

The Alchemical Dance of Mother and Infant: A Blueprint for Co-Creative Dyadic Unity During the Prenatal and Perinatal Period

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ABSTRACT: This theoretical dissertation considered the biological and psychological importance of the dance between mother and infant from conception through the bonding period. It proposed a unifying dance metaphor of *pre- and perinatal mother-infant alchemical dance* to provide a psychological term describing their first organizing co-creative dynamics. The process of *alchemical dance* is postulated to be Nature's blueprint for the initial creational unfolding of human development. The function of this dance patterning was to create new life, organize infant embodiment, enhance mother-infant unity, and infuse a sense of belonging in relationship. There are different characteristics between prenatal and perinatal dance. The theoretical construct was based on multidisciplinary scientific theories, joined with ancient philosophies, gathered from quantum physics, psychoanalytic theory, developmental psychological theory, prenatal and perinatal psychology and infant programming, biology and affective neuroscience, and from knowledge of the divine feminine, ancient dance, and alchemy. The use of metaphor was the primary methodology. The dissertation advanced a theoretical framework for prenatal and perinatal psychology. Implications placed new value on creating educational programs for conscious parenting during the pre and perinatal period, based on the principles of alchemical dance.

KEY WORDS: Prenatal and perinatal psychology, theory, dance, neuroscience, pregnancy, parenting, mother infant bonding

INTRODUCTION

Theoretical inquiry was the design for this dissertation that

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postulated new conceptual foundations for the field of prenatal and perinatal psychology. Theory brings into coherent “form the concept and principles used in the exploration and conceptual organization of reality” (Olds, 1992, p. 42). According to Stinchcome (1968), the primary reason for constructing theory about social and psychological phenomena is to explore patterns of observation in the world. My contribution to the history of ideas, as a theorist in prenatal and perinatal psychology, was to suggest that dance-movement patterning is Nature’s intelligent blueprint for mother infant co-creative symbiosis from conception through the bonding period. It proposed the important role of dance and alchemy as catalytic processes that underlie initial human patterning and development. This scientific topic is relevant and timely for a theoretical dissertation. Schore (1994), an affective neurobiologist, stated that the objective of science is now to identify the patterning of early human development as “the beginning of living systems set the stage for every aspect of an organism’s internal and external functioning” (p. 4).

Definitions of Dance and Alchemy

This theoretical dissertation provided a scholarly and scientific argument, based on multidimensional scientific theories and ancient philosophies, that early pre- and perinatal mothering function is a pre- and perinatal mother-infant alchemical dance and is a co-creative dyadic process. “Dance” was broadly defined by Hanna (1987) as “rhythmical movement as organized energy” and “human movement as a non-verbal form of expression” (p. 14). Alchemy, as an ancient science, was broadly defined as the study of “transformational processes in the perfection and evolution of matter” (Scully, 2003, p. 8). Kenyon and Sion (2002) defined alchemy as “the art and science of changing one form into another, and inner alchemy transforms the energy of consciousness and the life force of embodiment into expanded awareness” (p. 312).

The Theorists

This dissertation was based upon the works of thirty-five prominent theorists. Bohm (1950, 1980), Capra (1975, 1996, 2001, 2002), Del Re (2000), Hunt (1968, 1989), Lewis & Granic (2000), Kenny (1988), Kauffman (1993), McCraty (2000, 2003), McTaggart (2000), Wolf, (2000, 2001), and Zukav (1979) are experts on the topics of physics and related studies of field and chaos theory as well as heart math. Beebe (2000, 2003), Bowlby (1950, 1969, 1973, 1982,

1988), Fogel (1993, 2001), Fonagy (1961, 1998, 2002), Klein (1932, 1955, 1975), Stern (1971, 1974, 1977, 1985, 1990, 1991, 1995, 2000, 2004), Fonagy & Target (1997, 2005), and Winnicott (1967, 1971, 1987) offer insights from psychiatry and developmental psychology. Castellino (1995, 1996, 2000), Chamberlain (1986, 1987, 1988, 1989, 1992, 1997, 1998, 1999, 2000), Emerson (1989, 1993, 1996, 2001, 2002), McCarty (1996, 2000, 2004), Nathanielsz (1999, 2001), Verny & Kelly (1981), and Verny & Weintraub (2000, 2002a, 2002b) practice and teach pre- and perinatal psychology. Bainbridge (2000), Ho (1996, 2001, 2003), Lipton (1998, 2005), Maturana (1997), and Sahtouris (2000) share knowledge of biology and Schore (1994, 1997, 2001a, 2001b, 2003, 2005) from affective neuroscience. Modern multi-disciplinary scientific theories were bridged with the addition of ancient beliefs about the Goddess/Divine Mother, sacred dance, alchemy and sacred geometry (Gilbert, 2003; Harvey, 1995; Scully, 2000; Stewart, 2000).

