapists first observed this relationship during the last century, starting with Otto Rank (1929). Verny (1989) points out how, more recently, statistical studies have been conducted that demonstrate the correlation between birth trauma and proneness to suicide. The first statistical study was conducted in 1985 with adolescent suicide victims (Salk, Lipsitt, Sturner, Reilly, & Levatt, 1985). Out of 46 variables tested, they found an increased rate of several perinatal risk factors for adolescent suicide victims, including respiratory distress for more than one hour at birth.

Another statistical study was conducted in 1987 in Sweden and the United States, in this case with adults (Jacobsen, Eklund, Hamberger, Linnarsson, Sedvall, & Valverius, 1987). "Twelve possible risk factors were considered during the life span of the victims. Birth injury was found to be more closely associated with suicides than the other 11 risk factors including socioeconomic variables" (Verny, 1989, p. 165). The correlation between birth trauma and suicidal tendencies indicated by these studies suggest that experiences at birth—even if only recorded at an implicit level—can have a profound impact in later behavior. Suicidal attempts in adults have also been correlated with abortion attempts performed by their mothers (Noble, 1993).

> These attempts turn out to be related to the month in which the mother had tried to terminate the pregnancy. The survivors also had used a method of suicide similar to the mother's abortion attempt—for example, instrumental or chemicals. (p. 59)

Most cases of birth memories and birth trauma present in the literature refer to adults, as these cases started to emerge in the therapy rooms of psychologists and therapists working with them. Later on, these memories were traced back to an earlier age. Studies showed how toddlers are also capable of remembering their births (Rhodes, 1991, 1996) and talk about it once they start to speak. Chamberlain (1990) states that often, after a year or two these memories tend to slip into the unconscious mind. Emerson (1992), Castellino (2000) and McCarty (2002) have been working with children of all ages, from newborns to adolescents, and have reported many cases of children remembering their births and prenatal lives. In line with the work of these pioneering therapists, this study was undertaken to demonstrate that preverbal children, in addition to

toddlers and adults, are capable of recording and remembering experiences of their birth and prenatal lives.

> 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. (Chamberlain, 1990, p. 177)

Infant Memories

For a long time, medicine and psychiatry had considered children younger than two years old to be unable to record and recall memories because their large nerve tracts were not fully myelinized. They also considered young children incapable of thought because they were not able to speak, use symbols or lay down memory engrams (Verny & Kelly, 1981). Serious doubt has been cast on these theories by a number of studies on infant memories that demonstrate how infants are capable of short and long-term memories (Bauer, 1996; Myers et al., 1987; Rovee-Collier, 1993, 1999). In this section, we are using the term "infant" to refer to preverbal children, following its Latin origin which means "unable to speak" (Rowan, 1996). Patricia Bauer (1996) and her colleagues at the University of Minnesota have gathered evidence that children aged one to two years are able to recall specific events for weeks and even months.

> What seems to determine whether young children will remember events is precisely those factors that determine recall in older children and adults: Very young children's recall is influenced by what they are asked to remember, by the number of times they experience events, and by the availability of cues or reminders of them. (p. 39)

Verny and Weintraub (2002) present several studies that show how infants are capable of memory even though, as adults, most people are unable to remember their three first years of life. One of these studies was conducted by Carolyn Rovee-Collier (1993, 1999) and her colleagues at Rutgers University in New Jersey. In it, they observed infants between two and five months of age as they taught them to kick a mobile attached to their legs by a string. Several days later, when the children returned to the lab, they kicked frequently and spontaneously. Although the mobile was not there, these babies apparently remembered it and anticipated its reappearance.

> Clearly, neither the immaturity of their brain nor their inability to talk limits how long young infants can remember an event. As long as they periodically encounter appropriate nonverbal reminders, their memory of an event can be maintained—perhaps forever. (Rovee-Collier, 1999, p. 84)

Eve Perris (Perris, Meyers, & Clifton, 1990) and her colleagues at the University of Massachusetts found that six month olds are able to retain impressions of events for years. As Verny and Weintraub describe:

> The 24 six and a half month-old infants in her study had to reach for a rattle under two different conditions—when the room was lit, and when the lights were suddenly turned off. Two and a half years later these children were presented with the same task alongside a group of controls. The experienced children reached and grasped far more frequently than controls without the earlier exposure, and were four times better able to withstand the slightly scary experience of being plunged from light into dark. (Verny & Weintraub, 2002, p. 164)

Rowan (1996) refers to a number of studies (Engen, Lipsitt, & Kaye, 1963; Goren, Sarty, & Wu, 1975; Lipsitt, 1969) performed in the last decades that show the capacities of infants in different perceptual areas such as recognizing faces, attending to sounds, responding to different smells, etc. When it comes to babies' abilities to remember, Lipsitt's study performed with newborn babies—just a few hours old—present very interesting results. In this experiment, newborns learned to turn their heads to the right at the sound of a tone and to the left at the sound of a buzzer. When they turned their head in the right direction, they got a sweet taste in the mouth as a reward. It took only a few trials to learn which side to turn their heads to. Later on, when the signals where reversed, it took only around ten trials to learn the new task.

Myers et al.'s (1987) study shows how children that are almost three years old are able to remember something that happened two years earlier. This team of researchers from the University of Massachusetts observed a small group of children between six to 40 weeks of age in a distinctive laboratory environment where they were exposed to unique auditory and visual stimuli. Two years later, the same group of children was invited to participate in a study in which they were exposed to the same stimuli, as well as a control group of children who had never been in that laboratory environment before. "The unique context and procedures of our infant study seemed likely to maximize any memory retrieval. After all, how often do children experience alternating light and dark periods, luminous objects, invisible sounds, and objects revealed by a rising screen?" (p. 129). The results of the study show that, in a number of ways, children in the experimental group indicated memory for the repeated experiences they had two years before. This demonstration of long-term memory in infants is especially significant

because it shows how children are able to remember events they experienced before they where able to speak, something previously considered impossible by most researchers (Field, Bruner, & Cole, 1990). Akira Ikegawa (2002), introduced earlier, has gone even further, conducting two studies in Japan to explore whether young children remember and communicate about their time in the womb and/or birth. In the first study, using questionnaires Ikegawa asked mothers if their children—between one and six years old—had spoken about their birth or their time in the womb. The results show that 41% of mothers who completed the survey reported their children had spoken about their births, and 53% reported their children had spoken about their time in the womb. This study was conducted during five months in the year 2000. Seventy-nine mothers responded to it. The average age of the child who had prenatal or perinatal memory was three years old. The total number of responses describing concrete memory was 84. In 20 cases, the responses showed that children remembered color and brightness, in 19 cases children talked about memories of movement, 19 talked about womb conditions, 16 about feelings and 10 about temperature. A two year-eight month old child reported:

> It was dark and warm inside the tummy. I wish I could stay in there forever. My head hurt when I was coming out. It was very bright and cold. Mommy's face was very strange and I kept watching it. (Ikegawa, p. 12)

In another instance, a five-year-old boy told his mom: "It was dark and my heart pounded because it felt as I was falling into a narrow black hole. I wanted to say something but I couldn't because I had lost my voice" (Ikewaga, p. 34). In the second study, Ikegawa used a sample of 1,773 parents of preschoolers. In all, 838 parents returned the questionnaires. Out of these, 34.4% responded that their children had spoken

about their time in the womb, while 23.5% responded that their children had communicated about their experiences at birth. This study was conducted in August and September 2002. According to the mothers' responses, children tend to remember when their mothers talk at them during gestation but not during birth. In the cases when the mother had a hard labor, children had more memories than when labor was less strenuous. The survey results show that the mother's effort to communicate to their prenates and how the mom was feeling during pregnancy had the possibility to influence the baby's memory in the womb and at delivery. Ikegawa's work, in combination with the other cited above, demonstrates that infants are capable of short and long-term memory. As Tiffany Field writes:

> Once again infants have surprised us. They appear not only to learn by a number of complex processes, but also to remember interesting events days, months, and even years later. Like motor development, learning and memory seem to be enhanced by social interaction. (Field, Bruner, & Cole, 1990, p. 59)

This research project was designed to explore the subject of prenatal and perinatal memory further, to try to determine if preverbal children are also capable of remembering and /or expressing aspects of their prenatal life and birth through some of their behaviors, and, secondly, whether these behaviors can be reliably identified as such by trained observers. In this study, I have purposefully chosen to examine selected behaviors of children during PPN oriented therapy sessions that seem to be related to what the child experienced in the womb or during birth. If in fact these behaviors can be correlated to the child's prenatal and perinatal history, this study will provide evidence to support the hypothesis that preverbal children, based on observations by trained clinicians, are

capable of recalling and/or expressing experiences related to their early prenatal and perinatal lives.

CHAPTER THREE:

METHODOLOGY

According to Greig and Taylor (1999), the classic method for doing research with children is observation. This method is particularly helpful for doing research with young children unable to use verbal communication. Observation means watching children in different situations and holding the following questions: "What do they see, what do they feel, what do they think, what do they do? This is a procedure which empowers the child whose silent 'voice' is heard by the researcher, but also empowers the researcher herself" (Greig & Taylor, 1999, p. 84). There are different approaches and techniques in observation. In this study, an indirect observation was done based on archival data in the form of video clip examinations.

Population and Sample

Five trained observers in prenatal and perinatal therapy were assigned to watch five video clips. Each video clip included segments of one session with a preverbal child at the BEBA (Building and Enhancing Bonding and Attachment) clinic in Santa Barbara, California. The sample of observers used for this research was purposive. These observers were chosen because they met the following criteria: They were experts in the field of prenatal and perinatal therapy, had taken the two-year Castellino Foundation training in Prenatal and Birth Therapy, and were currently working with children and their families in this field, go to: www.castellinotraining.com. Information on the BEBA Clinic is provided in Appendix A. Their willingness to participate in this study was also an important consideration. Since the design of this research involved detailed

questionnaires and interviews, participants needed to be willing to take the time to respond.

The sample selection of video clips was also purposive. I selected clips that I believed were clear instances of preverbal children communicating some aspect of their prenatal and perinatal experience (gestation or birth). Some of these video clips were shown with sound and others in mute mode. The reason for cutting the sound in some of the video clips was so that the observers could not hear verbal clues that could prejudice them in one way or another. All of the video clips were filmed at the BEBA Clinic in Santa Barbara, California.

To choose the video clips, I asked three current facilitators and one past facilitator at the BEBA Clinic for their recommendations of which video clips to use for this study. The three facilitators who were currently involved with the BEBA Clinic and whom I interviewed were Nancy Greenfield, Jean Weitensteitner and Ray Castellino. I present more information on the clinical staff at the BEBA Clinic in Appendix B. Wendy Anne McCarty, co-founder of BEBA and co-facilitator of two video clips included in this study was interviewed as well. Each facilitator was asked to answer four questions related to the sessions they facilitated. Three of these questions were the same as the ones asked of the five observers:

1. Do you observe any significant behaviors in this nonverbal child that might reflect events from the prenatal and perinatal period? If so, 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? The fourth question was asked exclusively of the facilitators: 4. Are you aware of anything in the child's history that is related to what he/she is showing in the video clip?

Data Collection

Overview

The basic approach to collecting data from the five observers was the "standardized open-ended interview" (Patton, 2002). In this approach each observer is asked the same questions, in the same way and in the same order. This method facilitates the analysis, by making responses easy to find and compare. At the same time, I combined the standardized open-ended interview with an "interview guide approach" in that, when I thought that a participant did not answer a question fully, I added clarification or re-stated the question with the sole purpose of gathering a more complete answer to the subject being explored. According to Patton (2002), "[t]he interview guide provides topics or subject areas within which the interviewer is free to explore, probe, and ask questions that will elucidate and illuminate that particular subject" (p. 343).

Four basic questions, three the same as those I asked the observers and one different, were asked of each session facilitator. Additional questions were used when I thought it was necessary to elicit other information from the facilitator. The facilitators' interviews followed a more flexible approach than the interviews of observers since data from the facilitator interviews were not to be used for quantitative analysis.

Data from the interviews of facilitators and observers were gathered and recorded via phone conversations. This method was chosen because interviewees live in different parts of United States, as well as in Europe.

Protocol

First, a package was sent to the five observers. This package included an introductory letter with instructions; a DVD with five video clips; a page that listed the three interview questions; a page for writing their personal notes in response to these three questions; a multiple choice questionnaire sealed in a separate envelope; and a self-addressed, stamped envelope for returning the DVD after completion of the interviews.

As the instructions explain, I had them read the three interview questions and then watch the first video clip without taking any notes. Next, they watched the first video clip a second time immediately after the first viewing and took notes that related to the three interview questions in preparation for the phone interview I conducted with them. They followed this same procedure for each of the four following clips (i.e., watching Clip #2 once without taking notes, then watching Clip #2 a second time in order to take notes; then watching Clip #3 once without taking notes, etc.). The viewing of the five clips in this fashion took them about 45 minutes. After they had watched each of the five clips twice and taken notes, they called me to schedule a mutually convenient time for our phone interview.

Just before I was scheduled to call them for the interview, they watched the five video clips for a third and final time. If they wanted, they took additional notes at this time. During the call, I asked them the three interview questions for each of the five video clips. They could use their notes when responding. After we had discussed each of the clips, I had them unseal the envelope with the multiple-choice questionnaire. The questionnaire, which they completed while we were on the phone, listed ten possible prenatal and perinatal experiences. For each video clip, they selected the one option they

believed most accurately reflected what the child was communicating. They could also rely on their notes when completing the questionnaire. Our phone discussion took approximately twenty minutes.

A similar but different package was sent to the four facilitators. This package included the following: An introductory letter with instructions; a DVD with five video clips; a page that listed the four interview questions; a page to write their own personal notes in response to these questions; and a self-addressed, stamped envelope for returning the DVD.

They were asked to read the four interview questions and then watch the DVD. They only needed to answer the questions about the video clips of the session(s) they facilitated. They watched the video clip(s) as many times as they wanted to help them answer the questions, and they were encouraged to write notes in preparation for our phone interview. They were also welcome to refer to the intake form of the child and their notes from the past to refresh their memory about the history of the child.

After they had watched the clips and taken notes for the session(s) they facilitated, they contacted me to schedule a mutually convenient time for me to interview them over the phone. During the call, I asked them the four interview questions for each video clip in which they were a facilitator. They could use their notes when responding. Our phone discussion took no more than 20 to 30 minutes.

In order to maintain the validity of the research, I asked both, observers and facilitators, that they *not* (a) discuss the study or the video clips with any of our colleagues until after the research has been completed, or (b) show the DVD to anyone. I asked them to return the DVD once our interview was completed in order to respect the

privacy of the people in the clips. There was a self-addressed, stamped envelope for that purpose, and all observers returned the DVD. At the conclusion of the conversation, I expressed my appreciation for their time and effort in participating in this study and assured them that they would be apprised of the study's results.

Instrumentation

Two basic methods of data collection were used to gather the information from the observers: an interview and a questionnaire (just one method, the interview, was used with the facilitators of the sessions). I have developed both instruments. Greig and Taylor (1999) consider an interview an interactive procedure that allows the researcher to access dimensions of information, such as emotional responses and non-verbal cues, not available with other approaches. These interviews followed the general guidelines for designing interviews presented by Greig and Taylor such as the following: Use open-ended questions; ensure questions are clear, unambiguous and short; and avoid leading questions, technical terms, emotive language and negatives.

In this study, interviews were performed via the phone because of the nature of the sample. I was aware that in doing so, some important non-verbal cues were missed, like body movements or body posture. Still an interview on the phone provided more information than a written interview and was more conducive to dialogue and deepening the exploration of a previous observation. At the same time, some of the cues provided by the tone of the voice or the speed of conversation were still available.

After the interview, the observers were presented with a questionnaire. According to Greig and Taylor (1999), "Questionnaires are a popular research tool because they can

be quickly designed, administered—even by post—to large numbers, and are easily analyzed" (p. 127).

Third, both interviews and questionnaires were compared to the intake forms that the BEBA Clinic has on the history of the preverbal child and his/her family. Appendix C contains the general intake form used at the BEBA Clinic. Fourth, facilitators were asked to answer the same three questions used in the observer interviews for the sessions they facilitated, plus an additional question that only facilitators had to answer.

Reliability

Roberts (2004) explains that, "reliability is the degree to which your instrument consistently measures something from one time to another" (p. 136-137). In this research project, the reliability of the two instruments—an interview and a questionnaire—was tested. A procedure called inter-observer reliability was used, in which five independent observers were asked through an interview and a questionnaire about their perceptions of the repetitive and/or significant behaviors of children observed by video clip examination. This study examined the degree to which there was consistency across the five independent observers.

Interview Questions

Interviews were conducted with individuals from two different groups. One group was the observers who never met this child and his/her family and did not have any information about their history, and another group was formed by the facilitators of the sessions performed at the BEBA Clinic and from which the video clips had been extracted. The facilitators of the sessions knew the history of the child and were invited to

read the intake form of the child and his family to refresh their minds about the case before performing the interviews.

The questions that were 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 via videotape examination? Three questions were asked to observers in order to explore this topic:

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?

The same three question plus an additional question was asked of the facilitators of the sessions. The additional question was the following:

4. Are you aware of anything in the child's history that is related to what he/she is showing in the video clip?

Questionnaire

After the interview, a multiple-choice questionnaire was presented to the observers that asked them to select one of ten choices that would describe best the kind of prenatal or perinatal experience the child seemed to be communicating. The facilitators of the sessions did not need to respond to this questionnaire because they helped this researcher to select the video clips and already knew the "correct" answers. Throughout this document, I will be referring to "correct" or "right" answer as synonymous to an "expected" answer. I made sure that each video clip reflected only one possible answer to

avoid confusion and 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: 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

Field Testing

Because of the fact that I was using my own instruments, a pilot study was performed to test both the interview and the questionnaire before the actual research was performed. Because of the size of the final research project (five observers, five video clips and four different facilitators) the pilot was conducted with just one person. This person was not involved in the study and did not know anything about the history of these children and their families, but had all met the criteria that applied to the observers: expertise in the field of prenatal and perinatal therapy, completed the two-year Castellino Foundation training in Prenatal and Birth Therapy, and presently working with children and their families in this field. The same DVD was used, as well as the interview and the

questionnaire. This pilot study helped me pretest the instruments. It was important to pay attention to several aspects presented by Roberts (2004): "Understandable instructions, clear wording, adequate answers, sufficient detail, regional differences, difficult sections, irrelevant questions, length and convenience" (p. 139). Following this pilot study, the instruments were revised to reflect the recommendations from the subject of the pilot study.

Data Analysis

This was a mixed methods study that combined quantitative and qualitative analysis. According to Rudestam and Newton (2001), "This approach combines the rigor and precision of experimental (or quasi-experimental) designs and quantitative data with the depth of understanding of qualitative methods and data" (p. 45). The design of this mixed-method study is sequential. This researcher collected qualitative data in the form of interviews and then gathered quantitative data in the form of a questionnaire.

