

Maternal Fetal Attachment: Can Acceptance of Fetal Sentience Impact the Maternal-Fetal Attachment Relationship?

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Abstract: Research into maternal-fetal attachment is increasing yet has not yielded substantive scientific results due in part to the lack of a clear definition of the word “attachment.” Furthermore, a controversy currently exists in the literature with debate focused on the use of the word “attachment” as referenced by John Bowlby when discussing the maternal-fetal relationship. Part of this debate involves the presence or lack thereof of true reciprocal interactions between mother and fetus with the onus on fetal consciousness—is the fetus a sentient being able to consciously interact with its mother? Further variables impacting the controversy involve the lack of a concise definition of consciousness and fetal sentience; there is no agreement on fetal consciousness. Current research demonstrates that fetuses perceive pain, react to touch, smells, and sounds, and display different facial expressions in response to external stimuli. Yet, these reactions may be preprogrammed with subcortical nonconscious origins—they are not universally considered true conscious cognitions. Studies investigating fetal brain development have demonstrated that fetuses do not acquire brain structures necessary for consciousness until 24 weeks gestation age; however, studies have not ruled out the existence of a subcortical consciousness. This paper will conduct a brief literature review of maternal-fetal attachment and fetal consciousness in order to consider fetal sentience as a viable variable impacting the potential for reciprocal interactions, thus supporting use of the word “attachment” in maternal-fetal attachment. Implications for Maternal-Fetal Attachment interventions are also discussed.

Keywords: Attachment, Maternal-Fetal Attachment, Fetal Sentience

Over the past 25 years, research into maternal-fetal attachment (MFA) has increased; yet, little is still known about how it develops (Salisbury, Law, LaGasse, & Lester, 2003). Furthermore, scant scientific data exist regarding women’s feelings and thoughts about fetal relationships (Salisbury et al., 2003). The apparent lack of correlational and comparative research has been associated with

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methodological problems including an “inadequate operational definition of the construct” (Cannella, 2005; Salisbury et al., 2003, p. 1701). In short, there is “no universally agreed upon definition of the term attachment” (Condon, 1993, p. 167), and the “components or dimensions of prenatal attachment” necessary for research to gain understanding “depend on the definition used for the construct” (Doan, Cox, & Zimmerman, 2003, p.173).

The concept of MFA is considered relatively new even though the notion that a woman’s feelings, thoughts, habits, and emotions impact her unborn child was introduced as early as 1938 (Chamberlain, 2003). Deutsch (1945) is most often cited as the first to conceptualize the mother-fetus relationship with Winnicott alluding to prenatal attachment as well (Condon, 1993). Today, terms such as maternal-fetal bond, maternal-fetal tie, and maternal-fetal attachment (with antenatal and prenatal also used in place of fetal) are used to denote the interaction in question. However, use of the words “attachment” and “bond” are being contested in the literature. According to Van den Bergh & Simons (2009), “the meaning of the term attachment as defined by Bowlby (1959) and Ainsworth (1972) cannot be transferred to the prenatal life period” due to a lack of reciprocity between the mother and her fetus (p. 115). Laxton-Kane & Slade (2002) also emphasize that pre and post birth experiences require different conceptual frameworks due to a lack of reciprocity between the mother and fetus despite their contention that the concept of MFA originated from attachment theory. Walsh (2010) concurred citing that interactions noted between maternal-fetal dyads do not behaviorally reflect the attachment scenarios Bowlby (1959) introduced. The concept of MFA may not align with attachment theory; however, in order to study the process and its impact and determine whether it is attachment or not, there needs to be clearly defined terminology.

MFA is a complex concept and currently difficult to study. The controversy over the usage of the words “attachment” and even the word “bond” appears to be related to a sense of maternal-fetal reciprocity (Laxton-Kane & Slade, 2002; Walsh, 2010). From the point of view of this paper, there appears to be something, or rather, someone, missing. According to Cannella (2005), no research is being done on the variable of fetal consciousness in MFA. The human fetus, in this regard, is still not considered a sentient being capable of cognitive perceptions, sensorial learning, memory, and reciprocal interactions (Chamberlain, 2003, 1994/2011).

In order to consider fetal sentience a viable variable in MFA that impacts reciprocal interactions (in turn supporting the word

“attachment” in MFA), this paper will first examine a brief literature review of MFA and its potential impact on fetal development. The second section will consider the current conundrum associated with fetal consciousness. And the final section will discuss implications for MFA interventions based on the acceptance of fetal sentience.

Literature Review

Maternal-Fetal Attachment

In this section I will review literature that argues against using the word “attachment” in MFA.

The concept of prenatal attachment may owe its frame to attachment theory, but a review of Bowlby’s (1959) original work revealed that he limited the term “attachment” to behaviors typically noted between parent and child within the behavioral system responsible for it (survival was a strong motivating force) (Walsh, 2010). Bowlby viewed the nature of a child’s bond to its mother as instinctual responses designed to bind one to another, such as clinging and crying (Bowlby, 1959).