INTRODUCTION TO DANCE THEORY

The *dance of life* is a central metaphoric term used by Havelock Ellis (1923) to philosophically communicate the importance of dance in daily life, the dancing order of the universe, and the need for continual dancing interplay of all living beings in order to achieve interactional unity. This metaphor accurately implies nature's aliveness, rhythmicity and fine tuned choreography of early human development, as well as energetic reality. The word *dance* can convey new psycho-neurobiological concepts such as mother-infant synchrony, resonance, interactive repair, limbic attunement and affect regulation for optimal infant psychological and socio-affective development (Hrdy, 1999; Schore, 1994, 2001; Stern, 1985). Also many prominent theorists such as Capra (1975, 2001), Del Re (2000), Sahtouris & Lovelock (2000), Stern (1977, 1985) and Ho (2003) are using the dance metaphor for theorization purposes.

Exploration of the Cosmic Dance

It is important to note that in the twenty-first century, *the cosmic dance* is being used as a new unifying scientific metaphor reflecting the latest advances in physics, biology, ecology and cosmology regarding the fluid harmony and interrelatedness of all systems in a universe in which all energy is electromagnetic energy (Capra, 1972, 2004; Del Re, 2000; Laszlo, 2004; Sahtouris & Lovelock, 2000). Capra

(2001), a physicist, states, "In our time, physicists have used the most advanced technology to portray patterns of the cosmic dance" (p. 2). This cosmic dance reveals the operations of the laws of Nature in evolving emergent whole systems. O'Murchu (2004), states, "energy is the substance of life, the unrelenting wellspring of pure possibility, escalating and undulating as in a great cosmic dance" (p. 39).

It is important to note that in the new millennium, two physicists (Capra, 2001, 2002, 2004; Del Re, 2000), a philosopher/writer (Rupp, 2002), and an evolutionary biologist (Sahtouris & Lovelock, 2000) are all writing about "the cosmic dance" or "earth dance" in order to convey a general pattern of dance in which all systems, objects and organisms appear to be conforming. "The cosmic dance gives meaningful expression in the dynamic order of a universe as a coherent, evolving pattern in which all things participate as if in a dance or ballet, combining general harmony and coherence with evolution, randomness, irreversibility" (Del Re, 2000, pp. x-xi).

The metaphor of the cosmic dance is moving scientific thinking away from the Newtonian, clockwork, mechanistic, linear worldview. This particular dance metaphor is serving as inspiration and scientific foundation to support a new energetic paradigm based on advances from quantum physics, ecology, biology, living systems and systems theory, the science of fields, and complexity and chaos theories (Del Re, 2000). Capra (2001) stated that the metaphor of the cosmic dance unifies ancient mythology, religious art and modern physics. This new paradigm values a dynamic view of an interrelated universe based on flux, process and interrelationship (Capra, 2002; Lewis & Granic, 2000; McTaggart, 2002).

This theoretical dissertation hypothesized that the earliest mother-infant relationship is an intimate holographic reflection of the larger cosmic or earth dance process designed by nature for overall evolutionary growth and change (Sahtouris & Lovelock, 2000). This particular view once again holistically and harmoniously gathers matriarchal consciousness, sacred dance, alchemy, and sacred geometry, with modern physics, developmental psychology, pre- and perinatal psychology and biology.

Documentation of Dancing Systems

Many disciplines in science are currently documenting important dances in the universe, particularly the hidden dances in the galaxies of planets, stars, and within atoms, cells, neurons and light wave particles (Capra, 2001; Del Re, 2000; Harmon & Sahtouris, 1998).

Advanced imaging tools are revealing these interactive dances and the dancing dialogues between mother and infant (Kerrod, 2003; Nilsson & Hamberger, 1993; Spelke, 2002).

STATEMENT OF THE PROBLEM

It seems tragic, now that art and science are revealing humans exist in a dancing universe and are documenting the importance of movement to biological and psychological functioning, modern men and women are no longer dancing for health, unity and self expression as their ancestors did (Engler-Hicks, 2002; Gleisser, 1997; Highwater, 1978).

Where are the dancing, nourishing mothers who totally merged with their infants with intense natural, loving and bodily involvement? They danced with their babies in utero, carrying them on their bodies, naturally birthing, breastfeeding, soothing their infants with undulating, rocking, swaying, cradling and rhythmical movements accompanied by song. They honored the dance perennially that has existed for generations upon generations. They valued symbiosis with baby through alignment to rhythmic cycles. According to Peat (2002), early human societies cradled within the rhythms of Nature became changed with the first mechanical clocks. These rhythms still exist but are now greatly missed more and more by young infants who need a slower, sensitive, sustained, rhythmic dyadic interaction and comfort from an attuned caregiver. They also require attention to their nonverbal cues, touch, and movement experiencing in order to promote shared emotion, affect regulation, and bonding for developmental and brain growth and for a sense of belonging (Fogel, 1993; Kinsley & Lampert, 2006; Schore, 1994; Stern, 1985).