Analysis of Qualitative Data: Interviews

I interviewed the four facilitators of the therapy sessions featured in the video clips and the five observers. These nine interviews were analyzed and compared to extract qualitative information. It is important to take into account that there existed an important difference between the observers and the facilitators. The observers did not know anything about the children's history, but the facilitators offered information about the children's history that helped to analyze the video clips. After studying Tesch's (1990) eight-step guide to analyzing textual data, and Roberts's quote (2004) of a doctoral student using a five-step process to analyzing interview transcripts, I followed

Roberts's example of a five-step process combining some suggestions from Tesch's guide:

1. Initial reading of transcripts. First, the nine interviews were transcribed. Then, all transcripts were read carefully in order to get a sense of the whole. Several topics were anticipated to emerge from this initial reading and each topic was given an initial coding.

2. Organizing and coding of responses. A list was made of all the topics, and then these topics were clustered together in themes or categories. This list of categories, more elaborate than the first one, was given codes.

3. Review of total transcripts and final coding. I went back and read all of the transcripts and wrote the codes next to the appropriate segments of the text. Attention was given to see if new themes and codes emerged.

4. Completion of data analysis and report of finding. The interviews to the observers had three questions. All the answers to these questions were grouped, compared and analyzed, using the codes created before. This resulted in themes that were compared as well to the ones created by analyzing and grouping the facilitator's interviews.

5. Review of the interviews to ascertain validity of findings. All the transcripts were reviewed for a final time to ascertain if the findings and main categories or themes were consistent with the data.

Analysis of Quantitative Data: Questionnaire

The number of responses to the questionnaire that correctly related each child's prenatal and perinatal history (as reported by the child's parents) to his/her observed

behavior was determined for each video clip, for each observer and for the sample as a whole (five video clips and five observers, which results in a total of 25 responses). A statistics consultant was utilized to determine whether a binomial probability with an alpha level of .05 was optimal for the analysis of the questionnaire results.

Summary

In this study, a mixed methods design was used to explore the subject of prenatal and perinatal memories in preverbal children. This study, in which experts interpret their observations of the behavior of preverbal children, was grounded in the assumption that these children are communicating aspects of their prenatal and perinatal life. The sample was chosen purposefully, both in the case of the five observers and in the case of the five video clip selections. The instruments used in this design were an interview and a questionnaire. The data were collected by phone interviews and via questionnaires. In order to analyze the interviews some coding processes were used to convert the raw data into themes or categories for analysis. These data were compared to the interviews with the facilitators of the sessions and with the intake forms that reflect the history of the children and their families. In order to analyze answers to the multiple-choice questionnaires a statistical model was applied using binomial probabilities and an alpha level of .05.

CHAPTER FOUR:

RESULTS

In this chapter I present the study results for each of the five video clips in turn. For each video clip, I do the following: (a) introduce the relevant history of the child drawing on the "factual" information gleaned from the parents during their contact with BEBA as presented in the intake form, and from the information provided by the facilitator, (b) provide my description of the behaviors manifest in the clip after having seen it at least a dozen times (with as little interpretation as possible), (c) present the facilitator's description(s) and interpretations of the behavior of the child in the clip, (d) present the themes that emerged from my interviews with the five observers and compare them to the interpretations of the session facilitator(s), and (e) present the questionnaire results.

To analyze the interview data, I followed Patton's (2002) prescription of engaging in an inductive process first 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 first looked for convergent themes, namely, instances in which two or more interviewees (whether they were 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, that is, instances in which only 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. Last, I looked for divergent themes, namely, instances in which two or more of the interviewees (whether they were a facilitator or an observer) had discrepant interpretations of a particular behavior manifested by the child in the video clip.

The reason that facilitator comments are included in the tables that present convergent and divergent themes is 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 their 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.

First Video Clip: David

From BEBA's archives of thousands of videotaped therapy sessions with approximately 120 families, I sought to find a video clip that BEBA facilitator, Nancy Greenfield, and I agreed was a vivid demonstration of a pre-verbal child re-enacting the experience he had during birth. I selected a clip from a therapy session that David, who was six months old at the time, had with Nancy Greenfield, his BEBA facilitator. I chose this clip because David's behaviors in the session seemed to me to be a clear instance of a pre-verbal child engaging in a series of movements and actions that reflected the behaviors of a baby failing to progress during the birth process. The behaviors David engaged in during the clip closely corresponded with the information David's parents provided regarding what happened during his birth.

David's Birth Story

According to his parents, David had a difficult birth. During his birth, David and his mother were in labor for two days, but labor did not progress. The medical team administered an epidural to reduce pain and pitocin to accelerate contractions. Even with that, labor did not progress past six centimeters. The doctor told David's mother that she had three more hours to labor her child. If the child did not come in that time, he would do a C-section. So she pushed very strongly and in a short time went from six centimeters to 10. Still, David was not able to get out, and the doctor ended up turning him slightly so that he could move out of the stuck place. The doctor turned David because his back was against his mother's side; therefore, his torso was not where it needed to be in order to get through the birth canal.

Another important element of David's birth is that his mother had a lot of fear about giving birth based on her own history. Her grandmother died at childbirth, and her mother watched as the grandmother died giving birth to her sibling. Nancy Greenfield speculates that there may have been a traumatic ancestral wound in his family about childbirth.

My Description of the First Video Clip

David is lying on his stomach and Nancy Greenfield is supporting his feet with her hands and talking to him. David looks at his father and mother and then rolls on to his back. He starts to push off with his legs against Nancy's hands, sliding backwards across the floor. His father enters David's path and waits for him seated on the floor with his right leg out stretched. David keeps sliding backwards by extending his legs against Nancy's hands until his head reaches his father's outstretched leg. David stops and begins to cry and fuss. His father moves his leg slightly to create space for David to continue moving backwards. David remains crying in the same place. His father strokes his head while his mother is sitting nearby. After crying for a couple of minutes he starts to extend his legs against Nancy's hands and moves backwards again. His father lifts his leg and David slides under his raised knee. Once three-quarters of David's body has passed under his father's leg, his mother slides him backwards and lifts him to her breast. David begins to nurse.

This sequence is comprised of one video clip lasting about five-and-one-half-minutes in length. The sound has been purposefully removed to avoid giving further information about the child's history to the observers.

Facilitator's Description and Interpretations of

David's Behavior in the Video Clip

Nancy Greenfield was a solo facilitator of this session with David. In my interview with her, she gave me very detailed answers about what she observed in the session as well as what she knew about the history of the child. I chose to paraphrase her interview, as well as the other facilitator's interviews, in order to summarize the thoughts presented, in an attempt to be succinct and brief. Nancy thinks that David is showing an entire birthing sequence in this video clip and lays out what happened to him during his birth. She describes David's birth in five stages:

Initial set up towards his scooting backwards: David begins the session on his stomach very self empowered, but then drops down into either resting or going to the edge of a collapse. His parents come toward him but he doesn't make eye contact with them, and rolls over and turns in the other direction. Nancy thinks that perhaps his mother's fears entered at this moment and David could not tolerate them and, instead of moving toward her in the birthing process, he rolls away from her.

Pushing and scooting backwards: Once on his back, David keeps very strong eye contact with Nancy, and uses her as a resource. He is pushing with his legs against Nancy's hands. David feels back into his empowerment. As he is pushing, he knows where he is going and is in control of his body for a while. Then a shift takes place.

Activation stage, cycling: David cannot seem to be able to find a comfortable position for his body, and he becomes very upset about it. He seems to be frustrated and finally angry. He also seems to be scared, or even terrified (but without the sound she

cannot comment on this). He cycles between an agitated place and the space where he keeps in communication and eye contact with Nancy.

Stuck place: He seems to be unable to find the right place for his torso and ultimately gets stuck under his father's leg. When he is stuck, his father's hand moves to the side of his right parietal bone. David reaches up and takes his father's hand towards his head. Nancy wonders if David was trying to bring the hand closer or to push it away, but resolves that most likely David was trying to bring it closer. The reason might be to show his father some place of pressure on his head.

Moving through, pushing himself out: Towards the end of the clip, there is a sudden shift and David moves a bit to the left. Nancy instructs his father to lift his leg a little in order to make more room for David. Nancy thinks that this section of the clip shows the part of the birth sequence when the doctor intervened to turn David. During his actual birth, Nancy recalls that they reduced the Pitocin, and the contractions became less intense, giving David more space to move through. At the end of the clip, his mother comes to pick him up and brings him to her breast.

Nancy summarizes this clip in the following way:

> I think initially he probably started his birth in a very resourced space and then something happened and I think that his mother had tremendous fear about giving birth; we know that her grandmother died at childbirth. So, my sense is that this little boy knew how to do this and then something, perhaps his mother's fears entered, and he couldn't tolerate it, and he pushed himself away from it. So instead of going towards her in the process of birthing himself, he moved away from her, he rolled himself in the opposite direction. That happened, and then it

> was the initial sequence of pushing, which was very empowering which shifted into a sequence of pushing that was highly activating. David seemed to be frustrated and angry, and he seemed to be fighting with an inability to find the right place in his torso, an inability to find the right position. And then ultimately, the sequence of getting stuck into his dad's leg. . . . He gets stuck, then something shifts his angle ever so slightly and all the energy opens up and there is an opening for him to come through and then he very powerfully pushed himself through and his mother met him and lifted him up and brought him to her breast to nurse.

Interview Results

I now present the findings from my interviews with the facilitator and the five observers regarding the first video clip. Providing verbatim quotes excerpted from the interview transcripts, I present the 12 convergent themes (i.e., interpretations of a particular behavior shared by more than one interviewee, whether the interviewee was the facilitator or an observer), three unique themes (i.e., an interpretation of a behavior expressed by only one observer and not the facilitator), and one divergent theme (i.e., when two or more of the interviewees, whether the interviewee was the facilitator or the observer, had discrepant interpretations of the same behavior) that I identified.

Convergent Themes

The 12 convergent themes cited above, are presented in order of the degree of convergence among interviewees, the first one being the most convergent and the last one being the least, and approximately following the sequence of events as they unfold in the video clip (since not everybody presented the events exactly in the same order): (a) birth

process, (b) pushing, (c) getting stuck, (d) expression of positive emotions, (e) expression of negative emotions, (f) going through, (g) crying, (h) turn, (i) crowning, (j) right side of face, head or body, (k) activation, and (l) cycling. Below I present the data supporting each theme.

Theme 1: Birth process. As shown in Table 1 below, in which I have excerpted verbatim quotes from the transcripts of my interviews with the facilitator and observers, all six interviewees interpret David's behavior in the video clip as a birth process.

Table 1

Clip 1: Theme 1: Birth Process

Facilitator	"From my perspective, as I watch the session, he did an entire birth sequence and basically laid out what happened to him during his birth ... So, I see that as being really specific, that this was a very literal translation of what his birth process was."
Observer 1	"He seems to be stuck. So for me it looks like a part of the birth, he is pushing and then he is stuck."
Observer 2	"So it is like descending through the birth canal."
Observer 3	"What I am seeing is a birthing process. Working through the birth canal and the cervix is not open at first, and he is waiting, and he is pushing through."
Observer 4	"I think, failure to progress at birth."
Observer 5	"I think it was a birth process."

Theme 2: Pushing. As Table 2 indicates, the facilitator and all observers agree that, once David is on his back he starts pushing with his legs, although Observer 2

Table 2

Clip 1: Theme 2: Pushing

Facilitator	"Those initial pushes indicated to me that when he got started he knew where he was going and he was in control of his body and he could access the left and the right side of himself with empowerment."
Observer 1	"He is pushing with his legs. And then he doesn't push on."
Observer 2	"He started to push, and then to do a turn."
Observer 3	"First he is very clear in pushing when there is no obstacle in the way. And he knows where to go. Very clearly, in the beginning."
Observer 4	"What I see is that he feels, he enjoys pushing off of the therapist's hands, and while he is pushing and moving, he seems calm."
Observer 5	"And then there was the whole pushing scene, where the focus remained and he was really strong and that impulse was really strong, and then he hit a wall which was his, I am assuming father's leg, and he was pissed."

recalls that he starts pushing before he turns on his back. This pushing happens mostly in the first part of the clip.

Theme 3: Getting stuck. As Table 3 demonstrates, all six interviewees interpret the behavior following the pushing as "getting stuck."

Theme 4: Expression of positive emotions. As Table 4 shows, the facilitator and four of the five observers note that during the time David was pushing, he expressed positive emotions, such as being clear, calm, strong, empowered and in control.

Theme 5: Expression of negative emotions. As shown in Table 5, the facilitator and three observers agree that when David gets stuck, he appears to express negative emotions like anger, frustration, desperation or fear.

Table 3

Clip 1: Theme 3: Getting Stuck

Facilitator	"Nancy explains why she thinks David got stuck and the doctor had to intervene and turn him during his actual birth:"The reason why the doctor had to turn him was that his back was against his mother's side, which means that his torso was not quite where it needed to be, which is what he was showing us, and the way he was rocking his torso and trying to spread his chest."
Observer 1	"He seems to be stuck. So for me it looks like a part of the birth, he is pushing and then he is stuck."
Observer 2	"And then somehow hit some resistance on top of his head. And there was some stuck-ness there."
Observer 3	"He is getting stuck. Pushing of course, all the time, and getting stuck."
Observer 4	"He is communicating that this stuck place doesn't feel good, that he doesn't like being in that stuck place."
Observer 5	"He was stuck, and he was pissed."

Table 4

Clip 1: Theme 4: Expression of Positive Emotions

Facilitator	"So once he was on his back, and he was making contact with me, very strong contact, I felt as if he came back into his empowerment. I could feel his midline, and he began to push which is a significant aspect of his birth process."
Observer 1	N/A
Observer 2	"I think that the child's birth process was going pretty well. Went through the turn, and doing OK."
Observer 3	"First he is very clear in pushing when there is no obstacle in the way. And he knows where to go. Very clearly, in the beginning."
Observer 4	"He enjoys pushing off of the therapist's feet—or his feet off her hands—and while he is pushing and moving, he seems calm."
Observer 5	"And then there was the whole pushing scene, where the focus remained and he was really strong, and that impulse was really strong."

Table 5

Clip 1: Theme 5: Expression of Negative Emotions

Facilitator	"I think that the child was very clearly sharing how difficult his birth was and how angry he was about that, and how frustrated he was about that. And I think how scared … He expressed fear for sure and it might have been terror, and without hearing the sound I can't really make a comment on that."
Observer 1	N/A
Observer 2	N/A
Observer 3	"He is showing his desperation. He is opening the arm, and showing several times where the pain in his face is."
Observer 4	"He is communicating that this stuck place doesn't feel good, that he doesn't like being in that stuck place. Whether it is … I think he gets angry, and he gets frustrated, and I think he is communicating that that doesn't feel good."
Observer 5	Observer 5 says that David seems to "hit a wall" which is his father's leg and displays anger, "But you know, it was great to see and express how pissed off he was, wouldn't want [him] to hold that inside."

Theme 6: Going through. As indicated in Table 6, the facilitator and three observers agree that by the second part of the clip, David is able to move forward as he powerfully pushes himself through his father's leg.

Theme 7: Crying. The sound on this clip was purposefully removed to avoid giving verbal cues about the child's history to the observers. Even so, as we see in Table 7, three observers refer to the fact that David is crying when he is stuck.

Theme 8: Turn. As Table 8 indicates, three observers refer to a turn that happens at the beginning of the clip, before David starts pushing. The facilitator refers to this turn as well, but adds another turn that she thinks happens later on and correlates to the history

Table 6

Clip 1: Theme 6: Going Through

Facilitator	"Then something shifts his angle ever so slightly and all the energy opens up and there is an opening for him to come through and then he very powerfully pushed himself through and his mother met him and lifted him up and brought him to her breast to nurse."
Observer 1	N/A
Observer 2	"It seems like there was quite a strong push toward the end, before he went to his father's legs. And that sort of phase is the ejection reflex kicking in, and then being picked up by mom."
Observer 3	"It was hard to go through."
Observer 4	N/A
Observer 5	"He was stuck and he was pissed and then … once the leg came up he was able to move through and bonded and connected with mom."

Table 7

Clip 1: Theme 7: Crying

Facilitator	The facilitator only referred to the fact that there was no sound in the clip so she couldn't distinguish the kind of baby's cry.
Observer 1	"So for me it looks like a part of the birth, he is pushing and then he is stuck. And he is crying."
Observer 2	" I had an overall feeling that as he was cycling in his crying and pausing, that there was a sense to me that he was coming more down into his body."
Observer 3	N/A
Observer 4	"Well, the repeat theme is that he pushes and then stops, and then when he is at the stopped place he starts crying."
Observer 5	N/A

Table 8

Clip 1: Theme 8: Turn

Facilitator	The facilitator of the session refers to two turns that happened at different moments of the birth sequence. One happens at the beginning of the video clip when David rolls back and lies on his belly. (The three observers talked about this turn as well.) Nancy remembers how, at that moment, his parents come toward him but he doesn't make eye contact with them. David rolls away from his parents and turns in the other direction. "I think that his mother had tremendous fear about giving birth, we know that her grandmother died at child birth. So, my sense is that this little boy knew how to do this and then something, perhaps his mother's fears entered, and he couldn't tolerate it, and he pushed himself away from it." Nancy refers to a second turn that happened later on in the birth sequence, after mom was fully dilated (10 cm). "I think what we are seeing is the turn, the doctor went in and shifted him … The reason why the doctor had to turn him was that his back was against his mother's side, which means that his torso was not quite where it needed to be."
Observer 1	"And there is this turn at the very beginning, so the turn looks easy and then it looks like rather at the end of the birth he gets stuck."
Observer 2	The second observer explains how there is some pushing that happens before David turns in his descent through what seems to be the birth canal."This turn is not a 180 degree turn but a turn from lying on his stomach to lying on his back."
Observer 3	N/A
Observer 4	N/A
Observer 5	"As soon as he rolled over and Nancy made contact with his feet, he was able to connect with her, on an eye contact."

of David's birth, when mom was fully dilated, and the doctor helped David to turn and get unstuck before he was able to be born.

Theme 9: Crowning. As Table 9 indicates, three observers explain how David gets stuck with his crown or head when he approaches his father's leg.

Table 9

Clip 1: Theme 9: Crowning

Facilitator	N/A
Observer 1	"And he is crowning on the head, (that) reflects the stuck place, the form of the head."
Observer 2	"I did notice he got activated when his crown, when his head contacted his [father's] leg."
Observer 3	N/A
Observer 4	Observer 4 refers to the moment David's head gets stuck, but he never uses the word *crown*. "And then he gets to a point where he gets some pressure up against his head, and then there is a place where when he gets stopped like that, that he gets activates and seems to get angry when he is stopped."
Observer 5	N/A

Theme 10: Right side of face, head or body. As shown in Table 10, two observers and the facilitator refer to the right side of David's face, head or body in different moments of their interviews, and attribute some significance to their impression that it was David's right side that did not go smoothly as he was descending through the birth canal.

Theme 11: Activation. Two observers and the facilitator agree that David gets "activated" in the middle part of the clip. Activated is a term used by Prenatal and Perinatal (PPN) clinicians (and others) to refer to a way of behaving that suggest emotional agitation, distress or upset. In David's activated state, he seems to be struggling and angry because he cannot progress (see Table 11).

Table 10

Clip 1: Theme 10: Right Side of Face, Head, or Body

Facilitator	"David reached up with his hand and pushed his dad's hand toward his head ... as if to find some place, or to show some place of pressure. It may have been the right side of his head, that as it was descending, some how didn't move smoothly and then the torso followed and got lost."
Observer 1	Observer 1 notices how David puts his hand on his right ear. "I am stuck, my right ear hurts."
Observer 2	Observer 2 hypothesizes that maybe David was lying on his right side when he was inside his mother's womb, which means that he would have been contacting his mother's sacral promontory with his right temporal lobe during the birth process. He also observes that David places his father's hand on that area of his head (the right temporal bone) as if he wants some contact there. "Curious about possible right lie, just because it just felt like he was wanting his father's hand—I assume it was his father—his father's hand on the right temporal area, near the right temporal lobe."
Observer 3	N/A
Observer 4	N/A
Observer 5	N/A

Table 11

Clip 1: Theme 11: Activation

Facilitator	"This whole midrange where he felt like he was really in an activated state, and struggling."
Observer 1	N/A
Observer 2	"I did notice he got activated when his crown, when his head contacted his [father's] leg."
Observer 3	"I did notice he got activated when his crown, when his head contacted his [dad] leg. And I have the curiosity, whether that has to do with the cervix or if pushing through something he got stuck a bit."
Observer 4	"And then he gets to a point where he gets some pressure up against his head, and then there is a place where when he gets stopped like that, he gets activated and seems to get angry when he is stopped."
Observer 5	N/A

Theme 12: Cycling. As shown in Table 12, one observer and the facilitator note the cycling that happens during the time when David is stuck. Cycling refers to moving between states of agitation and settling or pausing. During the pausing part of the cycle, David keeps in communication and eye contact with the facilitator.

Unique Themes

There are three interpretations that appeared in only one observer interview, which are (a) collapse and anesthesia effect, (b) not feeling the resistance, and (c) loss of orientation.

Theme 13: Collapse and anesthesia effect. Observer 5 notes that when David is lying on his belly at the beginning of the clip, he is flaccid and disoriented, which the observer attributes to David possibly re-enacting his response to receiving anesthesia."

Table 12

Clip 1: Theme 12: Cycling

Facilitator	"The next major section of the clip was him going through a number of cyclings through these activation places and me communicating with him and calling him back into eye contact."
Observer 1	N/A
Observer 2	"I had an overall feeling that as he was cycling in his crying and pausing, that there was a sense to me that he was coming more down into his body."
Observer 3	N/A
Observer 4	N/A
Observer 5	N/A

He can barely lift his head up. I question things like his nervous system being in collapse, I sense some anesthesia, not really engaged, no eye contact."

Theme 14: Not feeling the resistance. According to Observer 1, when David is crying and making the movement of the push, he is not feeling the resistance of pushing against something that would help him move forward. "There is this place where he is crying and he is making the movement of the push, but he does not come to a place of feeling the resistance, of pushing against the resistance."

Theme 15: Loss of orientation. Observer 3 interprets David's experience during the period when he seems stuck as one of losing orientation (in combination with feelings of desperation, which is Theme 5: Expression of Negative Emotions). "It was hard to go through. Where am I? I have lost orientation. Being stuck in a place where it doesn't proceed. And I feel desperate."

Divergent Themes

For the first video clip, the interviewees' interpretations contradict each other on only one theme, namely, David's relationship with his mother.

Theme 16: Relationship with Mom. As shown in Table 13, during the interviews, the facilitator and three of the five observers discuss the relationship between David and his mother. The facilitator and Observer 1 view David as emotionally disconnected from his mother, while Observers 2 and 5 note how David and his mother made some contact by the end of the clip.

Table 13

Clip 1: Theme 16: Relationship With Mom

Facilitator	"I brought his mother forward and he didn't want to use her as a resource." Nancy also refers to the end of the clip when mom comes to pick David up and brings him to her breast.
Observer 1	"'I can't sense mom.' He doesn't come into contact with mom."
Observer 2	"And having eye contact when mom came over. And then, the final part seems to be ... it seems like there was quite a strong push toward the end, before he went to his father's leg. And that sort of phase is the ejection reflex kicking in, and then being picked up by mom, and … yeah."
Observer 3	N/A
Observer 4	N/A
Observer 5	"Once the leg came up he was able to move through and bonded and connected with Mom ... But then he also responded so great to Mom, the connection was ... maybe he had eye contact with her, but he seemed to go right for the breast."

Questionnaire

At the end of the interview, observers were given a questionnaire containing ten multiple-choice answers, concerning what they thought the child seemed to be communicating during the clip (see Table 14). The "correct" answer for this clip was "failure to progress."

Table 14

Clip 1: Answer to the Questionnaire

Observer 1	"Failure to progress."
Observer 2	"Failure to progress."
Observer 3	"Failure to progress."
Observer 4	"Failure to progress."
Observer 5	"Failure to progress."

Because the questionnaire provided the observers with 10 different responses from which to select the correct answer, the probability of an observer selecting the right answer merely by chance would be one out of 10 if all responses were equally likely. However, three responses (birth with the cord around the neck, multiple conception, and use of heel sticks at birth) were never selected by any of the observers for any of the five clips. Although these three were legitimate possibilities, rather than far-fetched ones used to bias the findings in favor of my hypotheses, I, nevertheless, chose to analyze the data conservatively by stipulating that the probability of an observer "guessing" the correct answer by chance would be one out of seven (rather than one in 10).

All five observers selected the correct answer for David's clip. Using binomial probabilities with an alpha level of .05 with the likelihood that the observers would select the right answer by chance to be one in seven, the observers identified the right answer at a significantly higher rate than expected by chance, $p < .01$, one-tailed.

Conclusion

Not only did all five observers select the "correct" answer on the questionnaire when asked what prenatal or perinatal experience David appears to be re-enacting in the video clip, the observers' moment-by-moment interpretations of David's behavior throughout the clip have a high degree of correspondence with each other and with the story of David's birth as reported by his parents.

Second Video Clip: Sarah

Based on knowledge of the history of the child as the mother has presented it in the intake forms at the BEBA Clinic where this video clip was filmed, the interview of the facilitators and my own observations, the facilitators and I perceive that in this video clip Sarah is showing how she had an 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 birth, Sarah was transported about two miles away to Cottage Hospital, where she was taken to the Neo-natal Intensive Care Unit (NICU). Sarah did not have contact with her mother for at least a day. During that time,

her mom 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 non-verbal, 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 a small plastic bed from under the ambulance that fell out as they were lifting it 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 was the ambulance's driver, which she places back into 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 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 one 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?"

This sequence is comprised of one video clip lasting about two minutes. The sound has been purposefully kept in this video clip because the content of the

conversation doesn't give any cues of the child's history but helps provide a context for better understanding of what is happening in the moment. Here I transcribe the conversation that happens during the clip:

Ray: What are you getting up there? That one, ok . . . Oh, you want a tiger? . . . There you go.

Baby: Off.

Ray: Top off . . . This one, and this one, a child, thank you . . . The telephone stays in there.

Baby: 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 have been 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 ambulance toy from the shelf. Once 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 when 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 represent 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 coherent and consistent from the beginning to the end. What she is showing in the clip 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 plays with the ambulance during a session. Apparently, she did it during a series of sessions. Jean does not recall her being directly told about her history of being transferred by ambulance to another hospital.

Jean recalls how Sarah, at some point during the session 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 where unknown to her. At the same time, Jean remembers how the 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 the gurney up 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 in the driver's seat through the window.

After she put a 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"? It is a fact that, soon after Sarah's birth, her mother was trying to find out where she was transferred. The mother was on the phone to locate Sarah as well as to get herself admitted in the same hospital. Jean and Ray did not know this part of the history for some time, but later on, the mother told them. 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 the second video clip. Providing verbatim quotes excerpted from the interview transcripts, I present the six convergent themes, one unique theme, and four divergent themes that I identified.

Convergent Themes

The six convergent themes cited above, are presented in the order of their degree of convergence among interviewees, the first one being the most convergent and the last one being the least: (a) Vehicle (ambulance, car or bus), (b) Mommy, (c) Two adults, (d) child, (e) Removing the ambulance top, and (f) No distress or activation. Below I present the data supporting each theme.

Theme 1: Vehicle (ambulance, car or bus). As shown in Table 15, all seven interviewees notice the presence of a toy vehicle in the clip. Some mention an ambulance, others a car and others a bus.

Theme 2: Mommy. As shown in Table 16, all the observers, as well as the facilitators, agree that Sarah uses the word "Mommy" during this clip or wonders about her.

Theme 3: Two adults. As Table 17 indicates, three observers and Facilitator B speak about two adult figures. Facilitator A and Observer 4 speak about adult people in general, without specifying a number.

Table 15

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 and 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 really focused in on the ambulance, on that sequence, and it didn't come from somebody naming it ... I think she is very clearly and 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, my sense around it, 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 you know, 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 16

Clip 2: Theme 2: Mommy

Facilitator A	"She looked in it [ambulance] and she questioned: 'Mommy,' like 'where is Mommy?' And then she looked over her mom and then looked in."
Facilitator B	"And then there is a phone there, and she reaches for the phone and she says 'Mommy?'"
Observer 1	"She's looking for mom. And there seems to be a moment of being out of contact with mom, not being with mom, and then she's finding her mom in the room."
Observer 2	"And there was this bit at the end where she was looking for mom."
Observer 3	"How is Mommy?"
Observer 4	"And she said 'Mommy' three times, I think. I am not sure."
Observer 5	"She keeps mumbling initially 'Mom? Mom?' And then when she finds that there's somebody stuck, she goes, 'Mom!'"

Table 17

Clip 2: Theme 3: Two Adults

Facilitator A	"She takes figures, small figures of adult people, and puts one person in the window of the ambulance."
Facilitator B	"And then she puts a person inside the driver's seat, kind of puts it through the window cause that's what she physically can do at 15 months. And then puts in a child figure, and from that place she had asked to have the lid taken off, and handed the facilitator the two adult figures. First everybody's in the ambulance, and then she hands the facilitator the two adult figures and then the child figure."
Observer 1	"She is handling the little child to grown-ups in relationship to the ambulance, so it might be the way she went to the hospital, or she's handling the two grown-ups."
Observer 2	"Her selecting the ambulance, and whether she was taking there with her mom and dad, and my reasoning for that was the fact that in the first stage, the three people-toys that she put in the ambulance afterwards came out to be mom and dad and child. And also, this one was actually a lot harder to actually ascertain things from what was there. So I was just wondering."
Observer 3	N/A
Observer 4	"Putting people into the van. And the repeat behavior being, putting people in and out of the car ... It looks more like a bus or an ambulance."
Observer 5	"She puts them all in one by one, really showing us 'here is mom, here is dad.'"

Theme 4: A child. As Table 18 indicates, both facilitators and three observers think Sarah is playing with a toy figure of a child or baby.

Theme 5: Removing the ambulance top. As shown in Table 19, both facilitators and two observers remark that the top of the ambulance is removed during the clip.

Table 18

Clip 2: Theme 4: A Child

Facilitator A	"And then she takes … it looked like a baby, and then put that in the window of the ambulance."
Facilitator B	"And then puts in a child figure … First everybody's in the ambulance, and then she hands the facilitator the two adult figures and then the child figure."
Observer 1	"She is handling the little child to grown-ups in relationship to the ambulance, so it might be the way she went to the hospital ... Then she's bringing the child to them like not a child, as if he is a tool."
Observer 2	"The three people-toys that she put in the ambulance afterwards came out to be mom and dad and child."
Observer 3	N/A
Observer 4	N/A
Observer 5	"Here's the baby."

Table 19

Clip 2: Theme 5: Removing the Ambulance Top

Facilitator A	"She then had me take the top of the ambulance off."
Facilitator B	"She had asked to have the lid taken off."
Observer 1	N/A
Observer 2	N/A
Observer 3	"And the very clear opening of the car, when she takes away the roof."
Observer 4	N/A
Observer 5	"And then Ray takes the roof off."

Theme 6: Distress or activation. As shown in Table 20, facilitator A and Observer 2 point out that Sarah does not seem to have any distress during this clip.

Table 20

Clip 2: Theme 6: Distress or Activation

Facilitator A	"She had done a lot of work on that, on that story, and she is very coherent in the way she showed it and she was not distressed when she was showing it at all. But clearly, she had the theme."
Facilitator B	N/A
Observer 1	N/A
Observer 2	"And what was interesting is there was no … there didn't seem to be any activation for Sarah during this process."
Observer 3	N/A
Observer 4	N/A
Observer 5	N/A

Unique Themes

There is one unique category that appears in only one interview:

Theme 7: Sad and collapse.

Observer 5 thinks that Sarah seems sad at the end of the clip after mumbling "Mom?" 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 8: Figures of adults represent the parents or other people.

As Table 21 indicates, two observers and the facilitators speak about toy figures that represent people or grown ups in this clip. Two other observers think that those figures represent mom and dad.

Table 21

Clip 2: Theme 8: Figures of Adults Represent the Parents or Other People

Facilitator A	"She takes figures, small figures of adult people."
Facilitator B	"And handed the facilitator the two adult figures. First everybody's in the ambulance, and then she hands the facilitator the two adult figures ... She was transported by ambulance, to the NICU, and was transported only with other adults, who were unknown to her."
Observer 1	"She's handling the two grown-ups."
Observer 2	"Her selecting the ambulance, and whether she was taking there with her mom and dad, and my reasoning for that was the fact that in the first stage, the three people-toys that she put in the ambulance afterwards came out to be mom and dad and child."
Observer 3	N/A
Observer 4	"Putting people into the van. And the repeat behavior being, putting people in and out of the car."
Observer 5	"She puts them all in one by one, really showing us 'here is mom, here is dad.' … As she's removing these people, the adult whatever, there was the dad that was the second one who came out, she keeps mumbling initially, 'Mom? Mom?' And then when she finds that there's somebody stuck, she goes, 'Mom!'"

Theme 9: One child or two children. As shown in Table 22, both facilitators and three observers speak about the figure of just one child or baby. Observer 3 thinks that there are two figures of children in this clip.

Table 22

Clip 2: Theme 9: 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."

Theme 10: Ambulance, car or bus. As Table 23 indicates, both facilitators and two observers talk about an ambulance. Two other observers use the term "car", and yet another observer uses several names: Car, ambulance or bus. This distinction might seem irrelevant but there are car toys to choose from in the BEBA room and, in this instance, the child chooses a toy ambulance (the same kind of vehicle used for her transport to the hospital).

Table 23

Clip 2: Theme 10: Ambulance, Car, or Bus

Facilitator A	"The ambulance toy from the shelf."
Facilitator B	"She chose immediately to reach for the ambulance and pulled the ambulance down."
Observer 1	"She is playing with the ambulance."
Observer 2	"And it is just a curiosity around her selecting the ambulance."
Observer 3	"What I observed is this desire for Sarah to have this car."
Observer 4	N/A
Observer 5	"This child sees a toy … [it's a] car."

Theme 11: Separation from Mom. Looking for mom or worrying about her. As Table 24 indicates, both facilitators and two observers refer to the separation of Sarah and her mother, and how Sarah seems to be looking for her. Two other observers explain that Sarah seems to be worried and concerned about her mom as if something may have happened to her.

Table 24

Clip 2: Theme 11: Separation From Mom: Looking for Mom or Worrying About Her

Facilitator A	"I think this is part of her postnatal story. She had a lot of hospital experience and she was also transported from St. Frances to Cottage hospital right after she was born. Her mother did not come with her; she was separated from her. Her mother came later. She had done a lot of work on that, on that story, and she's very coherent in the way she showed it and she was not distressed when she was showing it at all. But clearly, she had the theme. I think she was showing that. Not every kid that goes in that room would pick up the ambulance."
Facilitator B	"Looks around, and that was an experience for her, that her mom did not go with her in the ambulance, she was transported by ambulance, to the NICU, and was transported only with other adults, who were unknown to her. And the part 2 is that the mom was calling out for her baby.… She [mom] was working to find out where she [Sarah] was going, where to call the NICU, and also where to get herself admitted to the other hospital."
Observer 1	"She's looking for mom."
Observer 2	"And there was this bit at the end where she was looking for mom."
Observer 3	"She wants to tell us, 'There must be something happening before I came in. I am worried about it. And what happened, then, how is Mommy? Who takes care of Mommy?'"
Observer 4	N/A
Observer 5	"I am going to assume that they were separated after birth. The rest of it I think I would be making up.… Baby is telling her story, and I guess it is like mom got left behind, and she seems still quite disoriented: 'Where is mom?' … And then when she finds that there's somebody stuck, she goes, 'Mom!'"

Questionnaire

The correct answer to the questionnaire given at the end of the interview for this clip was "ambulance transport" (see Table 25). 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--and Observer 5 selected "something else" (without providing any further explanation). Using binomial probabilities with an alpha level of .05 with the likelihood that the observers would select the right answer by chance to be one in seven, it is statistically significant that three of the five observers identified the right answer, $p < .05$, one-tailed. In other words, it is improbable that the observers selected the correct answer by chance.

Table 25

Clip 2: Answer to the Questionnaire

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

Conclusion

In this video clip, the facilitators of the sessions and I, based on what we know about Sarah's history and our observation of the clip, think that Sarah is showing how she was transported by ambulance immediately after birth, and that her mother didn't come with her. Three observers gave the "right answer" to the questionnaire about this clip,

marking “ambulance transport”. Another observer thought that Sarah was showing how she survived an abortion attempt, and yet another observer didn’t think that what Sarah was showing in the clip was present in the questionnaire, so she answered “something else”. Six themes from this clip show convergence in the answers that observers and facilitators provide. There is one unique theme, and four themes that show divergence in the use of terms and in the perception of details occurring during the clip.

Third Video Clip: Lucas

This video clip was filmed more than ten years ago and there are very few notes on the history of the child in the family file. Based on the interview of the facilitators and my own observations, the facilitators and I think that there is a very strong possibility that in this video clip Lucas is showing how painful it was for him to lose his twin at an early stage of gestation.

Lucas’s Early Story: Vanishing Twin

The term vanishing twin refers to “pregnancies in which two live fetuses are demonstrable in the first trimester of pregnancy but only one ultimately is delivered” (Sampson & Crespigny. 1992, p. 107). The loss of one or more fetuses from multiple conceptions is a common experience during the first trimester of gestation – estimates vary from 1 percent to 12 percent of all pregnancies (Landy & Nies, 1995; Sampson & Crespigny. 1992). The relative frequency of this phenomenon matches BEBA Clinicians’ observations that it is not uncommon for babies and children to engage in play that suggests they may have started their lives in the womb as twins or even multiples. Most vanishing twins go undetected, however, because sonograms are typically not performed during the first month or two of pregnancy and many women have no symptoms

(Anderson-Berry & Zach, 2005; Landy & Nies, 1995). Though women are frequently asymptomatic when loosing a twin early in their pregnancy, clinical indicators suggesting such a loss include vaginal bleeding, cramping, pelvic pain, or spotting (Anderson-Berry & Zach, 2005; Landy & Nies, 1995).