Lack of Movement Repertoire in Modern Peoples

According to Valerie Hunt (1968), modern peoples no longer have instinctual access to the dancing undulating flows tied to body, mind and spirit wholeness, bodily pleasure, easy birthing and the nurturing of children. These rhythms must be again relearned so that parents can model appropriate movement behaviors for soothing and regulatory purposes (Schore, 1994). In modern times, they have been replaced by bound flows due to stress, which are restrictive flows (von Laban, 1973). Bounded rhythms cause bodily tension and the energy imbalances that cause disease (Hunt, 1968). There is no general

physical outlet in the body for emotional and physical release. A tense parent may not be able to provide the natural rhythms needed for nurturing and learning and for the symbiotic regulation of the infant's nervous system (Verny & Weintraub, 2002; Schore, 1994). This insight means that mothers, fathers and caregivers are physically and energetically imprinting these bound flows to their infants who are being denied calming of their nervous systems and full freedom of movement expression.

Early stressors on the mother prenatally can promote negative infant development (Nathanielsz, 1999; Verny & Weintraub, 2002). This modern tendency for inactivity may be also greatly interfering with healthy body-mind functioning, as well as denying active relational intimacy through play, a developmental requirement during the first year of life (Stern, 1977). The infant needs movement to acquire good loco-motor skills, coordination, brain function, social skills, body image and self concept in order to move to the next level of development, dependent on their first movement mastery (Engler-Hicks, 2002). Modern parents restrict their infants as they unconsciously place them routinely in infant seats, carriers, strollers, and cribs, denying change of position, eye and touching contact. Transmission of these restricting patterns may greatly hinder both present and future physical, motor, emotional and brain functioning of the developing child for optimal growth and development (Fonagy & Target, 2005).

Infant Developmental Delays on the Rise

Lack of direct and expanded movement experiencing, as well as lack of healthy and expanded maternal-infant bodily and psychological exchanges, may be causing infant developmental problems. According to Plaskow and Christ (1989), the mother uses the beat of her heart, body, mind and spirit to call her child into dialogue. This is a pre-verbal, rhythmical dance that is becoming disrupted in modern times. The absence of interactive synchrony with a primary caregiver may be responsible for the recent rise of infants and toddlers who exhibit intellectual, emotional, motor and learning deficits (Mate, 2000; von Os, Jones, Lewis, Wadsworth & Murray, 1997). Modern prenatates and infants may not be receiving proper rhythmical soothing or stimulation of their brains, senses and nervous systems (Schore, 2001).

METHODOLOGY

The methodology for this theoretical dissertation used metaphor as a means to creatively develop the proposed original construct of pre-and perinatal mother-infant alchemical dance. I stand on the shoulders of modern prominent psychological and scientific theorists who use metaphor to advance their new scientific theories. They are Bohm (1980), Bowlby (1988), Fogel (1993), Kenny (1989), (Schore (1994), Stern (1979, 1995), and Winnicott (1971). Specifically, the use of a dance metaphor was central to the methodology describing these largely non-verbal maternal-infant processes/functions. I stand on the shoulders of physicists Capra (2001), Del Re (2000), Zukav (1979), biologists, Sahtouris & Lovelock (2000) and Ho (1999) and psychiatrists, Beebe (2000) and Stern (1995), all using the dance metaphor to convey their current theories.

Living Methodology

A living methodology was artistically created throughout the work to holographically and metaphorically reflect the universal dance of life (Larsen, 1998). All of the presenting theorists moved and danced in their groups participating in an *alchemical dance* around a fire. This ritual moved them through the progressive alchemical stages of turning lead into gold in order to elevate the consciousness of the group. They contributed conceptual foundations for the development of a theoretical construct using a unifying metaphor based upon their ideas. This creative participation by the theorists generated archetypal energies connected to promote modern myth making based on science (Larsen, 1998).

Metaphors as Holistic Pictures

The scientific use of such metaphors as the cosmic dance and pre-and perinatal mother-infant alchemical dance suggest holistic pictures of the holographic nature of the universe (McTaggart, 2002). These metaphors were created in order to advance human thought at the millennium, aligned with new theories about quantum physics and scientific understandings of a unified reality (Capra, 2002; Olds, 1992). Also, the use of metaphor seemed appropriate to describe the pre- and perinatal period of life, when mother and baby energetically need to share a right brained metaphoric mind. "...the child entering the world, with an unspecialized metaphoric mind is a charge of nature...Time is cyclic; space is limitless; all things are holistic and

unified” (Samples, 1976, p. 24).