In Lucas's history, one of the facilitators (Ray Castellino) recalls Lucas's mother having a bleed during the first trimester. The second facilitator (Wendy Anne McCarty) does not recall any specific aspect in Lucas's history correlated directly to twin loss, but has a strong suspicion about a twin loss, based on what Lucas shows during the sessions at the BEBA Clinic and, specifically, during this video clip.

My Description of the Third Video Clip Used in this Study

Lucas is a four and a half month old boy. He is sitting on his mother's lap and begins to cry and fuss, arching his back and throwing his head backwards. Wendy Anne McCarty, one of the facilitators of the session, puts her hands on Lucas's head and then lifts him upside down and flips him up on to her shoulder, so that Lucas is resting on his stomach on Wendy's right shoulder. She hands Lucas, head first, back to his mother. Lucas continues to cry inconsolably looking at a baby doll on the floor. Wendy lifts the doll and brings it closer to Lucas. Lucas stops crying and touches the doll's face. He then resumes crying in his mother's arms. Mom puts him down on the floor next to the doll. Lucas stops crying and starts to explore the doll's hand and face, and then resumes crying. Ray Castellino, the other facilitator in the room, holds Lucas under the arms and empathizes with the child's feelings saying things like: "You are having strong feelings right now. I am sorry". Lucas moves the doll towards him and continues crying inconsolably. Ray hands Lucas back to his mother.

This sequence is comprised of one video clip lasting about two and a half minutes. The sound has been purposefully kept in this video clip because the content of the conversation does not give any cues of the child's history and helps provide a context for better understanding of what is happening in the moment. It is very hard to hear the conversation during this clip due to the strong crying on the child. Here are some pieces of audible conversation during the clip:

Ray: I am wondering if there was any time… (Lucas starts crying strongly, and arching back). There is the arch. That's fine. Yeah … I was going to ask that question when you did that…You are looking at mom now. (Ray talks to the mother) Wendy is following his body to you. Just as he did in the tunnel. That is right, that is right… good job. I know, yeah … I know those feelings myself.

Mom: You are having strong feelings right now.

Ray: I am so sorry.

Wendy: (Lucas is moving the doll towards him) Oh, you want to take the baby with you.

Ray: It is so strong.

Facilitators' Descriptions and Interpretations of Lucas's Behavior in the Video Clip

Ray Castellino (Facilitator A) and Wendy Anne McCarty (Facilitator B) were the two facilitators in this video clip. They have been interviewed separately. I will first report on their observations about this clip and then compare them with the observations provided by the five "naïve" observers.

Ray Castellino's Observations

Ray explains how Lucas starts arching backwards and doing a back flip in the air. Wendy supports him in doing this motion, and then Lucas goes to his mother. After this sequence, he starts reaching for the doll.

His definite interest in the doll and the intensity of his cry, anger and grief as he interacts and reaches for the doll two or three times, makes Ray think that Lucas is showing the loss of a twin. This is supported by his recollection of mom bleeding during the first trimester.

Ray thinks that, at the beginning of the clip when Lucas is arching backwards and doing a back flip in the air, he is showing a part of his conception journey. When asked for further elucidation, Ray talks about the way Lucas is arching backwards, and how there is protest in his movement. In his arching, Lucas goes high up into the air (the sky), and comes back down again, a movement that Ray has seen often in children that, he thinks, are showing their conception journey.

The main aspect of this clip is grieving the loss of someone very important to Lucas, and Ray thinks it is a twin because of his way of interacting with the doll. Also, Ray has seen Lucas working on this theme many times during his sessions at the BEBA Clinic.

Ray summarizes the sequence in this video: "I think it is pretty clear that he is doing a conception journey, protesting coming in, reaching back from the other side, and then reaching for the doll, reaching for his twin and grieving."

Wendy Anne McCarty's Observations

Wendy explains how Lucas starts this clip in his mother's arms. There he begins arching back as he cries intensely. She supports him to move the way he wants to, and Lucas goes over backwards and returns to his mother. There, he settles on her lap.

Wendy explains how Lucas turns to face a fabric baby doll that is on the floor away from the mother, reaches for the doll and pulls it close to him. He cries very deeply as he does this. Lucas touches the baby doll's face and eyes, and pauses with the doll. He cries frantically when he moves away from the doll. Ray picks him up and brings him to his mother. Wendy remembers saying something like "You want the baby to come with you." Soon after that, the clip ends.

Wendy thinks that there is a strong possibility Lucas is communicating an early separation from a twin that did not survive. She does not think Lucas is intentionally trying to communicate about it. In Wendy's words, "he is in that material", as if it has been reactivated during the session. When asked if there is anything in the child's history that is related to what he is showing in this video clip, Wendy answers that the notes from the session are poor, and the session happened long ago, so there is nothing in the notes that shows a direct correlation with twin loss. At the same time, she explains, often there are no physical evidences of the loss of a twin.

In Wendy's own words:

> [This is] what I could consider a very strong indication of a sequence of a twin loss. It is the high catharsis, it is very activating, he is frantic at some points, the arch over movement, the move away from mom to try and be with the baby, and then the franticness when he moves back to mom without the baby.

Interview Results

I now present the findings from my interviews with both facilitators and the five observers regarding the third video clip. Providing verbatim quotes excerpted from the interview transcripts, I present the nine convergent themes, two unique themes, and one divergent theme that I identified.

Convergent Themes

The nine convergent themes cited above, are presented in the order of their degree of convergence among interviewees, the first one being the most convergent and the last one being the least: (a) Arching back, (b) Strong emotions, (c) Looking and reaching for the doll, (d) Twin loss, (e) Several ways of expressing his emotions, (f) Wanting to return to the source, (g) Birth, (h) Settling when connecting with the doll, and (i) Back flip. Below I present the data supporting each theme.

Theme 1: Arching back. As shown in Table 26, all the observers and facilitators of this clip agree that Lucas is making quite a significant movement as he arches backwards.

Table 26

Clip 3: Theme 1: Arching Back

Facilitator A	"He arches over backwards."
Facilitator B	"The clip begins with Lucas in his mother's arms and he begins arching back from her while crying rather intensely. He's doing an arch over movement, which many times is a significant movement that we watch for."
Observer 1	"It is very strong this arch backward, like looking for something that he is missing."
Observer 2	"He arches his back.

Observer 3	"So, a quite significant behavior is the arching backwards. And dipping forward. And he, too, it is really interesting how he is looking for something."
Observer 4	"The other repeat behavior is that he seems really angry, and he is arching back repeatedly, and he is angry in that place."
Observer 5	"He couldn't move and he went into that kind of 'Moro response,' that arching protest."

Theme 2: Strong emotions: Anger, distress, sadness or grief. As shown in Table 27, all observers and both facilitators perceive Lucas expressing strong emotions in the form of anger, sadness, enragement, grief and distress.

Table 27

Clip 3: Theme 2: Strong Emotions: Anger, Distress, Sadness, or Grief

Facilitator A	"He was grieving, a long grieving, and showing anger, both anger and grief about the loss of a twin…. I mean he looked at the doll so intensely. I know what it feels like when I'm grieving the loss of someone, that boy looks and feels like he's grieving the loss of somebody really important to him."
Facilitator B	"He's in a very strong emotional state…. It's the high catharsis, it's very activating, he's frantic at some points, the arch over movement, the move away from mom to try and be with the baby, and then the franticness when he moves back to mom without the baby."
Observer 1	"It hurts. I want to have"—I don't know what to say—"my sibling, my sister, my brother, whoever."
Observer 2	"Then, there was the moving on to a distressed place and wanting to reach out and connect with the doll. And it seemed to be a distress followed by some anger, which settled when he came into contact with the doll. And after connection with the doll there seems to be another layer of overwhelm, where he was trying to pull the baby towards him."

Observer 3	"I'm missing my twin. I am really sad."
Observer 4	"He seems really angry, and he is arching back repeatedly, and he is angry in that place … I think that he is really communicating that he is really mad."
Observer 5	"Anger. Actually, I wrote down 'enraged'. Protest. Longing. He wants to take the baby with him."

Theme 3: Looking and reaching for the doll. As Table 28 indicates, four observers and both facilitators describe how Lucas is looking and reaching for the doll. He is clearly interested in the doll that is on the floor. He reaches for the doll, goes back and forth, and seems to want to connect with the doll. Observer 4 notes that Lucas is not reaching for the doll, but that the doll is presented to him.

Table 28

Clip 3: Theme 3: Looking and Reaching for the Doll

Facilitator A	"And then goes to his mother and starts reaching for another doll … He goes to the doll and he reaches for the doll two or three times if I recall correctly."
Facilitator B	"And then he starts to escalate again as he turns to face a fabric baby doll on the floor away from mom. He starts to reach for it … He starts to crawl and touch the baby and he is crying very deeply as he pulls the baby doll close to him."
Observer 1	"[He] is reaching for the doll, and this back and forth with the doll."
Observer 2	"Wanting to reach out and connect with the doll. And it seemed to be a distress followed by some anger, which settled when he came into contact with the doll. And after connecting with the doll there seems to be another layer of overwhelm, where he was trying to pull the baby towards him."

Observer 3	"This looking for something, several times, and the reaching out, and looking into the face of the doll."
Observer 4	"The doll was presented to the baby."
Observer 5	"His reaching for this other baby [doll] that was on the floor."

Theme 4: Twin loss. As Table 29 indicates, four of the observers and both facilitators think that in this clip Lucas is communicating the loss of a twin during early

Table 29

Clip 3: Theme 4: Twin Loss

Facilitator A	"I think the boy had a lost twin … I think that he is communicating the loss he feels from his twin."
Facilitator B	"I could consider a very strong indication of a sequence of a twin loss … For me, there is a very strong possibility that he is communicating an early experience with a twin in which he was separated from the twin. We are presuming… if that is the case… that the twin did not live; and that there was this franticness of him being separated from the twin."
Observer 1	"My guess is, a lost twin … I want to have—I don't know what to say—my sibling, my sister, my brother, whoever, I want to have him around with me and she is gone."
Observer 2	"I think a definite lost twin scenario here. And wanting the twin to stay. And my guess is that the twin left."
Observer 3	"It is this looking for a twin. It is the lost twin dynamic too … I am missing my twin. I am really sad."
Observer 4	"One of the reasons it's difficult on this one is that the doll was presented to the baby, so it's ... this is me being a scientist and I'm going to be a pain in the butt here, and I apologize, I don't mean to be difficult ... from what I could see in the clip, it's not like the baby got a choice of things to choose from, like the doll was presented to the baby, so it feels like I'm being fed that I'm supposed to say, 'twin loss.'"

Observer 5	"And then the reaching for his twin … It just reminded me of him again looking for the twin, wanting to connect, and then he got pissed off that he wasn't getting the response. I could be out of my mind, but that is what it looked like to me."

stages of pregnancy. Observer 4 thinks that she is expected to think Lucas is showing the loss of his twin in this clip, but she recalls that the baby is presented to Lucas, in a way that he does not have any choice but to interact with the doll.

Theme 5: Several ways of expressing his emotions: Crying, screaming, enragement, protest. As shown in Table 30, three observers and both facilitators refer to various ways Lucas uses to express his emotions, like crying, screaming, rage, protest and activation.

Table 30

Clip 3: Theme 5: Several Ways of Expressing His Emotions: Crying, Screaming, Rage, Protest, and Activation

Facilitator A	"Lucas was crying really really hard … There is protest in his arching over … He also reaches out to the doll and is grieving so hard."
Facilitator B	"He begins arching back from her [mom] while crying rather intensely … He starts to crawl and touch the baby and he is crying very deeply as he pulls the baby doll close to him."
Observer 1	N/A
Observer 2	"There was a delay before Lucas started to activate … My sense is that there was an activation around—during labor I would guess—around turning about in a tight space."
Observer 3	N/A
Observer 4	"And he is crying and screaming."
Observer 5	"I wrote down 'enraged,' protest."

Theme 6: Wanting to return to the source. As indicated in Table 31, three observers think that Lucas is showing how much he would like to follow his twin back to the "source" and not be born.

Table 31

Clip 3: Theme 6: Wanting to Return to the Source

Facilitator A	N/A
Facilitator B	N/A
Observer 1	"I want to have—I don't know what to say—my sibling, my sister, my brother, whoever, I want to have him around with me and he is gone anyway and I don't know. I want to go too, and I am stuck here."
Observer 2	"I wonder if it was an overlay with preconception, with connecting back to the source. Or, in wanting the choice to come in or go out, and actually choosing to go back, wanting to connect back. Does that make sense?"
Observer 3	"I am missing my twin, I am really sad … I like to go back again."
Observer 4	N/A
Observer 5	N/A

Theme 7: Birth. As shown in Table 32, three observers think that Lucas is showing a part of his birth sequence in this clip, specifically, a moment when he was turning in a tight space and got stuck.

Theme 8: Settling when connecting with the doll. As Table 33 indicates, two of the observers and facilitator B perceive that Lucas settles and pauses when he is near the doll.

Theme 9: Back flip. As Table 34 indicates, both facilitators and one of the observers remark how, after the arching back, Lucas does a back flip supported by facilitator B, and ends up in his mother's arms.

Table 32

Clip 3: Theme 7: Birth

Facilitator A	N/A
Facilitator B	N/A
Observer 1	"There are two layers, or maybe more, but two that seems to be clear for me. One is a place in the birth, during the turn, where he is stuck."
Observer 2	"My sense is that there was an activation around—during labor I would guess—around turning about in a tight space. So it could have been to do with the turn part of the birth."
Observer 3	N/A
Observer 4	N/A
Observer 5	"I think that the theme would be that of a difficult birth, that seems quite traumatic, as well as the twin loss."

Table 33

Clip 3: Theme 8: Settling When Connecting With the Doll

Facilitator A	N/A
Facilitator B	"It seems that he is actually pausing with the baby and he is touching the baby's eyes and face."
Observer 1	N/A
Observer 2	"It seemed to be a distress followed by some anger, which settled when he came into contact with the doll."
Observer 3	N/A
Observer 4	"He seems to settle a bit when he first connects with the baby, he always seems to settle a little when that happens."
Observer 5	N/A

Table 34

Clip 3: Theme 9: Back Flip

Facilitator A	"He arches over backwards, does a back flip in the air to Wendy and then goes to his mother and starts reaching for another doll … Well, the flip over, he does that once in that sequence."
Facilitator B	"I support his movements as he goes over backwards and slowly bring him to where he and mom are making eye contact."
Observer 1	N/A
Observer 2	"The flipping back, where he arches his back and goes over, a sense of possible—and this could have come some time in the prenatal period—but I wonder if it was an overlay with preconception, with connecting back to the source."
Observer 3	N/A
Observer 4	N/A
Observer 5	N/A

Unique Themes

There are two unique themes that appear in only one interview:

Theme 10: Something around his mouth. Observer 4 thinks that Lucas is showing that he had something around his mouth, or that he was intubated. "So, if he is communicating something from the prenatal and perinatal period, he may be communicating that something happened to his mouth." Note—there are no records in the intake form that would indicate that Lucas was intubated after birth or any other time in his life.

Theme 11: Circumcision. Observer 4 contemplates the possibility that Lucas was circumcised and is showing that during the clip, although this seems unlikely to her:

"And something may have happened to his penis … I have hesitations about saying 'circumcision' or 'something happened to my penis'. I have hesitations around that because there is just one moment where he put his hands on the crotch of the baby." Note—There are no records in the file that would indicate if Lucas was circumcised.

Divergent Themes

Theme 12: Divergence of emotions. As indicated in Table 35, observers and both facilitators refer to a spectrum of diverse emotions—some more related to anger (distress, enragement, protest), others more related to sadness (grief and crying), and others related to both.

Table 35

Clip 3: Theme 12: Divergence of Emotions

Facilitator A	"He was grieving, a long grieving, and showing anger, both anger and grief about the loss of a twin."
Facilitator B	"He's in a very strong emotional state…. It's the high catharsis, it's very activating, he's frantic at some points."
Observer 1	"It hurts."
Observer 2	"And it seemed to be a distress followed by some anger."
Observer 3	"I am really sad."
Observer 4	"He seems really angry… I think that he is really communicating that he is really mad."
Observer 5	"Anger. Actually, I wrote down 'enraged.' Protest. Longing."

Questionnaire

The correct answer to the questionnaire given at the end of the interview for this clip was "twin loss" (see Table 36). Four observers answered "twin loss," and Observer 4 answered "Intubation." Using binomial probabilities with an alpha level of .05 with the likelihood that the observers would select the right answer by chance to be one in seven, it is statistically significant that four of the five observers identified the right answer, $p < .05$, one-tailed. In other words, it is improbable that the observers selected the correct answer by chance.

Table 36

Clip 3: Answer to the Questionnaire

Observer 1	"Twin loss."
Observer 2	"Twin loss."
Observer 3	"Twin loss."
Observer 4	"Intubation."
Observer 5	"Twin loss."

Conclusion

Four observers and the facilitators agree that Lucas seems to be communicating the loss of a twin during early pregnancy. Three of these observers also believe that there is another layer of communication, and this has to do with Lucas's birth—a place in his birth where he probably got stuck. There is only one observer that doesn't think Lucas is communicating the loss of a twin in this clip. She explores different possibilities and ends

up deciding that Lucas is probably showing how he was intubated at some point in his history.

Fourth Video Clip: Mary

Based on knowledge of the history of the child as the mother has presented it in the intake forms at the BEBA Clinic where this video clip was filmed, the interview of the facilitators and my own observations, the facilitators and I perceive that in this video clip Mary is showing that she was intubated after birth. During the video clip, Mary plays with two tubes and brings one of them deep inside her mouth, and chews and sucks on it for a prolonged period of time.

Mary's Birth Story

Right after birth, Mary was intubated and suctioned because she had meconium in her airways. Mary was having very severe respiratory distress when she came out, and the medical team suctioned her quite vigorously. Later on, she was transferred by ambulance to another hospital. Once at the new hospital, Mary went into the Neo-natal Intensive Care Unit (NICU) and oxygen was provided through the isolette.

My description of the Fourth Video Clip Used in this Study

Mary is a nine-month old girl. She is in the BEBA Clinic with her mother and two facilitators: Ray Castellino and Jean Weitensteitner. Mary picks up a small clear plastic tube (about 1/4 inch in diameter) from among several toys on the floor, and shows it to her mom and Ray. She picks up a second, slightly larger tube and plays with both of them for a while. In the next clip Mary goes to her mom carrying both tubes. She shows them to Ray and puts one of them inside her month. She continues to chew and suck on it for a prolonged period of time, while moving around between her mother and Ray.