Theoretical Usages of Metaphor

The history of both philosophy and psychology is filled with theories using metaphorical language from Aristotle to Freud (Olds, 1992). The value of using metaphor to advance theorization is based upon the writings of Kuhn (1987), Pribram (1990), Lakoff, and Johnson (1980, 1999), Hillman (1975), and Ricoeur (1977). Collectively, they suggest that metaphor expresses complex ideas coming from different vantage points into a concise and simple form and develops a complex idea easily understood and disseminated by lay and professional people. Metaphor also describes holistic ideas, non-verbal somatic processes, as well as energetic paradigms, not easily grasped. The construct of this theoretical dissertation conveyed a complex idea using metaphor that created an appreciation for the dynamic wholeness of all systems unlike analytic theorems. My theoretical construct of pre- and perinatal mother-infant alchemical dance created a new all-inclusive psychological term that alludes to mother-infant unity and first dyadic organizing co-creative relational dynamics based upon dance-movement patterning. Also, the theoretical dissertation promoted the value of using metaphor to develop new additional theories for pre- and perinatal psychology and somatic psychology.

ROLE OF DANCE-MOVEMENT PATTERNING

Possible Creational Origins of Dance

The origin of dance-movement imprinting in human development is not addressed in this dissertation. It may come from fifteen billion years of evolution or may descend from dancing gods. Many ancient creational myths have described the power of these dancing gods and goddesses to create life in the universe from realms of primordial energy and imagination. For example, Shiva Nataraja, The Lord of the Dance in the Hindu tradition, creatively moved/danced the earth, winds and waters in order to bring new life on earth (Highwater, 1978). Gaia, in Greek mythology, came dancing out of the void with flowing white veils (Sahtouris & Lovelock, 2000). Dance is a fundamental organizing life principle for many cosmologies where the universe is viewed as a living and moving organism.

Indigenous Value of Dance

Ancient and indigenous peoples have always known the value of dance for the purpose of survival, communion, communication, sexual exchange, aesthetic value, ritual, healing, expression of feelings of meaning, and for release. "...sometimes dance leads to cathartic release; other times dance seems to develop, refine, and completely transform our emotional state" (Chodorow, 1991, p. 41). Dance has always stirred the body, psyche and imagination of its participants as it energizes all biological aspects of living organisms as expression of life force (Chodorow, 1991). It engenders a sense of belonging in a group or intimate dyad (Chodorow, 1991; Stern, 1997). According to Arrien (2000), dance expression creates improvisational life stories for the developing soul and ignites creative participation in life.

Loss of Sacred Dance

It is a particularly great loss to modern civilization that ancient feminine traditions of dance and movement, such as sacred *women's dance*, are no longer preserved and referred to the dancing biological order (Stewart, 2000). Many of these ancient dance rituals, designed by cave dancing foremothers, accelerated natural process of nature for the optimal functioning of the participant (Noble, 1991). Participation in these sacred rites involved and provided women with the means for learning about their own bodily self, intuitive wisdom and creativity in a highly conscious and sacred way. According to McGinnis (1980), "The first dancing, I imagine, was movement which surrendered conscious intentions to felt rhythms, the larger rhythm which we are a part of" (p. 1). Ancient dance rituals furthered appreciation for the pleasures of bodily flowing movements that could evolve into ecstasy or trance. Dancing with flow helped to prepare them for sexuality, instinctual procreation, easy birthing, mothering and bonding to their children. Dancing such as ancient belly dancing helped prepare women for labor:

The Goddess leads us into the spiral of the dance of life. She sends forth the winds, the whirling energies that bind existence into eternal motion through Dance. She teaches her children about movement and change. (Stone, 1976, p. 15)

Biological Importance of Dance-Movement

Movement experiencing allows for biological integration (Egle Engler, 1975). It provides stimulation and feedback to the body to make revision for behavior. Human movement means life to the human being as “life emerges from systems that move, reproduce and evolve (Tyson & Goldsmith, 2004). The metamorphosis from a single fertilized cell to a fully developed baby reveals the intelligence and artistry of dance-movement imprinting, as nature’s creational plan presents a miraculous chain of choreographed events. This earliest embryological development recapitulates the development of man as a species, as the embryo has gills and a tail that is absorbed (Bainbridge, 2000). Movement allows for the first patterning of behavior, the basic organization of the body, its maintenance, regulation and survival. It provides a physical outlet for the body, the emotions, physical and neuromuscular tensions. Movement interactions give the individual a means for physical and energetic feedback for the revision of behavior and for the first experience-dependent learning (Engler-Hicks, 2002). Dance-movement is the first non-verbal language of the baby in utero, the primary medium of communication between the pair (Egle Engler, 1975). Pre- and perinatally exchanged movement flows create contact and communication between mother, pre-nate and infant. Movement experiencing provides rhythmic stimulation of the body and brain of the baby (Engler-Hicks, 2002). It is a basic need of the unborn baby. The dance of mother and infant furthers a relationship of the developing child to other caregivers (Stern, 1977).

ROLE OF ALCHEMY

Alchemy is inherent within mother-infant exchanges as it combines and stirs the trillions of ingredients in new combinations in every moment of first development and provides ongoing organization and integration of systems within systems and between systems (Wolf, 2000, 2001). This word for my constructed metaphor, alchemy, is meant to convey miraculous, fluid, mysterious, chaotic, transmuting and multilayered processes involved in actual creation of the embodied infant and his transforming mother. This first dyadic alchemy may be growth producing or not, depending upon the quality of the materials which are prenatally transported between the two systems through the mother’s placenta. Oxygen, blood circulation and energy are continuously being given and received in the womb (Lipton, 2005; Nathanielsz, 1999).

Ancient Alchemy as Science

The purpose of alchemy, as ancient science, was to create the philosopher's stone or the Great Work for spiritual enlightenment (De Pascalis, 1995). It may be correlated that there is no greater alchemical work than that of being a mother who transforms her body, mind and spirit from pregnancy on to create and to emotionally nurture her child. Ancient alchemists believed that in order to make spiritual gold, the true aim of alchemy, it was important to be an *adept* who could give birth either physically or spiritually (Scully, 2003). This transformation necessitates having a womb, some conscious intent, and/or a psychological container to hold the seed that can be potentially developed to enable endless possibilities. These miraculous results of optimal growth and development of birthing forms are like the alchemical transformation of lead into gold in The Great Work or Opus (Cavalli, 2002). This early alchemy helps to achieve the following human developmental results: "the spiritual realization of our material self and the materialization of our spiritual essence" (Scully, p. 6). The key to understanding alchemical transformation is that it occurs simultaneously on concurrent physical, psychological and spiritual planes (*Alchemy Electronic Dictionary*, 2006). In the ancient text, *Book of Camarios*, written by Cleopatra, a woman alchemist in Egypt during the Hellenistic era, there is emphasis given to the fact that a developing embryo is much like a metal being transformed into gold (De Pascalis, 1995).

Mother and Baby Alchemy

Alchemy appears to be innate to the complex, communicational and integrative dancing exchange. "It is the interactive dance through which we are connecting, weaving spirit and matter into the multidimensional tapestry of life" (Scully, 2003, p. 6). According to Levine and Levine (1996), alchemy in relationship turns "love and chemistry" into the "alchemical" in order to create something new:

When two minds merge in the heart, thought and feelings co-mingle. Two minds forming the warp and woof of a whole new fabric. We weave and dance, dance and weave and somewhere near the heart, thought surrenders to intuition as levels of connectedness and inter-connectedness present themselves spontaneously (p. 73).

Mother and baby appear to have moment-to-moment alchemical reactions to each other as two minds of consciousness and dreaming merge along with their physical blending (Shainberg, 2005). Mother's womb during pregnancy is an *alchemical vessel* and the baby is the *prima materia*, directly affected by what is being experienced on molecular, cellular, energetic, bodily, emotional, intellectual, and spiritual levels in the womb (von Franz, 1980). The developmental psychiatric theories by the clinicians Klein (1932, 1953) and Winnicott (1949), as well as the pre- and perinatal theories of Castellino (2000), Chamberlain (1986), Emerson (1996), Farrant (1985), and Verny & Weintraub (2002b), suggest there exist these early alchemical types of impressions received by mother and baby during conception, pregnancy, birth and bonding. They report clients and patients as having early lasting memories that are cellular, somatic and emotional impressions of being in the womb, birthing, bonding, and of being on mother's breast or in her arms (Farrant, 1985; Klein, 1955). These feelings may be positive, negative and/or ambivalent, and influence later developing feelings and attachment to each other and later attachment styles which can be transgenerationally transmitted (Fonagy, 1996, 1999).

The dynamic of pre- and perinatal mother-infant alchemical dance is about a miraculous transformative process that begins when the first human cell is created at conception and becomes a full flesh and bones infant with a soul at birth. There is also a biologically driven deepening of the mother's transformation for maternal role as her body dramatically changes during pregnancy. Accompanying psychological changes occur post-birth. The alchemical interplay between mother and baby during prenatal and perinatal bonding was proposed to create a secure sense of belonging to enhance future secure attachment (Schore, 2001). Optimal early alchemical body, mind and spirit integration depends upon high levels of blending for the achievement of mother and infant metamorphoses under the best internal and external conditions.