This sequence is comprised of two video clips that I spliced together lasting about three-and-a-half minutes in total. The sound has been purposefully removed to avoid giving further information about the child's history to the observers.

Facilitators' Descriptions and Interpretations of Mary's Behavior in the Video Clip

Ray Castellino (Facilitator A) and Jean Weitensteitner (Facilitator B) were the two facilitators of the session featured in this clip. I interviewed them separately. After reporting on their interpretations of the clip, I compare their interpretations to those of the five observers.

Ray Castellino's Observations

Ray describes how Mary is playing with two tubes. First she puts the tubes together, she hits the tubes, and then puts them into her mouth. Once in her mouth, she sticks them to the back of her throat and gags on them. He thinks that there is more than one tube that goes into her mouth. He thinks that this reflects her birth where, minimally, they used a DeLee tube, and maybe also a pump suction with a tube.

Ray also explores the possibility that Mary had a laryngoscope –also called endotracheal (ET) tube [used when there is a great deal of meconium] down her throat, but soon discards this possibility. Ray thinks that Mary is showing the part of her history when they put tubes down her throat. He explains how, many kids chew on tubes, but Mary is doing more than that. She is putting those tubes way back into her throat.

Ray explores as well the possibility that Mary had feeding tubes extending down to her stomach. He concludes that that is very unlikely, because they normally feed

newborns with tubes in the nose and not in the mouth, and Mary never put the tubes in her nose.

Ray summarizes the sequence in this video, in his own words:

> Well, she's showing that part of her history where they put tubes into her throat, and that was part of her story. Especially, that she would put them so far back into her throat. A lot of kids will just mouth those things and they'll chew on them, but not her. She had to make sure that those tubes were way, way back in her throat. She's showing a story where somebody put some tubes in her mouth.

Jean Weitensteitner's Observations

At the beginning of the clip, Mary chooses to play with two long tubes. She brings those tubes to her mom and then put one of them way back in her mouth. She puts one tube down her throat, and almost gags on it. She does this about three times. She only puts the large-diameter tube in her mouth, but she combines both tubes together to make them longer. She puts the yellow tube next to the green tube and the green tube goes in her mouth. This reminds Jean of a DeLee tube, that looks like two tubes together, one goes into the baby's throat and the other, with a different diameter, goes into the suction part of the machine. After a while, she sucks on the tube as she holds both tubes with her hands, and moves the tube inside her mouth to a place where it feels comfortable to her. Mary settles with the tube inside her mouth and starts to shake her arms, bouncing them up and down. As she does this, Mary seems to be showing her excitement. Her movements seem to originate in her mid-belly area.

Jean remembers the mother explaining how the medical team who attended Mary's delivery was greatly concerned about Mary's having ingested meconium during

birth, and how they suctioned her quite vigorously. Later on, she was probably further intubated – in order to administer oxygen through a tube, because she had severe respiratory distress and she wasn't breathing on her own. Jean describes how Mary bends her body all the way forward as she is sitting on mom's lap. Jean has observed this forward movement from the belly in babies right after their umbilical cord has been cut. The cut of the umbilical cord induces a physical and energetic shift in the baby's body. It seems to Jean, that Mary's umbilical cord was cut rather quickly and she shows that later as excitement and strength. Here in the video clip, Mary is exploring the disconnection from mom (when they cut the umbilical cord) and the suctioning. Jean thinks that these two things happened simultaneously.

Jean explains how Mary seems to feel comfortable sitting on mom's lap. One of the reasons for this is because the environment is very comfortable (the two facilitators are holding space for mom and Mary, and mom is very responsive to her cues). A second reason is because nobody is getting alarmed when she puts the tube all the way back in her throat. The mother is very relaxed as she holds Mary in her arms. This is a very different pattern from what actually happened at birth, when Mary was separated from her. Jean explains that the fact nobody gets alarmed during the session recorded in this video clip, gives Mary the space to explore the sensation of having the tube in her mouth without feeling alarmed or distressed.

Jean summarizes the sequence in this video:

> She chooses some tubes, that are long tubes, and she goes through a sequence of bringing them up to her mom and sitting with her mom and then putting them in her mouth, way back in her mouth, almost gagging herself, bringing it forward

again, and feeling that sensation again way back in her throat as she moves it back, and then moves it forward again.

Interview Results

I now present the findings from my interviews with both facilitators and the five observers regarding the fourth video clip. Providing verbatim quotes excerpted from the interview transcripts, I present the six convergent themes, nine unique themes, and two divergent themes that I identified.

Convergent Themes

The six convergent themes cited above, are presented in the order of their degree of convergence among interviewees, the first one being the most convergent and the last one being the least: (a) Two tubes (sticks, straws or cords), (b) Putting a tube(s) inside her mouth, (c) Intubation and suction, (d) Umbilical cord, (e) Twin loss, and (f) Uncertainty, several possibilities.

Theme 1: Two tubes (sticks, straws or cords). As shown in Table 37, all observers and the facilitators refer to the fact that Mary is playing with two long objects that she picks up from a pile of toys in the room. They choose different names to describe these objects, e.g. tubes, sticks, straws or cords.

Theme 2: Putting a tube(s) inside her mouth. As Table 38 indicates, both facilitators and two observers report seeing Mary putting one tube inside her mouth. Facilitator A remembers seeing her put both tubes in her mouth.

Theme 3: Intubation and suction. As Table 39 indicates, both facilitators and two observers think that Mary could be showing the part of her perinatal history where she

Table 37

Clip 4: Theme 1: Two Tubes (Sticks, Straws, or Cords)

Facilitator A	"She is playing with two tubes and first she puts the tubes together."
Facilitator B	"She chooses some tubes, that are long tubes, and she goes through a sequence of bringing them up to her mom and sitting with her mom and then putting them in her mouth."
Observer 1	"She is playing with the tubes, so she is getting one tube and reaching for the second."
Observer 2	"The main thing that I was curious about was the two… I don't know what she is holding, but it is a question about cords, umbilical cords … She held one of the tubes in her mouth and was sucking, but I wasn't quite sure about that, because there didn't seem to be any kind of reflection on any distress or overwhelm about it."
Observer 3	"I think she is reaching out for the two plastic sticks, and looking for another one, and striking against each other, and crossing the sticks. She does this several times."
Observer 4	"What I saw was her playing with the tubes."
Observer 5	"First found one straw, and then found the other straw, and seemed quite excited, happy; she was bouncing up and down. And she was clicking them together and then separating them like she was a band player."

Table 38

Clip 4: Theme 2: Putting Tube(s) Inside Her Mouth

Facilitator A	"Then she puts the tubes into her mouth, and she does not just put them into her mouth, but she puts them right into the back of her throat. If you look closely, there is a point in there where she actually gags on them … It looks like there was more than one tube that went into the child's mouth … A lot of kids will just mouth those things and they will chew on them, but not her. She had to make sure that those tubes were way way back in her throat. She is showing a story where somebody put some tubes in her mouth."
Facilitator B	"Then putting them in her mouth … She combines them both in one hand, the yellow tube is put next to the green tube and the green tube goes in her mouth… Then starts sucking on it, holding it with both hands and moving it to a place that is comfortable for her, or appears comfortable for her. And throughout this too, she also goes through a period with it where she'll settle with it in her mouth, and then she'll go through a feeling of showing us her excitement, where she shakes her arms or she bounces up and down."
Observer 1	N/A
Observer 2	N/A
Observer 3	"And the other thing is she puts the stick in her mouth."
Observer 4	"Repeatedly putting the end of the tube in her mouth. And there is something activating to her about these tubes."
Observer 5	N/A

Table 39

Clip 4: Theme 3: Intubation and Suction

Facilitator A	"[She] had some sort of suction or intubation after birth. That kind of behavior is what we see with a child that probably had a very traumatic birth, with some meconium … minimally they used a De Lee, but this is a hospital, so they probably had a pump suction with a tube."
Facilitator B	"When I see that picture, both of them in one hand, it does remind me of the De Lee suctions where they will be kind of, it looks like two tubes together, because there is one that goes into the baby's throat, and there is one that is a different diameter that actually goes into the suction part of the machine … Mostly at that point she is showing the suctioning."
Observer 1	"I had also thought about suction."
Observer 2	N/A
Observer 3	N/A
Observer 4	"I think that, in terms of the prenatal and perinatal period, it could be indicative of her having been intubated or De Lee'd, or something, suction or something put into her mouth."
Observer 5	N/A

was intubated in order to suction meconium from her airway because she was having difficulties breathing.

Theme 4: Umbilical cord. As shown in Table 40, Facilitator B and two of the observers have the impression that Mary is showing the experience she had when they cut her umbilical cord. This is often called "umbilical affect", referring to the "affects" or emotions that may get triggered when the umbilical cord is being cut.

Table 40

Clip 4: Theme 4: Umbilical Cord

Facilitator A	N/A
Facilitator B	"That forward place and that movement from her belly is often a place that I have observed, and felt with babies who are showing the shift after birth, after the cord's been cut, when there is an energetic and physical shift that happens in the body. It can happen rather quickly, it has more of a strength, which she tends to show in that excitement place, from my perspective."
Observer 1	"I see the back-forth movement, I wasn't even sure if it was back-forth or if it was up-down, so it has both for me at the same time. And this would reflect—if it is back-forth, and I would like to see more of the girl—it would reflect some umbilical affect, and then the tube would be the umbilical. But it didn't really feel that strong for me."
Observer 2	N/A
Observer 3	"There is some umbilical affect too."
Observer 4	N/A
Observer 5	N/A

Theme 5: Twin Loss. As Table 41 indicates, three of the observers thought that Mary could be showing a part of her prenatal history related to the loss of a twin. These observers refer to the fact that Mary is playing with two straws or cords. One observer comments on how she doesn't want to separate from one of the straws, the other says that she is holding the cords separately, and the other comments that she seems to be missing her twin. The loss of a twin in the first trimester of pregnancy is quite common, and it is hard to document that this is the case, because the embryo is still very small at this stage. After hearing how three observers correlated this clip with twin loss, I asked Facilitator B

Table 41

Clip 4: Theme 5: Twin Loss

Facilitator A	N/A
Facilitator B	When asked, "Do you think this client, this child, had any significant history of twin loss, as you could see through the sessions?", she answered, "There is not anything really overtly that I am aware of."
Observer 1	N/A
Observer 2	"And that my curiosity in the process was, I wondered there was a twin aspect in it. As there were two cords that she had separately… There was probably another, as there seemed to be two cords… I would say that there was something to do with another in the womb stage."
Observer 3	"Several issues are there. I just saw this little bit, but one thing is the lost twin dynamics … So, I think she's communicating: 'My conception was very joyful, but I'm missing a twin. And we were quite a long ago two, but where's the other one?'"
Observer 4	N/A
Observer 5	"At one point Ray tried to take one [straw] away from her, and she pulled back, like, 'they're mine!' And she kept looking from one to the other, one to the other. And then at one point the mom tried to pull one out of her mouth, and she turned away from her mom ... I think she crawled away from her mom, ultimately. I think that's where it ended … So, you know, the whole thing with two, and twinning, and leaving the baby behind, because there's only one baby, but there was two babies, and there are two straws. I don't know, maybe I'm pushing it too far. But that was my sense … I think it's twin loss."

if she thought Mary experienced the loss of a twin, or if she has anything in her history that might indicate the loss of a twin. She answered that, in her opinion, Mary never showed during the sessions anything overtly about it nor was she aware of anything in her history that might indicate this to be the case.

Theme 6: Uncertainty, Several Possibilities. As Table 42 indicates, most observers found this clip to be the most difficult to determine what the child might be communicating by her behavior. Several of them refer to the fact that Mary could be communicating different things (intubation, twin loss, umbilical affect, implantation, conception, teething, hunger). Observer 1 mentions the possibility of multiple layers of behavior present in this clip. She finds it very difficult to recognize what the child is communicating. Assuming that an intubated child would show some signs of distress, Observer 3 feels confused by Mary's calm demeanor as she puts the tube in her mouth. Because of this, he discards intubation, and chooses twin loss in the questionnaire. Observer 3 mentions several possible experiences that the child seems to be communicating, but finally chooses twin loss. Observer 4 differentiates between past time and present time. She thinks that Mary is showing a part of her past history that has to do with intubation, but that she might be expressing as well, some present teething or hunger. Observer 5 also opts for twin loss although is aware that she is stretching her perception when she gives this answer.

Unique Themes

There are nine unique themes that appear only once in the interviews.

Theme 7: Oxygen. Observer 1 mentions the possibility that Mary received some oxygen at some point in her perinatal history. "So, I had also thought about suction, or about having, getting oxygen." Note that there are no records to indicate the administration of oxygen to Mary after her birth.

Table 42

Clip 4: Theme 6: Uncertainty, Several Possibilities

Facilitator A	N/A
Facilitator B	N/A
Observer 1	"You know, [this] video was really difficult for me to get a felt sense in my body, to really sense … The tube would be the umbilical. But it didn't really feel that strong for me. So, I had also thought about suction, or about having, getting oxygen…. So I'm really not sure. And it feels like, it felt like layers and I can't see all the different layers."
Observer 2	There wasn't distress, but I mean, there could have been a multiple conception, there could have been twin loss. And she had the tube in her mouth a lot. There was no distress though. OK, I'm going to go for twin loss I think."
Observer 3	"Several issues are there. I just saw this little bit, but one thing is the lost twin dynamics. Another thing is conception dynamics. Putting the thing in her mouth is that issue. Another thing for me is implantation. I'm not sure, but I would like to cover it ... there is some umbilical affect too."
Observer 4	"She could be communicating that, 'This is what happened to me.' She could be communicating in the moment that ... she could be teething, it could be something that feels good around her mouth. She could be communicating that chewing on this feels good right now. She possibly could be communicating that she wants something in her mouth right now, she's hungry or she feels like chewing on something."
Observer 5	"I don't know, maybe I'm pushing it too far. But that was my sense."

Theme 8: Layers. Observer 1 concludes that Mary is showing different layers of behavior in her play, and that it is difficult to differentiate between them. "It feels like, it felt like layers and I can't see all the different layers."

Theme 9: Movement. Observer 2 thinks that Mary is showing some specific movement when she puts her head forward, as if she wants to go down and "get in". "The other piece that I wasn't sure is there's quite definitely movement when she's being held by mom, and putting her head forward, wanting to go down, it was quite a significant movement. And I just wasn't sure... I mean, as I sit with it now, I just had a curiosity about sudden engagement."

Theme 10: Conception dynamics. Observer 3 thinks that Mary is exploring her conception dynamics when she puts the tube in her mouth. "Several issues are there. I just saw this little bit, but one thing is the lost twin dynamics. Another thing is conception dynamics." Observer 3 thinks that Mary is communicating the following: "My conception was very joyful, but I'm missing a twin."

Theme 11: Implantation. Observer 3 also thinks that Mary might be reflecting something that happened during her implantation in the prenatal life. "Another thing for me is implantation. I'm not sure, but I would like to cover it."

Theme 12: Flailing of the arms. Observer 4 sees Mary moving her arms up and down periodically during this clip. "Well the theme that's repeated is that the end of the tube constantly goes into her mouth, and then her arms will flail, they'll move up and down periodically. Yeah, that's the repeat action I see."

Theme 13: Activation and speeding up. It seems to Observer 4 that something is activating Mary and causes her to speed up as she flails her arms. "I think that what she may be communicating is that that is activating to her, that that causes her to speed up, or there's something agitating to her because her arms are flailing when she does that."

Theme 14: Teething or being hungry. Observer 4 thinks that Mary could be communicating that she is teething or that she is hungry. "She could be communicating in the moment that... she could be teething, it could be something that feels good around her mouth. She could be communicating that chewing on this feels good right now. She possibly could be communicating that she wants something in her mouth right now, she's hungry or she feels like chewing on something."

Theme 15: Pushing the doll away. Observer 5 talks about Mary pushing a doll away as if she doesn't want to play with it, although she still feels attached to it. "It seems to be a sequence of her pushing the doll away, she pushed the doll aside not wanting to play with the doll, and ignored the doll, but attached to these."

Divergent Themes

Theme 16: Different names for the tubes (sticks, straws, cords). As shown in Table 43, all observers and both facilitators refer to the presence of two long objects but called by different names: tubes, sticks, straws or cords.

Theme 17: Number of tubes Mary is bringing to her mouth. As Table 44 indicates, there is a disagreement between interviewees about the number of tubes Mary is bringing to her mouth. Facilitator A explains that Mary brings both tubes into her mouth, and Facilitator B and two observers explain that Mary plays with both tubes but only brings one into her mouth.

Questionnaire

The "correct" answer to the questionnaire given at the end of the interview for this clip was "Intubation" (see Table 45). Only two observers answered that, and three observers answered "Twin loss." Using binomial probabilities with an alpha level of .05

Table 43

Clip 4: Theme 16: Different Names for the Tubes (Sticks, Straws, or Cords)

Facilitator A	"She is playing with two tubes."
Facilitator B	"She chooses some tubes, that are long tubes."
Observer 1	"She is playing with the tubes."
Observer 2	"The main thing that I was curious about was the two … I don't know what she is holding, but it is a question about cords, umbilical cords … She held one of the tubes in her mouth."
Observer 3	"I think she is reaching out for the two plastic sticks."
Observer 4	"What I saw was her playing with the tubes."
Observer 5	"First found one straw, and then found the other straw."

Table 44

Clip 4: Theme 17: Number of Tubes Mary Is Bringing to Her Mouth

Facilitator A	"Then she puts the tubes into her mouth."
Facilitator B	"She combines them both in one hand, the yellow tube is put next to the green tube and the green tube goes in her mouth."
Observer 1	N/A
Observer 2	N/A
Observer 3	"And the other thing is she puts the stick in her mouth."
Observer 4	"Repeatedly putting the end of the tube in her mouth."
Observer 5	N/A

Table 45

Clip 4: Answer to the Questionnaire

Observer 1	"Intubation."
Observer 2	"Twin loss."
Observer 3	"Twin loss."
Observer 4	"Intubation."
Observer 5	"Twin loss."

with the likelihood that the observers would select the right answer by chance to be one in seven, it is statistically not significant that two of the five observers identified the right answer, $p < .05$, one-tailed. This is the only clip where the p-value was not significant.

Conclusion

This clip generated a variety of different opinions about what Mary seems to be communicating. Only two observers give the correct answer to the questionnaire, "intubation", which is less than any other video clip. There are nine unique themes, which is more than in any other video clip. All observers and the facilitators refer to just one common theme, (the presence of two long objects) but even these objects are called by different names. There is disagreement as well about the number of tubes Mary is bringing to her mouth.

Three observers think that Mary is showing the loss of a twin in this clip, and two observers think that she is showing how she was intubated after birth. Several of the observers express how hard it is to get a clear sense of what Mary is showing in this clip, and some of them consider several different options.