DEFINITION OF PRE- AND PERINATAL ALCHEMICAL DANCE

The unifying metaphor of pre- and perinatal mother-infant alchemical dance combines two powerful words and processes of dance and alchemy to form the central theoretical construct that pertains to the mother-infant symbiotic relationship. This particular metaphor is descriptive of a natural, non-verbal, transformational dance-movement connection between mother and her baby during the

pre- and perinatal period. Specifically, the dynamic of pre- and perinatal mother infant alchemical dance was defined to include prenatal continuous interdyadic movement exchanges, transmission of dyadic consciousness, heart and brain entrainment and the sharing of energy fields (Engler-Hicks, 2002; McCarty, 2004; McCraty, 2003). There are unconscious, energetic, psychological, hormonal, nutritional and biochemical exchanges prenatally and perinatally. This connection includes the intentional cognitive, emotional and environmental impact on the mother's part. This also includes endogenous and exogenous influences upon the dyad and the conscious/unconscious intermingling of their subtle non-verbal cues, signals, feelings and energetic states with bodily skin-to-skin contact felt in utero and provided post birth through touch, handling, breastfeeding, sensory exposure and expressive face-to-face gazing and non-verbal communication with accompanying right brained entrainment (Fogel, 1993; Stern, 1985; Schore, 1994).

Complexities of Alchemical Imprinting

It was theorized that the process of pre- and perinatal mother-infant alchemical dance is quite a complex and subtle relationship blending mother and baby's energies, movement transactions, thoughts, feelings and consciousness. These energies registered in their cells, bodily systems and transforming mind, body and spirits of each dyad, based upon their own personal histories, genetic make-up and unique souls. The alchemy of the conceiving parents, the health, well-being and affect regulation of the pregnant mother serve as template for development, maternal attachment history, transgenerational familial patterning and other uniquely personal and environmental conditions (Bowlby, 1988; Fonagy, 1996; Hofer, 1995; Lipton, 2005; Nathanielsz, 1999). This moving *dancing dialogue* is theorized to be a reciprocal, co-creative connection between the mother and her developing embryo, fetus, and infant, during the bonding phase of infancy (Tortora, 2006). It was hypothesized that this connection occurs on multidimensional, energetic, body-mind, emotional and etheric planes with exchanges of consciousness and heart-to-heart entrainment (Beebe, Lachmann & Jaffe, 1997; Hunt, 1989; McCarty, 2004; McCraty, 2003). Pre- and perinatal educators and clinicians may refer to the proposed unifying metaphor as a psychological term for educational and therapeutic purposes. It is important that they become knowledgeable of the goals and principles of alchemical dance in order to be in alignment with nature's blueprint

for enhancement of optimal psycho- neurobiological growth, learning and mother-infant unity (Lipton, 2005; McCraty, 2003; Schore, 1994).

SITUATING THE RESEARCHER

I realize that my professional training and experience are unique and have supported me in proposing a new theoretical construct to serve the burgeoning fields of prenatal and perinatal psychology and somatic psychology. I received my B.A. in psychology and dance from Mount Holyoke College in 1970 and also received my M.A. in dance therapy from U.C.L.A. in 1975. I had a private clinical practice in dance therapy for thirty years, working with all age groups. I taught dance therapy theory to undergraduates at Washington University in St. Louis for twenty years. I pursued my doctoral study in prenatal and perinatal psychology from Santa Barbara Graduate Institute after my practice focused upon mother-infant psychological interventions.

I have always felt comfortable bridging the arts and sciences, inspiring my interest in the art and science of mothering. It makes sense to me that as a dance therapist/prenatal and perinatal psychology educator now, I would add new somatic and psychological concepts to Daniel Stern and other theorists' concepts about the biological and psychological need for the mother-infant relationship as dance. I have recently contributed the first chapter, entitled "Moving into Belonging" about mother-infant dance for the book, *The Body Can Speak*, edited by Annelise Mertz. It provided theory for educational practice. I have developed educational curriculum for schools in aesthetic education and movement education as well as for my own Baby Bright infant curriculum.

JUSTIFICATION OF THE STUDY

This theoretical work bridged the essence of sacred dance with the science of alchemy through the vehicle of metaphor to achieve a new synthesis of knowledge related to the natural and creational patterning dynamics of first human life conceived of as alchemical dance. Generations of maternal, feminine, and spiritual wisdom about the art of mothering was related to new scientific knowledge to acknowledge the richness and complexity of the pre- and perinatal mother-infant dance. It filled a gap in the psychological literature. Daniel Stern (1977), a prominent child psychiatrist and infant researcher, was the first to write about mother-infant dance as an important series of physical and psychological maternal caregiver

functions for the perinatal period from birth through bonding. This is a process that naturally teaches the infant about himself and relationships through what Stern called, “this biologically designed choreography which will serve as a prototype for all later personal exchanges” (p.1). Stern’s articulation of this mutual communicative dance through the eyes, face, hands and touch was a seminal contribution to knowledge of dynamics fostering infant development and attachment. He supported his own theoretical views by doing evidence-based research that filmed and analyzed each moment-to-moment mother-infant interaction. These films documented and allowed analysis of dyadic growth or missteps in communication. This theoretical dissertation elaborated upon his initial conceptualization of postnatal mother-infant dance. My ideas, based on interdisciplinary scientific advances, extended the dance concept to the prenatal period. It was postulated that there exist multidimensional exchanges between the pair that include energetic as well as physical and telepathic properties with the further complex and subtle exchanges of consciousness and brain and heart entrainment (Farrant, 1985; Hunt, 1989; Ho, 2003; McCarty, 2004; McCraty, 2003; Schore, 1994). Also the patterning of human life through alchemical dance dynamics was considered and suggested as nature’s blueprint for early human embodiment and development, fostering co-creative dyadic unity for survival, bonding and mutual attachment. Optimistically, this creates a piece of theory that can be immediately contributed to Stern’s theory, expanding the value of dance processes that promote psycho-neurobiological growth, development for the patterning of behavior, personality and attachment.

SCOPE AND LIMITATIONS

The conceptual foundations for this theoretical dissertation were scientifically broad in scope to reveal essential information and/or timeless truths about the essential dynamics of dance and alchemy as nature’s blueprint for early human mothering. This dynamic is meant to foster the appropriate conditions for optimal infant development, co-creative dyadic unity and transition to maternal role. A theoretical construct was intentionally created using a unifying metaphor of pre- and perinatal mother-infant alchemical dance to advance conceptual foundations for prenatal and perinatal psychology and somatic psychology. This theoretical dissertation presented ancient and scientific thinking about the possible hidden dance-movement dynamics of first human creational patterning. Specifically, this

subject spanned millions of human generations. Sacred dance, alchemy and sacred geometry joined with the art and science of early mothering and mother-infant relating to build a metaphorical schema of pre- and perinatal mother-infant alchemical dance. It addressed new visions of reality unfolding as mother and baby appear to be multidimensional biosocial beings with awareness of underlying quantum, chaos and field theories. It postulated that the “dance of life” (Ellis, 1923) is on a continuum. The alchemical dance of mother and infant holographically reflects the larger cosmic dance. It added and elaborated the alchemical dance dimensions of prenatal mother, embryo and fetal connections to extend Stern’s theory of postnatal dance. It presented introductory goals and principles about the dynamics of pre- and perinatal mother-infant alchemical dance and added to knowledge about the complexity of the mother, pre-nate and infant relationship that need to function as a co-creative, symbiotic unit during the pre- and perinatal period. It provided new language using a unifying metaphor of pre- and perinatal mother-infant alchemical dance to refer to a rhythmically flowing, non-verbal, symbiotic dancing dyad from conception through the bonding period.

Also, this theoretical dissertation did not purport to have exhaustively reviewed all of the literature on the subject pertaining to mother-infant dyadic relations during the pre- and perinatal period. Certain prominent scientific theorists were chosen over others to present the theoretical claim. This dissertation did not include findings from infant research studies. It was a current review of the chosen theoretical literature which may change when more research is conducted in the future. Also, a full formal theory was not developed, but a theoretical construct was conceived, able to stand on its own or perhaps melded with a larger piece of theory.

CONCLUSIONS

The theoretical construct of pre- and perinatal mother-infant alchemical dance is a contribution that adds to developmental knowledge in psychology in general as well as contributes to conceptual foundations to the fields of prenatal and perinatal psychology (PPN) dance therapy and somatic psychology. This will help to build conceptual foundations and solidify them as knowledge-based disciplines in the future. This core knowledge included information about dance patterning dynamics viewed as alchemical dance shared between the mother, pre-nate and infant. Nature’s blueprint for human creation, based on movement dynamics was

hypothesized to begin at conception or even before. This movement patterning generates life at the beginning of the human developmental continuum to ideally build energetic coherence between the pair, psycho-biological attunement, and optimal development of the infant brain and nervous system under good conditions. It was proposed that the goals of the dynamic of pre- and perinatal mother-infant alchemical dance are:

1. To initiate life, organize and pattern human embodiment, support labor and childbirth, and to nurture a sense of belonging in relationship.
2. To serve as Nature's intelligent blueprint for the pre- and perinatal period using an archetypal energetic dance design.
3. To unify the pair symbiotically, visibly, and invisibly, to function as a greater whole.
4. To provide a medium for mother-prenate-infant connection, information, first experiencing, ordering, interaction, organization, communication, communion of consciousness and feedback for the revision of behavior.
5. To interact on multidimensional levels of energetic, mental, emotional and spiritual/etheric planes for full connection.
6. To provide cohesive nonlinear patterning for mutual self organization and development.
7. To distinguish prenatal and perinatal alchemical dance differences and characteristics.