Fifth Video Clip: Eva

Based on knowledge of the history of the child as the mother has presented it in the intake forms at the BEBA Clinic where this video clip was filmed, the interview of the facilitators and my own observations, the facilitators and I think that there is a very strong possibility that in this video clip Eva is showing how she was born by vacuum extraction.

Evas's Early Story

Eva was born by vacuum extraction, and the suction cup was applied three times on her head because the cup kept falling off. One of the times, the cup was misapplied and caught Eva's head as well as part of her mom's vaginal wall. The physician pulled the cup and tore mom quite badly. Mom was bleeding heavily. Eva's head had a lot of cranial molding due to the application and pulling of the suction cup. There are very good records of this birth in the BEBA files, with pictures that show exactly how and where the suction cup was applied for delivery.

My Description of the Fifth Video Clip Used in this Study

Eva is an eight-month old girl. She is crawling across the floor towards Wendy Anne McCarty, one of the facilitators of the session, who is lying on her stomach under a partially folded futon that resembles a tent. Eva grasps Wendy's hair and tugs it energetically. Eva then grabs a box of tissues nearby on the floor. Eva again turns towards Wendy, pulls strongly on her hair and returns to playing with the box of tissues. Dropping the box, Eva then pulls Wendy's hair for a third time. Wendy puts her hand on Eva's head and leaves it there for a while, as Eva continues to play with the box of tissues. Mom removes the tissues from Eva's grasp and rests her hand on Eva's back. Eva

turns towards Wendy again and starts pulling her hair energetically. At this moment, both Wendy and Ray Castellino, the other facilitator of the session, place their hands on Wendy's head to prevent Eva from continuing to pull Wendy's hair. Eva persists, trying to remove their hands from Wendy's head. After repeated attempts, Eva rolls over onto her back and gazes at her mother. Her mother offers resistance with her hands to Eva's feet, and Eva propels herself slightly backwards towards Ray.

This sequence is comprised of one video clip lasting about four minutes. The sound has been purposefully removed to avoid giving further information about the child's history to the observer.

Facilitators' Descriptions and Interpretations of Eva's Behavior in the Video Clip

Ray Castellino (Facilitator A) and Wendy Anne McCarty (Facilitator B) were the two facilitators of the session featured in this video clip. After reporting on their descriptions and interpretations of the clip, I will compare them to those of the five "naïve" observers.

Ray Castellino's Observations

Ray explains how Facilitator B, Wendy, is underneath an A-frame futon and Eva reaches and grabs her hair and pulls it. Eva goes away and returns to pull Wendy's hair two more times. Ray puts his hand on Eva's sacrum to do some cranial work. Wendy has her hand on her own head and, later on, Ray puts his hand on Wendy's head too. Ray thinks that Eva has a very significant cranial molding with the characteristic shape of a vacuum cup. He notes a strong side bend as well as a rising at the posterior

parietal/occipital area (the lambdoid suture). He thinks this molding is evidence that she had a vacuum cup on her head.

Ray thinks that Eva is showing her birth sequence, as she pulls Wendy's hair three times, the same number of times that the doctor applied the suction cup to her head. Ray thinks Eva is communicating how it felt to be pulled, and that it hurt her.

Ray summarizes the sequence in this video:

> We know that she was born by vacuum extraction; we know that the cup was applied 3 times. We know that the mom . . . that the cup was misapplied and actually found part of her vaginal wall and caused the mom to bleed, from the cup. And we know that she had a lot of cranial molding.

Wendy Anne McCarty's Observations

Wendy explains that the clip starts by showing how she is on the floor, under a futon, using one of what she calls "diagnostic play therapy types of behavior" used to see how the child interacts with the facilitator. Wendy is behaving as if she were a baby about to be born. Eva comes over and pulls on her hair, then turns to play with a Kleenex box. She returns to Wendy and pulls her hair on a different part of her scalp, and then goes back to playing with the Kleenex box. Wendy correlates this behavior with her knowledge of what happened at Eva's birth.

Eva was born with the assistance of vacuum extraction. The suction cup fell off twice, so they applied the cup three times on Eva's head. In this sequence, Eva could be showing very precisely how the doctor pulled on her head with the cup, and then turned to work on the machine (Kleenex box), before applying the suction cup again. This sequence shows three attempts to do a vacuum extraction. Wendy thinks that Eva is

expressing a body memory, doing to her (Wendy) what they did to Eva during her birth. She doesn't think Eva is trying to communicate intentionally what happened to her, she is just being "in the material" of what happened at her birth, during this clip.

Wendy comments that she can correlate three things: The history of the child, Eva's behavior during this clip, as well as Eva's behavior at home. At home, Eva has been showing mom that she doesn't like to be "pulled out". In Wendy's words: "The way she would pull, the way she would try and get someone to go from one place to another at home, was to be pulling them," in a similar way to which she was pulled out at birth.

Wendy's emphasizes how "her behavior wasn't just a generalized pull, it was a very seemingly specific sequence of events particular to her vacuum extraction at birth."

Interview Results

I now present the findings from my interviews with both facilitators and the five observers regarding the fifth video clip. Providing verbatim quotes excerpted from the interview transcripts, I present the 11 convergent themes, eight unique themes, and two divergent themes that I identified.

Convergent Themes

The 11 convergent themes cited above, are presented in the order of their degree of convergence among interviewees, the first one being the most convergent and the last one being the least: (a) Pulling the hair, (b) Back and forth, (c) Birth, (d) Playing with a box, (e) One person is in the tunnel or under the futon, (f) Pull out, (g) Cranial molding, (h) Pain, (i) Umbilical cord, (j) Confusion, and (k) Vacuum extraction.

Theme 1: Pulling the hair. As Table 46 indicates, all the observers and both facilitators agree that Eva is pulling at somebody's hair that most people identify as

Table 46

Clip 5: Theme 1: Pulling the Hair

Facilitator A	"The theme of her going back into the tunnel and pulling on Wendy's hair … I mean she repeats that three times."
Facilitator B	"Her history was that she was born with the assistance of vacuum extraction. hat pulling motion corresponds with the pulling motion of my hair I believe…. So, she was actually seemingly being very specific in her behavior as a memory from her birth where the doctor applied it, which is when she was pulling my hair."
Observer 1	"Oh, she's pulling at the hair very strong of the mom, or of this woman who is in the ... who is there ... The mom has to protect her head, she's pulling really very strongly."
Observer 2	"The main thing that came up to me was the pulling of the hair ... The definite bits in this particular video was the pulling of the hair, and it's just to me, a question of what that could communicate ... I've come across this before, the pulling of the hair, and I can't remember what to transfer it to ... There's one piece that's like, by pulling the hair she's created pain and resistance for the facilitator, and it seems that maybe there's something in that that she was trying to get across."
Observer 3	"She is really clear about pulling this person out of the tunnel by the hair."
Observer 4	"The behavior being that she's pulling at Wendy's hair repeatedly."
Observer 5	"Initially, she was going back and forth between the box, and pulling the hair of another."

Wendy one of the facilitators of the session. Observer 1 does not know that Wendy is a BEBA facilitator and mistakes her for the mother.

Theme 2: Back and forth. As Table 47 indicates, four observers and both facilitators agree that Eva is moving back and forth between two things (mostly described as Wendy's hair and the tissue box).

Table 47

Clip 5: Theme 2: Back and Forth

Facilitator A	"Eva reaches in and grabs Wendy's hair and pulls and then she goes away from that, and then goes back to it again and pulls her hair, goes away from it, and then that third time she goes back and pulls her hair again."
Facilitator B	"Eva comes over and pulls on my hair, then, we notice her turning to play with a Kleenex box. She returns and pulls on a different part of my scalp, and then she pauses and goes back to the Kleenex box. Then she comes back and pulls on a new spot on my head and then returns to the Kleenex box again."
Observer 1	"And there is some back-forth movement ... I can't remember now. But I've written it down in my notes, so I ... oh yeah, I remember there being some back-forth movement."
Observer 2	"Well, the pulling of the hair for one. That was the main bit that was very repetitive. She'd come back, go to it, come back, go to it."
Observer 3	N/A
Observer 4	"She is kind of going back and forth."
Observer 5	"Initially, she was going back and forth between the box, and pulling the hair of another."

Theme 3: Birth. As shown in Table 48, three observers and both facilitators think that Eva is showing her birth process in this clip.

Theme 4: Playing with a box. As Table 49 indicates, three observers and facilitator B explain that Eva is playing with or handling a tissue box sometime during this clip.

Theme 5: One person is in the tunnel or under the futon. As shown in Table 50, two observers and both facilitators describe how one person (Wendy) is under a futon or a tent that looks like a tunnel.

Table 48

Clip 5: Theme 3: Birth

Facilitator A	"What she was doing was showing Wendy what it felt like to be pulled. It looks like a birth sequence."
Facilitator B	"She's even showing us a behavior that's very specific to what happened at her birth because at her birth they actually had a problem with the vacuum extraction."
Observer 1	N/A
Observer 2	N/A
Observer 3	"The thing is that something is being stuck in the uterus, in the birth canal."
Observer 4	"That something pulled on her own head, in the birthing process."
Observer 5	"I had a question about it, and it reflects I'm assuming the engagement of the birthing process."

Table 49

Clip 5: Theme 4: Playing With a Box

Facilitator A	N/A
Facilitator B	"Eva comes over and pulls on my hair, then we notice her turning to play with a Kleenex box."
Observer 1	N/A
Observer 2	N/A
Observer 3	"How she is playing with the box, and there must be some confusion about the box, about the uterus."
Observer 4	"She pulled on her hair, and then repeatedly went to the tissue box several times."
Observer 5	"She was going back and forth between the box, and pulling the hair of another."

Table 50

Clip 5: Theme 5: One Person Is in the Tunnel or Under the Futon

Facilitator A	"Wendy was in the tunnel."
Facilitator B	"I am on the floor, on a futon."
Observer 1	N/A
Observer 2	"Because I could see Wendy in the tent, in the place that may well be the tunnel, but it was this dark space."
Observer 3	"She is really clear about pulling this person out of the tunnel by the hair."
Observer 4	N/A
Observer 5	N/A

Theme 6: Pulled out. As Table 51 indicates, two observers and both facilitators think that Eva is showing how she was strongly pulled out at some point in her history.

Table 51

Clip 5: Theme 6: Pulled Out

Facilitator A	"What she was doing was showing Wendy what it felt like to be pulled."
Facilitator B	"Her history was that she was born with the assistance of vacuum extraction. That pulling motion corresponds with the pulling motion of my hair I believe ... Like, her telling her mom she doesn't like to be pulled out."
Observer 1	"I think the strong pulling reflects something she experienced, or she felt a strong pull."
Observer 2	N/A
Observer 3	N/A
Observer 4	"She could be communicating that she was pulled out."
Observer 5	N/A

Theme 7: Cranial molding. As shown in Table 52, two observers and Facilitator A refer to the shape of Eva's head, and how they suspect that it has been heavily molded by the use of a vacuum cup. As the researcher, I realize how the fact that Eva's head is molded has given further clues to two observers in their consideration of what is happening in the clip, not just based on Eva's behavior but on the shape of her head. I will give more consideration to this topic in the discussion section.

Table 52

Clip 5: Theme 7: Cranial Molding

Facilitator A	"I'm tracking the girl while I'm working with Wendy's head, doing cranial work. And if you look at the girl, the girl's head, you can see she has the characteristic shape of a vacuum. There's a quite a strong side bend in her cranium that is visible in the clip and a large, not a large, but a raising at the posterior parietal/occipital area, at the lambdoid suture. There's evidence, when you look at the clip, when you look at her cranially, there's evidence that she had a vacuum cup on her head. That's just from observing."
Facilitator B	N/A
Observer 1	"Her head is very formed, like there was a pull."
Observer 2	N/A
Observer 3	N/A
Observer 4	N/A
Observer 5	"I put a question mark around the child's cranial molding, and that huge lump on the top of her head. It was something that I wanted to look at further."

Theme 8: Pain. As indicated in Table 53, two observers and facilitator A explain how Eva is showing in the clip that she got hurt or had pain at some point in her history.

Theme 9: Umbilical cord. As shown in Table 54, two observers talk about the umbilical cord. One explains how she gave some consideration to the idea of Eva's umbilical cord being strongly pulled, and the other considers the possibility of Eva pulling a twin's cord.

Theme 10: Confusion. As Table 55 shows, two observers mention how they felt Eva experiences some confusion during the clip.

Table 53

Clip 5: Theme 8: Pain

Facilitator A	"She was pulled on several times and it hurt ... Well, she's communicating, one, the feeling to Wendy of how it feels to be pulled. It hurts."
Facilitator B	N/A
Observer 1	"Look, that strong was the pull. I was pulled that strong. That's how it felt like, and that's how it hurt."
Observer 2	"By pulling the hair she's created pain and resistance for the facilitator … Something to do with getting the person to deal with the discomfort and pain."
Observer 3	N/A
Observer 4	N/A
Observer 5	N/A

Table 54

Clip 5: Theme 9: Umbilical Cord

Facilitator A	N/A
Facilitator B	N/A
Observer 1	"First I thought maybe it was the navel cord that was pulled, and that maybe collapsed the pelvis, but then I thought maybe it could be vacuum extraction because her head is very formed, like there was a pull."
Observer 2	"And it could be communicating, like trying to pull on another twin's cord."
Observer 3	N/A
Observer 4	N/A
Observer 5	N/A

Table 55

Clip 5: Theme 10: Confusion

Facilitator A	N/A
Facilitator B	N/A
Observer 1	N/A
Observer 2	N/A
Observer 3	"The thing is that something is being stuck in the uterus, in the birth canal, and something is, how she is playing with the box, and there must be some confusion about the box, about the uterus."
Observer 4	N/A
Observer 5	"There's some confusion, there's some ... she's very clear about what she wants, I guess that would be the theme. And the communication is more of ... I get confusion, frustration, but she doesn't seem really pissed, she just doesn't get it."

Theme 11: Vacuum extraction. As Table 56 indicates, Observer 1 and both facilitators mention the use of a vacuum extractor to pull Eva during her birth. Three more observers will choose "Suction birth (vacuum extraction)" as the correct answer of the questionnaire for this clip, but they do not mention it during their interview properly.

Unique Themes

There are eight unique themes.

Theme 12: Collapse of the pelvis. Observer 1 explains how Eva's pelvis seems to collapse at some point during the clip. "And there are several times that her pelvis looses its force, collapses … My first fantasy was maybe the naval cord around the throat, and

Table 56

Clip 5: Theme 11: Vacuum Extraction

Facilitator A	"Again, we know that she was born by vacuum extraction, we know that the cup was applied three times."
Facilitator B	"Her history was that she was born with the assistance of vacuum extraction."
Observer 1	"I think the vacuum extraction feels closer."
Observer 2	N/A
Observer 3	"It could be vacuum extraction." [This is part of the information provided during the questionnaire.]
Observer 4	"Probably Vacuum Extraction/Suction Birth." [This is part of the information provided during the questionnaire.]
Observer 5	"I'm going to go with 2: Vacuum Extraction." [This is part of the information provided during the questionnaire.]

therefore a strong pull around the naval could collapse the pelvis, but it doesn't feel that right."

Theme 13: Heel sticks. Observer 2 considers the possibility of somebody using foot sticks on Eva's feet because of the way she is moving her legs. "She seemed to be favoring keeping her left leg out and keeping her right leg up a lot. So there was a possibility around the pedal-sticks, although she didn't seem activated in any of this."

Theme 14: Abortion survival. Observer 2 thinks that Eva is showing how she is the survivor of an abortion attempt. "This is going to be a guess here, and it might be totally off board here, but I'm going to go for abortion survival, because there's something about hanging on. This one was the hardest for me, I have to say."

Theme 15: Lack of emotional connection. Observer 2 thinks that Eva does not seem to be emotionally connected. “It's just that ... how she ... there was no, didn't have any emotion connected to it. It's just like she was pulling... what-have-you. She wasn’t upset or anything. Which kind of meant that she was out of it, or it was something that wasn't too much.”

Theme 16: C-section. Observer 3’s first impression about what Eva seems to be communicating in this clip is a C-section birth. “The issue I think is a C-section. She is really clear about pulling this person out of the tunnel by the hair.”

Theme 17: Older sibling. Observer 4 considers the possibility that Eva’s older sibling is pulling her hair. “In terms of present tense, maybe there's somebody that's pulling on her hair, maybe she has an older sibling that's doing this now.”

Theme 18: Wondering about her twin. Observer 5 thinks that Eva might be communicating her concerns about her twin being left behind. “I think it's that association, pulling the other out. Why isn't the other twin with her, if it's a twin … I'm assuming it is... and by the strength with which she's pulling, cause that looked really awful to me.”

Theme 19: Incubator. Observer 5 considers the possibility of the tissue box representing the incubator where Eva was place after birth. “Initially, she was going back and forth between the box, and pulling the hair of another. And she went back and forth quite deliberately a number of times, and then somebody removed the box. I wasn't sure why they did that, because she clearly would pull the hair and bring it to the box, as though she was bringing the child out, and putting in the box; maybe it was an incubator, I don't really know. So that's how I saw that story.”

Divergent Themes

Theme 20: Number of times pulling Wendy's hair. As Table 57 indicates, two observers and Facilitator A explain how Eva is pulling Wendy's hair several times. Facilitator A counts specifically three times, one observer mentions six or seven times, and the other talks about several times.

Table 57

Clip 5: Theme 20: Number of Times Pulling Wendy's Hair

Facilitator A	"And she pulled on Wendy's head three times."
Facilitator B	N/A
Observer 1	N/A
Observer 2	N/A
Observer 3	N/A
Observer 4	"The behavior being that she's pulling at Wendy's hair repeatedly, I think six or seven times."
Observer 5	"She was going back and forth between the box, and pulling the hair of another. And she went back and forth quite deliberately a number of times."

Theme 21: Expression of emotions. As Table 58 indicates, Facilitator B and Observer 5 think that Eva is expressing some emotionality during this clip, while Observer 2 comments that Eva seems to not have any emotional connection to what is happening to her during the clip.

Table 58

Clip 5: Theme 21: Expression of Emotions

Facilitator A	N/A
Facilitator B	"So she's expressing a sequence of events and some emotionality along with that of doing to me what was done to her."
Observer 1	N/A
Observer 2	"It's just that ... how she ... there was no, didn't have any emotion connected to it. It's just like she was pulling ... what-have-you. She wasn't upset or anything. Which kind of meant that she was out of it, or it was something that wasn't too much."
Observer 3	N/A
Observer 4	N/A
Observer 5	"And the communication is more of ... I get confusion, frustration, but she doesn't seem really pissed, she just doesn't get it."

Questionnaire

The correct answer to the questionnaire given at the end of the interview for this clip was "suction birth (vacuum extraction)" (see Table 59). Four observers answered "suction birth (vacuum extraction)," and Observer 2 answered "Abortion survival." Using binomial probabilities with an alpha level of .05 with the likelihood that the observers would select the right answer by chance to be one in seven, it is statistically significant that four of the five observers identified the right answer, $p < .05$, one-tailed. In other words, it is improbable that the observers selected the correct answer by chance.