The principles of the alchemical dance as outlined in the dissertation are:

1. The mother-infant relationship during the pre- and perinatal period functions as an alchemical dance.
2. The primary functions of alchemical dance are to achieve mother-infant unity and this secondarily promotes life and embodiment and mother-infant communication for attachment.
3. This process begins from conception or before, and extends through the bonding period.
4. Principles of alchemy are inherent to dyadic dance.
5. Alchemical dance occurs on multidimensional levels between mother/embryo/fetus/infant and on cognitive, physical, emotional, energetic, and spiritual planes.
6. It is a co-creative process that is unique to each dyad.

7. It is characterized by non-verbal, fluid, energetic, physical, rhythmical creative/improvisational transactions.
8. There is a difference in emphasis of characteristics between the prenatal and perinatal period as prenatal dance is hidden, intrapsychic, rhythmically flowing; perinatal dance is more overtly communicative, with face-to face interactions.
9. The quality of alchemical dance depends upon the coherence of the state of the mother on various levels. She serves as the template for infant development.
10. Higher levels of alchemical synthesis occur when the mother is consciously aware of her input and internal/external sources that affect her actions, thoughts, and belief.

IMPLICATION OF THE STUDY

The Importance of a Dancing Dyad

The implications of this theoretical dissertation suggested that new mothers need to be physically active to foster motor learning and rapport. In order to make a strong and secure bond of attachment, they must be emotional available to the developing infants on many bodily and feeling levels (Bowlby, 1969). Thus, the educated mother and mother-to be have the power to affect great biological and psychological outcomes on the optimal growth and development of her infant, with knowledge about the art and science of mothering based upon dance. Specifically, a new paradigm for modern mothers and parents would create unprecedented flowing and coherent movement opportunities during the pre- and perinatal period, such as:

1. Relearning undulating movement flow for mother-infant nurture.
2. Awareness of energy that is open and flowing (versus energy blockages).
3. Focus on internal bodily sensing of maternal instincts.
4. Recognition of specific non-verbal states of infant emotional well-being or distress.
5. Practice of reciprocal non-verbal communication skills.
6. Acknowledgment of interactive synchrony and affect regulation.
7. Switching to right-brain (versus left-brain) modes for mother-infant brain entrainment.
8. Opportunity to be in movement synchrony and to make

interactive repairs.

9. Need for age appropriate creative play focusing on motor learning and communication on multiple levels of interaction.
10. Knowledge of prenatal dance requirements and differentiations from perinatal dance.

Need for New Educational Models

This theoretical dissertation postulated that new forms of educational mothering programs need to be created, beginning before conception and moving beyond labor/birthing programs in hospitals. These programs need to be movement and dance oriented, based upon the core principles of alchemical dance and reflecting the new energetic paradigm. This new pedagogy provides a broader understanding of the art and science of early mothering. Conscious developmental parenting information will include ways for parents, caregivers, and particularly the mother, to parent with clear intent, to serve the function of choreographers and alchemists at critical periods, and to learn about her important role as the physical, mental, emotional and spiritual vessel from which her baby is birthed.

Need for Further Study

This theoretical knowledge of pre- and perinatal alchemical dance can be used for several purposes:

1. To initiate further research and study adding to or revising its theorized claims.
2. To provide a rationale for new models of conscious educational programming starting before conceptions, and for political agendas benefiting the lives of future generations.
3. To provide a means for the dissemination of the theory.
4. To expand the conceptual base of pre- and perinatal and somatic psychologies.

In conclusion, these newly proposed models of preventive educational programs, based on dance-movement patterning, may heighten humanity's future evolution as "there is only the dance" (Eliot, 1943, p.117). They may provide the means to preserve the human race with the full remembrance of the body, mind and spirit benefits from participating actively in the natural dance of life that includes connection to a vast dancing intelligence in the universe. The need for this dynamic for early mothering may exceed all modern

cultural norms and sedentary ways. Thus, pre- and perinatal mothering conceived as alchemical dance is both an ancient and holistic idea for the twenty-first century. This co-creative dyadic dance is meant to be an intimate dance of wholeness and union leading to new levels of being and behavioral integration. Pre- and perinatal mother-infant alchemical dance supports coherent, heart-to-heart and reflective dialogue which may well become the foundation for future attachment, learning, adult health and psychological patterns (Bowlby, 1969, 1973, Fogel, 1993; McCraty, 2003; Nathanielsz, 1996, 1999; van Os, Jones, Lewis, Wadsworth & Murray, 1997).

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