Table 59

Clip 5: Answer to the Questionnaire

Observer 1	"Suction birth (vacuum extraction)."
Observer 2	"Abortion survival."
Observer 3	"Suction birth (vacuum extraction)."
Observer 4	"Suction birth (vacuum extraction)."
Observer 5	"Suction birth (vacuum extraction)."

Conclusion

The records of Eva's birth clearly indicate that she was born with the assistance of vacuum extraction. Four observers and both facilitators agree that Eva seems to be communicating that she was born with the assistance of a vacuum extractor. There is only one observer that disagrees. He explores different possibilities and ends up deciding that Eva is probably showing that she was the survivor of an abortion attempt. There are eleven convergent themes, eight unique themes and two divergent themes in the analysis of this clip.

Questionnaire Results Analysis for All Video Clips

The questionnaire produced a total of 25 "trials"—that is, five clips multiplied by five observers. The observers chose the "right" answer 18 of the 25 times. Using binomial probabilities with an alpha level of .05, there were significantly more correct answers than 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). Last, there were significantly more correct diagnoses of Clips 1, 2, 3, and 5

than expected by chance, $p < .05$ (one-tailed). These findings, shown in Table 60, 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 60

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	*10*	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.

CHAPTER FIVE:

DISCUSSION

This chapter presents (a) a summary of the study, (b) a discussion on how the research data converge with the theoretical framework established in the literature, (c) important observations and conclusions drawn from the data presented in the results chapter, (d) a description of the study's limitations, (e) a discussion of the implications of the findings, and (f) recommendations for future research.

Summary of the Study

In this study, I have investigated prenatal and perinatal memories and imprints in preverbal children. As these memories are difficult to assess since very young children most readily communicate through their actions and behaviors rather than through verbally explicit conversation, the study was based on the observation of the behavior of preverbal children during therapy sessions via videotape examination. Five cases were presented for observation to five therapists (observers) trained in the field of prenatal and perinatal therapy. Two basic instruments were used in this mixed methods study to gather information from the observers: an interview and a questionnaire. The facilitators of the videotaped therapy sessions were also interviewed and their answers where compared to those of the observers. Data were collected by phone interviews and via questionnaires. The binomial distribution was used to analyze observers' answers to the multiple-choice questionnaire. The observers chose the expected answer 18 of the 25 times (72%). Using binomial probabilities with an alpha level of .05, there were significantly more correct answers than 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 on in this chapter.

Findings Related to the Literature

As mentioned in my literature review, the pioneering idea that adults are capable of remembering prenatal and perinatal events has been presented by different psychologists and psychotherapists in the last decades as they have found cases of adults that spontaneously or under hypnosis remembered their prenatal life and birth (Chamberlain, 1999e; Cheek, 1986; Grof, 1990; Janov, 1983). This in itself challenges the old belief about infantile amnesia and the supposed incapacity of prenates and newborns to be conscious and remember. Later studies have found that toddlers are also 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 study in the literature that explores the possibility of preverbal children having implicit or explicit prenatal or perinatal memories and being able to communicate them through their behavior and play. My study intended to explore this possibility, and examined 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).

The findings of this study favor the idea that preverbal children are capable of having implicit and perhaps even explicit memories from their prenatal and perinatal

lives, as shown through their behavior in a therapeutic setting. Seventy-two percent of the answers of the observers to the questionnaire show that trained observers are able to identify which kind of prenatal or birth experience the child was showing in the clip. From here, we could make the inferential leap that these children were having memories of their prenatal or perinatal life.

It appears to me, that in four out of the five cases presented in this study, the memories involved seem to be more implicit in nature than explicit. Implicit memories, as described by Siegel (1999), are behavioral, emotional, perceptual or somatosensory, For example, David, a six-month old child, shows, with his body, movements similar to those experienced when he got stuck during his birth, and Mary in another clip, puts tubes down her throat, producing a sensation similar to that 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 by the way they move their bodies, behave or display their emotions. As explained in the literature (Kosslyn & Koenig, 1992; Menzam, 2002; Siegel, 1999; Siegel & Hartzell, 2003), with 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 Two, Sarah seems to be accurately reproducing specific events in a symbolic manner using toys available in the room, that points in the direction of her having autobiographical explicit 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 mom did not come with her, and Sarah is asking for her during the clip as 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 the possibility that a 16 month-old is capable of explicit autobiographical memories, not only of current events in her life but from her past – including the prenatal and perinatal period – something not possible according to Siegel. 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 the possibility that *preverbal* children may be capable as well of having explicit memories of their prenatal and perinatal lives, something very difficult to assess because they are unable to use words to communicate them. This assertion challenges the present understanding of when explicit memory becomes possible—around eighteen months of age based on Siegel's work.

When I asked Ray Castellino 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. (Ray Castellino, personal communication, June 13, 2006)

In my opinion, Sarah's abilities to have autobiographical memories at that early age could be explained by the concept of a dual source of consciousness and memory (as described in the literature review), one dependent upon the development of the physical form and the other independent of it. While Sarah's brain may not be mature enough to produce autobiographical explicit memories, her transcendent self, working independently from the brain and central nervous system would, according to this theory of memory, be capable of producing them. As Jenny 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).

In order to explain memories of events that occurred in the first trimester before the brain is formed and developed, we also need to refer to a theoretical framework wide enough that would be able to explain those kinds of experiences. As shown in the literature review, the integrated model (McCarty, 2004, 2006) and Wade's holonomic theory of consciousness (1996) are the most comprehensive approaches to explain the different kinds of prenatal and perinatal experiences and memories, including memories of the gestational period. In Clip Three, for instance, Lucas appears to be revisiting his experience of losing a twin at an early stage of his gestation. Twin loss memories often are not corroborated by actual data, as in Lucas's case. This is the only clip for which I do not have definitive historical data that confirms what I believe the child is portraying. I am making an educated guess based on the facilitator interviews, the history of the child and what I have seen in the video clip that points in the direction of Lucas grieving the loss of his twin. Sarah's and Lucas's stories are of course anecdotal cases; further research is needed to determine when children begin to recall explicit memories (as in Sarah's case), or if preverbal children are capable of expressing implicit patterns or memories from their gestational life (as in Lucas's case).

Main Observations and Conclusions Drawn from the Results

In this section, I am going to present the most significant insights gleaned from the analysis of all observers' and facilitators' responses to the interviews, and observers' answers to the questionnaire presented in previous chapter.

I was mildly surprised with the overall responses of observers to the questionnaire. The video clips that I thought would be easier to interpret, because they presented a more literal representation of events in the child's history, proved to be the

most difficult for these trained observers to interpret correctly. On the other hand, those that, in my opinion, required more interpretative skill and prenatal and perinatal training, and that I thought would be harder to identify, proved to be the easiest for these observers. In the first group of clips, those showing more literal representations (Clips Two and Four), only three and two observers answered correctly to the questionnaire respectively. In the second group of clips, those requiring more interpretative skill (Clips One, Three and Five), all observers answered correctly to the first clip and four observers answered correctly to the other two.

In Clip Four, Mary is putting a tube down her throat for a prolonged period of time. I thought all observers would easily identify that she was revisiting an experience of having had tubes down her throat before. To my surprise, only two observers answered "intubation" in the questionnaire. Similarly, in Clip Two, Sarah is playing with an ambulance and taking toy figures in and out of it. I also expected observers to conclude that Sarah took an ambulance ride at some point in her life. Again, I was surprised to find that only three out of five observers made this interpretation after seeing the clip.

As the researcher, I realize that I selected the clips used in this study with knowledge of the history of the child, so I never put myself to the test that I put to the observers. Probably doing that would have shown me that it is not so easy, even in these seemingly literal cases, to identify the correct answer without knowing anything of the history of the child.

On the other hand, clips One, Three and Five, in my mind, require more interpretative skill and prenatal and perinatal training in order to select the correct answer. Clip One refers to the failure to progress during birth, Clip Three relates to the

loss of a twin and Clip Five relates to a birth by vacuum extraction. I expected these clips to be more difficult to interpret correctly, and yet they were easier for the five trained observers. One reason could be, precisely, that these observers were trained to see underlying prenatal and perinatal themes in their observations rather than merely rely on a literal interpretation. In order to see if my reasoning here has any validity, it would be interesting to compare the answers provided in this study to those of untrained observers.

An observation about my choice of clips is that Clip Four (Intubation) is the only one that has two sections spliced together in one clip. This is the clip that gave observers the most difficulty in identifying the child's history (only two observers out of five got the correct answer). The first segment of the clip shows that Mary chooses two tubes out of several objects on the floor and plays with them for a while. In the second segment, Mary brings those tubes close to her mouth and puts one of them down her throat. The reason I decided to include the first segment of the clip is because I wanted observers to see that Mary chose the tubes herself and that no one presented them to her. After seeing the results of the questionnaire, I wondered if this first segment confused the observers and distracted them from the main theme, Mary putting a tube down her throat.

The absence or presence of sound in the video clips does not seem to have a significant impact on observers arriving at the correct answer to the questionnaire. Clip Two (Sarah) and Three (Lucas), for instance, both kept the original sound, and yet did not get significantly better results than the other clips (Clip Two got three correct answers, and Clip Three got four).

Another observation is that the degree of convergence in the interview data generated by any particular video clip is directly related to the number of correct answers

given by observers to the questionnaire for that clip. For example, Clip One in which everyone was able to identify the correct answer, has the highest number of convergent themes (12); Clip Five where four out of five observers provided the correct answer to the questionnaire, has the second highest number of convergent themes (11); and Clip Three where four out of five observers provided the correct answer to the questionnaire, has the third highest number of convergent themes (9). On the other hand, Clips Two and Four (the ones receiving the fewest correct answers by the observers) have only six convergent themes. These results seem logical, as I would expect more convergent themes in clips where observers identified the correct answer to the questionnaire. On the contrary, there is no direct relationship between the number of unique or divergent themes, and the number of correct answers to the questionnaire.

Another factor influencing the choice of answers to the questionnaire is that some images in Clip Five provided an unanticipated clue, that two observers brought to my attention through their comments and interpretations. This clue may have guided the observers to perceive the correct answer to the questionnaire based not only on their observations of the child's behavior but also upon the cranial molding apparent in her head. These observers noting the "huge lump" on the top of Eva's head, wondered if the cause of it was some kind of mechanical intervention, like vacuum extraction. In order to put into perspective the impact of this "clue", it is also important to point out that, three of the observers did not notice the cranial molding of the child and yet two of these were still able to identify the "correct" answer to the questionnaire. All the observers were trained in the Castellino Prenatal and Birth Training to not only identify behaviors, but

also somatic patterns which could indicate somatic memories that were associated with certain birth scenarios.

Some observers tend to repeat the same answer to different questions in the questionnaire. This seems to support the assumption of the independence of trials. One clear example is the popular answer of "twin loss" among three observers. Observer 2, Three and Five chose "twin loss" twice, for Clips Three and Four. In Clip Three, "twin loss" is the correct answer, but not in Clip Four. It is very unlikely that Mary, the subject of Clip Four, would have a history of twin loss based on the information provided by one of her facilitators and the history of the child. In attempting to understand the dynamics behind these observers' choice of "twin loss" as the correct answer for Clip Four, a couple of explanations come to mind. First, the notion of twin loss is relatively new in the literature and a fascinating subject that Dr. Raymond Castellino introduces in the Prenatal and Birth Training. All the observers have taken the training with him and have been exposed to the concept. In the training, observers learn that the experience of losing a twin is much more common than expected and that it leaves a strong imprinting. It is common for participants in the training to re-experience the loss of a twin as part of their own prenatal history. I hypothesize "twin loss" is a popular answer based on the novelty of the information for most observers as well as on the intensity of the imprinting that it leaves. I am also tempted to hypothesize that some of the observers might have been projecting their own experience of twin loss in the way they perceived Clip Four. I think human perception is very subjective and commonly tinted by our previous experiences. Doing further research on this subject could be, in itself, the theme of another dissertation project. Lastly, I think we should not discard the possibility that Mary did indeed have an

experience of losing a twin, even though the facilitators did not relate any evidence of it in the sessions and the mother never mentioned any suspicion of twin loss.

The other case in which an observer chose the same answer for two video clips is the case of Observer 4, who chose "intubation" for Clips Three and Four. In this instance, intubation is the correct answer for Clip Four, but not for Clip Three (for which the correct answer is "twin loss"). In the interview, Observer 4 feels that she is expected to answer "twin loss" and decides not to do so, because she perceives that the doll is presented to Lucas and he does not chose it. After exploring several possibilities, Observer 4 chooses "intubation."

As I earlier noted, in 28% of the cases, observers did not provide the correct answer to the questionnaire. The fact that the clips lasted only a few minutes might have made it harder for the observers to identify what was happening in them. Obviously, had observers known the history of the child as well as being able to see longer segments of the sessions, the number of correct responses to the questionnaire would in all likelihood have been higher.

Nevertheless, 72% of observers did select the correct answers to the questionnaire. This is a remarkable high percentage given the fact that observers only watched short clips, with no context, no history and often without sound, and indicates a strong relationship between the behavior of the child shown in the clip, and the ability of the observers to identify a prenatal or perinatal event in the child's history.

Based on the above observations, I have concluded that identifying themes from a child's history from a short video clip is harder than I expected. Knowing the child's history seems to be an essential element to proper interpretation. At the same time, the

fact that 72%, even without knowing the child's history, have been able to identify events in the child's prenatal or perinatal history leads me to conclude that: (a) Trained observers are able to see and interpret, from a short video clip, a child's behavior in a way that is consistent with events in the child's prenatal or perinatal history; leading me to further conclude that (b) the children in these video clips are accessing events from their prenatal and perinatal history, and appear to be expressing implicit patterns or memories of their prenatal or perinatal experiences through their behavior and play.

Limitations

A limitation of this study is that the validity of the thesis presented in this research project 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 study correlated the same infant behavior (for example. crying when getting stuck under the father's leg) with a specific prenatal or perinatal trauma (failure to progress at birth), I cannot argue conclusively that the child was engaging in this behavior because he was remembering the early experience of being unable to progress at some point during his birth.

Even though it is statistically improbable that the observers selected so many of the right answers by chance, I cannot state with confidence that the reason that they were able to identify the right answer is that the following hypotheses are valid: (a) that babies have memories of their births; (b) that pre-verbal children communicate those memories behaviorally; and (c) that trained observers can accurately identify the memories that pre-verbal children communicate behaviorally.

I will be able, however, to 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 have the same challenge this study had (e.g., the fact that 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 the fact that all observers and facilitators, including the researcher, went through the same prenatal and birth training facilitated by Dr. Raymond Castellino and share the belief that people (including preverbal children) are able to remember their prenatal and perinatal experiences and re-enact these experiences in their daily lives. Moreover, Dr. Castellino has trained the researcher, observers and facilitators to observe and interpret infants' behavior. Therefore, there may be a bias towards perceiving the type of behaviors and interpretations learned in the training.

Another potential limitation of this study is the fact that there were adults in the room (and on the videotape) who had beliefs about what the child's experience was, which may have caused the adults to act in ways that *may have* provided information to the observers and/or which *may have* shaped how the child behaved in relation to them--a cleaner study would only have adults in the room who knew nothing of the child's birth history.

Another potential limitation of my study is the selection of the video clips used. I have extracted short segments of video clips from session of about one hour in length. I realize that the selection of the clips could be refined and improved. For example, there is

one case—Clip Three—in which the expected answer is “vanishing twin”. However because of the nature of the vanishing twin phenomenon, it is seldom possible to know with certainty that any particular pregnancy began with more than one embryo. In this case, I have made the assumption, based on the history of the child and the observations of the facilitators, that there is a very strong possibility, but not a certainty, that Lucas experienced the loss of a twin.

At the same time, in some occasions, children have vanishing twins that are never identify by the parents or the medical exams. In the light of this fact, it might be possible that other children in these clips had, in fact, an unidentified vanishing twin. Again, based on the history of the child and on the observations of the facilitators this is unlikely, but not impossible. This could threaten the assumption that the answers to the survey were independent.

In retrospect, although the observers were purposely chosen for their skills in identifying prenatal and perinatal patterns, in order to safeguard against potential bias in favor of my hypotheses, 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 could have been chosen to describe and identify themes.

Finally, another possible limitation of the study relates to its design. Observers had to answer three questions in an interview and later on respond to a multiple-choice questionnaire. After implementation, I realized that, in some cases, the list of answers on the questionnaire offered possible scenarios to observers that they might not have thought about on their own, and maybe oriented them to the right answer. One example of this is

Clip Five, in which only one observer mentioned “vacuum extraction” during the interview but four observers gave “vacuum extraction” as the correct answer later on during the questionnaire. Observer 3, for example, identified that the child was showing her birth and that she needed to be dragged out of the uterus, but thought at the beginning that she was born by C-section. Later on, he chose “vacuum extraction” in the questionnaire. Observer 4 and Five described in the interview that Eva was pulled out of the birth canal but did not specify the method until they answered “vacuum extraction” in the questionnaire.

This study enables me to speculate about my hypotheses based on clinical observations, but 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 pioneer idea has the potential to change the way to receive babies into the world and treat preverbal children that are not able to communicate their needs with words.

Having a society aware of the tremendous capacities of prenates and infants including their capacity to remember, communicate and be aware of what happens to them and to their environment should imply changes in the way we practice medicine, health care, infant psychology and in the way parents welcome and communicate with their unborn and born babies.

Our newborns often experience a bewildering array of interventions in the way they come into the world and in the first hours of their lives, including mechanical or

chemical interventions during their births, as well as postnatal procedures that often 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 the society in general become aware of the child'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 there is the potential that we will be treating prenates 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, if professionals can be trained to observe and recognize the imprinting of prenatal and perinatal experiences in the behavior of children, this would provide important clues to counseling families and supporting them to understand and 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 to perceive, not only infants, but humanity as a whole.

I believe every child has the right to be welcomed into the world as a conscious being, 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

The purpose of my research was to study if preverbal children are capable of having memories of their prenatal or perinatal lives. Since these children do not communicate through verbal language, I had to design a study based on observation. I decided to choose five therapists trained in prenatal and birth therapy as my observers to determine if they would be capable of recognizing aspects of the prenatal or perinatal life of the child based on their observations of the child's behavior without any prior information about the child's history. My study has shown that in 72% of the cases, these five trained observers were able to identify correctly what the child was showing in his or her behavior and relate it to events from the child's prenatal or perinatal history. This is the *first* systematic study of 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 this time with untrained observers (e.g. participants that have not been trained in prenatal and birth therapy), to test if they are capable as well, and to which degree, of perceiving relationships between a child's behavior and his or her unknown prenatal or perinatal history. If so, this will 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 a full hour therapy session to the observers, not just a selected short clip. During an hour session, I suspect the preverbal child would engage in many behaviors, some related to their prenatal or birth history and others not. Still the purpose of the study will be for 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 both 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.

It would also be interesting to design a case study where one specific behavior of the child, for example, playing with ambulances, will be 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 among themselves as well as with the history of the child to determine to which degree the child's play is consistent with and reflects his or her prenatal and perinatal history. This study might help eliminate the objection that a behavior occurring once may be due to chance and not necessarily have a relationship to some specific prenatal or perinatal experience.

A final recommendation for future research would be to design a qualitative project to study the therapeutic effects and benefits to the child that may derive from communicating his or her prenatal or birth history. At the BEBA Clinic I have observed that offering the preverbal child the space to play and communicate his or her story in a loving, compassionate and receptive environment has beneficial effects on the wellbeing of the child. I think designing a research study with this purpose, could shed a lot of light on the field of prenatal and perinatal therapy.

Final Thoughts

The intention of my work has been to design a research project that would explore the idea that infants are conscious beings, and that their memories are not confined to their physical brains and central nervous systems. In my research project, I studied the possibility of preverbal children having 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 part of the ordering principles of who we are.

The results of my study show that five trained observers are capable of relating the behaviors of preverbal children with events in their prenatal or perinatal lives, without knowing anything about their actual stories. From there, I have made the inferential leap that these children are able to show in their behaviors events from their prenatal or perinatal lives because they remember them, implicitly or explicitly.

My intention has been fired by my passion for babies and children as well as my passion for spirituality and for exploring human consciousness and identify. I see infants as conscious beings and I believe I serve them better in my work when I relate to them as such.

In the process of doing this research, I learned to honor the data, and to let the data speak and support, or not support, my research question. I think this dissertation journey has helped me become a better researcher, seeking to put objectivity first, before my own wishes for eloquent results. It has also shown me that, when I follow my passion and my deepest intention, I can overcome any challenges in the journey. I hope this

exploration in the consciousness and memory of preverbal children will support others as well in understanding infants more deeply and in honoring who they are.

APPENDICES

Appendix A: BEBA Clinic

Mission

BEBA supports families to resolve prenatal, birth and other early trauma, both physical and emotional, while facilitating the development of compassionate relationships, the healthy growth of children, and effective parenting.

This research clinic was co-founded by Dr. Raymond Castellino and Dr. Wendy McCarty. Raymond Castellino, D.C. (retired), R.C.S.T., R.P.P. (Doctor of Chiropractic, Registered Craniosacral Therapist, Registered Polarity Practitioner) is the Clinic Director of the BEBA Clinic. He is a pioneer in the field of prenatal and perinatal trauma resolution. Wendy McCarty, Ph.D., is the founding Chair of the Prenatal and Perinatal Psychology Program at Santa Barbara Graduate Institute. She has worked with families for 25 years as an obstetrical nurse, childbirth educator, psychotherapist, prenatal and birth therapist, educator, and consultant. She co-founded the BEBA Clinic and worked with clients at this clinic for several years.

Family Clinic

The clinic offers weekly sessions to Santa Barbara area families. Families come until the original trauma has been resolved and then are welcome to return on an as needed basis. Services are available on a sliding scale. Parents learn to understand what their babies/children are communicating with body language, symbolic play, behaviors and words about their earliest experiences; families learn ways of interacting and activities that will lead to resolution of early trauma and closer, more loving family bonds.

BEBA families work with trained facilitators who utilize approaches that respect the innate wisdom of the child and seek to understand the child's perspective and experience. This model brings together the best of body oriented therapies and prenatal and perinatal psychology, including craniosacral therapy, playing, modeling, movement facilitation, role-playing and focusing on pacing, tempo and establishing harmonic resonance.

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Who Comes to the BEBA Family Clinic?

- prenatal couples concerned that their own early experiences might interfere with their ability to bond with their children

- families who have experienced prematurity, low birth weight, early medical problems and/or hospitalization of mother or baby, difficult pregnancy or births or other early important losses such as a death in the family, anxiety/depression or a high stress pregnancy
- parents concerned about their infants who cried without apparent cause, have difficulty sleeping, have breastfeeding challenges, are unable to make eye contact, or who seem listless or slow to develop physical strength
- families concerned about their toddlers who throw frequent tantrums, exhibit poor coordination and balance, are overly aggressive towards other children, isolate themselves, have difficulties focusing their attention or are hyperactive
- couples and single parents who want to enhance their parenting skills
- parents who want help bonding with their adopted children
- parents who feel unduly frustrated or depressed about their family situation, are concerned about sibling rivalry or are unable to communicate satisfactorily with their children
- parents seeking support to face acute conditions with their babies and children including hospitalization, surgery, parental death, and sexual abuse.

Although BEBA works with families anytime from pregnancy until the children turn twelve, we have found that trauma imprinting can be resolved most effectively when it is addressed as soon as possible. For this reason, we prefer to see families as early as possible. (reprinted with permission from BEBA Clinic, 2005)

Appendix B: Clinical Staff at the BEBA Clinic

Clinical Director

Raymond Castellino, D.C. (retired), R.P.P. (Doctor of Chiropractic, Registered Craniosacral Therapist, Registered Polarity Practitioner) is the co-founder and Clinic Director. He has been a pioneer in the field of prenatal and perinatal trauma resolution and since 1992. He is a founding board member of aTLC (Alliance for Transforming the Lives of Children), as well as a faculty member of the Santa Barbara Graduate Institute's Prenatal and Perinatal Psychology Master's and Ph.D. programs and their Somatic Psychology Ph.D. program. He has been a frequent presenter at the APPPAH (Association for Prenatal and Perinatal Psychology and Health), CSTA-NA (Craniosacral Therapy Association—North America) and APTA (American Polarity Therapy Association) national conferences.

He has developed and teaches a two-year Foundation Training course for healthcare professionals. Since 1994, he has taught several Foundation Trainings in the U.S., England and Switzerland. He also facilitates small group Process Workshops for professionals and offers clinical supervision and advanced courses for graduates of his Foundation Training. All the facilitators in BEBA are graduates of his Foundation Training and have taken and assisted numerous process workshops and an additional Foundation Training. They are also all craniosacral therapists.

There Are Four Primary Facilitators at the BEBA Clinic

Raymond Castellino, D.C., RCST®, R.P.P., see above information.

Jean Weitenstiener, O.T., RCST®, is a practicing occupational therapist with a pediatric specialty. She has been working at the BEBA Clinic since 1996. She is a

graduate of Dr. Castellino's Foundation Training and has assisted several of his process workshops for adults and his Foundation Training. She has a private practice in Santa Barbara, CA that focuses on supporting families similarly to the BEBA method. She is also as a registered craniosacral therapist.

Nancy Greenfield, RCST®, is a Ph.D. candidate in Prenatal and Perinatal Psychology at the Santa Barbara Graduate Institute, and has worked at the BEBA Clinic since 1996. Currently she works as a facilitator at the Santa Barbara and Ojai BEBA Clinics. She is a certified craniosacral therapist, and M.F.T. intern, number 47194, supervised by Cynthia Burnside (MFT 22657). She is a graduate of Dr. Castellino's Foundation Training, has taken many graduate level classes with him and assisted in numerous process workshops for adults, as well as Dr. Castellino's two-year Foundation Training and other advanced courses.

Tara Maria Blasco, RCST®, is a Ph.D. candidate in Prenatal and Perinatal Psychology at the Santa Barbara Graduate Institute, and has worked at the BEBA Clinic since 1996. Currently she works as a facilitator at the Santa Barbara and Ojai BEBA Clinics. She is a certified craniosacral therapist, and M.F.T. intern, number 45256, supervised by Cynthia Burnside (MFT 22657). She is a graduate of Dr. Castellino's Foundation Training, has taken many graduate level classes with him and assisted in numerous process workshops for adults, as well as Dr. Castellino's two-year Foundation Training and other advanced courses. She also has worked as a psychologist, craniosacral therapist and yoga teacher in Barcelona, Spain. (reprinted with permisstion, BEBA Clinic, 2005)

Appendix C: Intake Forms

BEBA

1105 N. Ontare, Santa Barbara, CA 93105 805 687-2897 [fax: 805 687-4719]

CHILD INTAKE FORM

Date _____

Child's Full Name _____ Birth date _____ Age ___

Mother's Full Name _____ Birth date _____ Age ___

Father's Full Name _____ Birth date _____ Age___

Parents: _____Married _____Unmarried _____Live together _____Live separately

Family Address (or mother's if parents live separately)

_____

street city zip

Phone: (Home) _____ (Work) _____(cell)_____

Fax: _____ Email: _____

Father's Address & Phone(s) that are different than mom's

_____

street city zip

Phone: (Home) _____ (Work) _____(cell)_____

Fax: _____ Email: _____

Who referred you to BEBA?_____

Current physical, developmental or academic challenges for child:

Current emotional/relationship challenges for child:

Primary concerns of parents, intention in coming for sessions:

Conception

Was baby planned? Wanted?

Conception: Normal_____ In vitro _____ Insemination _____ other

If any stress occurred around ability to, intention to or not wanting to conceive, describe:

If known, was the baby conceived while either parent was using alcohol or drugs?

Discovery

Mom's and dad's attitude toward baby upon discovering pregnancy.

If baby was not wanted, was abortion considered by either parent?_____ Attempted? If yes, give circumstances including timing during the pregnancy.

Pregnancy

Mom's health (or health challenges & medications taken), and diet and exercise during pregnancy and attitude toward developing child.

Dad's attitude toward developing child and support (or lack of support) of mom:

Nature of support system in larger community and attitude of these people toward pregnancy (egg parents, friends, etc.)

Nature of parent's relationship with each other and as parents to be.

Did either parent smoke or use recreational drugs? _____ If yes, who and how much:

How often do parents drink alcohol?_____ How often did mom drink and how much at a time during pregnancy?

Describe any stresses during pregnancy (egg., illness or death of friend, parent; strained relationship between mom and dad; absence of dad; depression, lack of support from family or friends, financial worries, major moves, etc.)

Did either parent lose a child to miscarriage, abortion or early death prior to this pregnancy? _____If yes give circumstances and dates, age of fetus or child at time of loss. How did this affect this pregnancy?

Birth

Birth location_____ Midwife or OB's name_____.

Father's role at the birth?

Other support people at labor or birth:

Drugs used during pregnancy or labor (for prolonging pregnancy, for inducing, for anesthesia, epidurals): Give reason for use.

Labor/Birth interventions: inducing? _____forceps?_____ Vacuum Extraction?____

C-Section_____ [planned or emergency and why?] Describe your experience.

Episiotomy? _____ Tear? _____ Birth Weight_____ Apgar Scores___

Other birth complications?

First Hour/Day(s) After Birth

Where was your baby the first hour after birth? (With mom? Nursing started? Separated for washing, measuring, testing, intubation? If separated how long?)

First day, was baby with mom or dad most of the time? If not, describe where and why

NICU?_____ (if yes, how long, reason for NICU, procedures used)

Postpartum

Did you/are you nursing? _____How long? _____ Any difficulties, complications?

Describe support (or lack of) you had first few months after birth.

Describe nature of father's relationship to child & mom during first weeks, years.

Postpartum, childhood health complications, illnesses for baby or mom including postpartum depression:

If boy, was he circumcised? If yes, any complications?

Vaccinated? If yes, any complications?

Other Relationships

Siblings: ages, names and nature of relationship. Include children from prior relationships.

Other caregivers important to the child during first year or present time?
(Reprinted with permission, BEBA Clinic, 2005)

Appendix D: Informed Consent Form for Trained Observers

and Agreement to Participate

Santa Barbara Graduate Institute
Tara Maria A. Blasco, MA

"Prenatal and Perinatal Memories in Preverbal Children"

INFORMED CONSENT FORM FOR TRAINED OBSERVERS

I am a doctoral student at the Santa Barbara Graduate Institute and am conducting a study on prenatal and perinatal (PPN) memories in preverbal children for my dissertation. I am giving you this form and the information it contains so that you have a full understanding of the study's procedures before you decide whether or not you are interested in participating.

If you choose to sign this form, that will mean that you have (a) received this document describing what is involved in participating in this study; (b) been apprised of the potential benefits and risks of participating in this research project; (c) been given enough time to consider the information in the document; and (d) voluntarily agreed to participate in the project.

Description of Study and Participation

The purpose of the study is to determine the degree to which trained observers can relate a child's behavior to some aspect of its pre and perinatal experience without knowing anything about the child's history.

Five trained observers, including you should you agree to participate, will be asked to view video clips of preverbal children during their therapy sessions at the BEBA Clinic. I have intentionally selected clips in which I believe a child is expressing a particular pre or perinatal experience that the child's parents reported the child had during the PPN period of his or her life. I will interview you regarding your observations of the clips and then have you fill out a multiple choice questionnaire.

I have invited you to participate in this study because, like the other prospective participants, you meet the following three criteria: You are (a) knowledgeable in the field of pre and perinatal therapy, (b) have taken the two-year Castellino Foundation training in Prenatal and Birth Therapy, and (c) are currently working with children and their families.

If you agree to participate, this is how we will proceed. First, I will provide you with a package that includes the following: An introductory letter with instructions; a DVD with five video clips; a page that lists the three interview questions I will ask you; a page for

writing your personal notes in response to these three questions; a multiple choice questionnaire sealed in a separate envelope; and a self-addressed, stamped envelope for returning the DVD after completion of the interviews.

As the instructions explain, I will have you read the three interview questions and then watch the first video clip without taking any notes. Next, you will watch the first video clip a second time immediately after the first viewing and take notes that relate to the three interview questions in preparation for the phone interview I will conduct with you. You will follow this same procedure for each of the four following clips (i.e., watching clip #2 once without taking notes, then watching clip #2 a second time in order to take notes; then watching clip #3 once without taking notes, etc.). The viewing of the five clips in this fashion should take you about 45 minutes.

After you have watched each of the five clips twice and taken notes, you will call me to schedule a mutually convenient time for me to interview you over the phone.

Just before I am scheduled to call you for the interview, you will watch the five video clips for a third and final time. If you want, you may take additional notes at this time.

During the call, I will ask you the three interview questions for each of the five video clips. You may use your notes when responding. After we have discussed each of the clips, I will have you unseal the envelope with the multiple choice questionnaire. The questionnaire, which you will complete while we are on the phone, will list ten possible PPN experiences. For each video clip, you will select the one option you believe most accurately reflects what the child is communicating. You may also rely on your notes when completing the questionnaire. Our phone discussion should take approximately half an hour.

In order to maintain the validity of the research, I will ask that you <u>not</u> (a) unseal the envelope with the questionnaire until I specifically ask you to do so during the interview, (b) discuss the study or the video clips with any of our colleagues until after the research has been completed, and (c) show the DVD to anyone. I will ask you to return the DVD once our interview is complete in order to respect the privacy of the people in the clips. There will be a self-addressed, stamped envelope for that purpose.

Voluntary Nature of Participation

Participation in this project is strictly voluntary. If you are interested in participating, you can withdraw in part or in full at any time with no consequences. Even more specifically, you may stop the interview at any time or choose not to answer any questions you wish.

Confidentiality

I plan to audiotape the interview and take notes while we speak. These recordings—written and auditory—will solely be used to facilitate an accurate account of the data. I will keep all research materials secure in my home office for at least five years, which no

one will have access to but me. You will not be required to write your name or any other identifying information on the research materials (other than this consent form) unless you wish to do so.

I plan to use the data I collect from you in my dissertation, professional talks, and research publications. In order to protect your privacy, I will not use your real name in the dissertation or in any public presentations I give or articles I write.

I will not attach your name with the results of this study in public documents, presentations or general communication with anyone. Accordingly, no one but me will know what your observations were of the five video clips (unless you choose to tell people after the study is over).

If you would like me to acknowledge your participation in this research project, let me know and I will name you in the acknowledgement section of my dissertation.

It is possible, though highly unlikely, that as a result of legal action I, as the researcher, may be required to divulge information obtained in the course of this research to a court or other legal body. I plan to protect your anonymity to the full extent provided by law.

Risks

Although the known risks associated with participating in this research are minimal, you need to be aware of what they are so that you know to what you are agreeing if you choose to participate. Specifically, given that there is presumably a "correct" answer for each video clip and that I will ask you to draw on your professional expertise to deduce what that correct answer is, it is possible that your participation in this study may cause you to experience emotional discomfort, such as performance anxiety or embarrassment. If you would like to talk to a licensed therapist about any feelings that arise as a result of your participation in this project, please feel free to contact me and I will provide you with qualified resources near your home.

In addition, it is important to recognize that you have a relationship history with me. I intend to do everything possible to safeguard against problems arising as a result of dual relationship and to ensure normal human relations between you and me after the study.

Benefits

Your participation may help us learn more about pre- and perinatal psychology, which may benefit children, their families, and the field of PPN psychology.

Further, in exchange for your willingness to participate in this study, I will provide you with a copy of my dissertation when it is complete.

Contact Information

If you have any questions about the study at any point, please feel free to call Tara Maria A. Blasco, principal researcher, at 805-646 1269.

If you have any concerns or complaints about this study, you are encouraged to discuss them with Dr. Jill Kern, Director of Research, Santa Barbara Graduate Institute. Dr. Kern can be reached by mail at Santa Barbara Graduate Institute, 525 East Micheltorena, Suite 205, Santa Barbara, CA. 93103; by phone at 805-963-6896 ext. 106; or by email at jkern@sbgi.edu.

Thank you for your willingness to consider participating in this study.

AGREEMENT TO PARTICIPATE

Having been asked by Tara Maria A. Blasco of Santa Barbara Graduate Institute to participate in a research project, I _____have read the procedures specified in the document. (Please print your name)

I understand the procedures to be used in this project and that the results of this project may bring some benefits to children, their families, and the field of pre and perinatal psychology.

I understand that some of the results may be published in journals and publications or presented at conferences, and I consent to that.

I understand that my identity will be kept confidential to the full extent provided by law.

I understand that all tapes of the interviews and notes taken by the researcher will be kept in a secure location.

I understand that I may request a copy of this dissertation when it is complete (regardless of whether I withdraw from the study or not).

I understand that I may withdraw my participation in part or in full from this study at any time without penalty.

I also understand that I may contact Tara Maria A. Blasco, principal researcher, with questions about the project. Further, I may register any complaint I might have about the project with Dr. Jill Kern, Director of Research, Santa Barbara Graduate Institute.

I agree to participate in this project, which entails previewing video clips, which will take approximately 45 minutes, and participating in a phone interview, which will take about 30 minutes. In addition, I agree to follow the researcher's requirements that I (a) not unseal the envelope with the questionnaire until she specifically asks me to during the interview, (b) not discuss the study or the video clips with any of our colleagues until after the research has been completed, (c) not show the DVD to anyone, and (d) return the DVD once the interview is over.

Signature_____ Date_____

Name (print) _____

Address_____ Phone number_____

Signature of
researcher_____Date_____

I would like my participation in this research project be acknowledged in the acknowledgement section of my dissertation……

I would like my participation in this research project NOT be acknowledged in the acknowledgement section of my dissertation……

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