Because attachment differed from dependency, Bowlby (1959) developed “a new theory of motivation and behavior control” (p.18). He defined attachment in terms of “behaviors that supported proximity to an attachment figure (*the mother*) as a predictable outcome and whose evolutionary function was protection of the infant from danger . . . ” (Bowlby, 1959, p. 20).

Beyond Bowlby, attachment has been viewed as an emotional tie, a psychological bond to a specific object, a unique and affectionate relationship between a pregnant woman and her fetus that begins *in utero* and continues after birth (Bretherton, 1992; Condon, 1993; Doan et al., 2003; Salisbury et al., 2003). Rubin (1976) aligned MFA with post birth, observable behaviors calling it an immediate bond between a mother and her newborn directly resulting from their prenatal experience. And Cranley (1981) defined MFA as “the extent to which women engage in behaviors that represent an affiliation and interaction with their unborn child” (p. 282).

It appears that MFA is an abstract “multidimensional concept expressed through a variety of behaviors, attitudes, thoughts, and feelings with different expressions occurring at different stages of gestational development and employing individual factors” (Doan et al., 2003, p.173).

In order to understand MFA, maternal-fetal relationship (MFR)

scales were designed that primarily measured pregnancy planning, the strength of the marital relationship, gestational age, and maternal depression and mood. Current literature (Alhusen, 2008; Cannella, 2005; Doan et al., 2003; Van den Bergh & Simons, 2009) states that the foundational concept of MFR scales is “based on the idea that the relationship with the fetus is manifested in behaviors, attitudes, thoughts and feelings that demonstrate care and commitment to the fetus . . .” (Van den Bergh & Simons, 2009, p. 116).

The word “care” is part of the current controversy. Walsh (2010) contends the terms “attachment” and “bond” are misleading because attachment as Bowlby referenced it refers to care-seeking not care-giving; furthermore, she claims care-giving is reciprocal to attachment in that it provides protection, comfort, and care (Walsh, 2010). Care-seeking appears to be unidirectional whereas care-giving is bidirectional, thus the onus on reciprocity in attachment terms.

MFA: The Impact on Fetal Development

It appears that a bi-directional, reciprocal, multilevel information exchange may exist between a mother and her fetus with far reaching effects on the health of the fetus and newborn child. Aside from stress levels and toxins passing from mother to fetus, genetic information and cellular memories are transferred and stored as prenatal impressions in cellular memory (DiPietro, 2010; Wade, 1998). Although researchers are unsure how the bi-directionality works (neural connections between mother and fetus do not exist) (DiPietro, 2010), these interactions and the resultant memories may possibly imprint what has been called the fetus’s “collective unconscious” (Tashaev, 2007).

Chamberlain (1994/2011) suggests that patterns of intimate relationships and mental expectations about life, including one’s sense of self, develop prenatally. The origins of psychopathologies and somato-psychic origins of character structure have also been traced to conception, embryonic, fetal, and birth experiences. Sequi (1995) aligned gestational ages with emotional states of adaptation (character structures); he noted that within 10 to 12 days of fertilization, fetuses of mothers unable to emotionally support them registered feelings of abandonment and a lack of protection that threatened their survival, and fetuses conceived by mothers who were not planning on a pregnancy sensed and retained feelings of rejection during the pregnancy and throughout life.

Prenatal memories tend to be the most formative psychologically and physiologically because they occur first (Emerson, 1996). These

experiences are retained unconsciously in cellular memory and as such are stored and retrievable throughout the entire body despite the lack of actual brain mechanisms for memory in place (Chamberlain, 1994/2011; Emerson, 1996; Sequi, 1995; Tashaev, 2007). Study participants have accurately recalled events from conception through birth including behavioral details and affective states which have impacted their lives (Chamberlain, 2003, 1994/2011; Tashaev, 2007).

Despite the contention that prenatal and perinatal experiences impact MFA, Laxton-Kane & Slade (2002) assert that “prenatal attachment requires the recognition of another to be attached to” (p. 256). Most MFA scales reference the fetus as an internalized representation in the mother’s mind, a mental image that consists of a mixture of fantasy and reality. This “image” has been equated as attachment. The mother appears to be “attaching” to an image of her own creation, not the actual being developing in her womb. The major view remains today that the fetus is not equipped to learn, remember, make sense of any experience, or interact reciprocally (Chamberlain, 2003).

Consciousness

There is no consensus as to whether the fetus is a conscious sentient being or not (Lagercrantz, 2007, 2009). Some researchers investigating fetal consciousness are divided within their own writings such as Emerson (1996), who traditionally maintains that prenatates are conscious beings and writes that their behaviors in utero will impact their entire life, also notes that prenatates are [considered to be] unaware and rarely regarded as human beings. Others, like Chamberlain (1994/2011), are clear that babies learn and dream, are sensitive and aware, and are social and communicative; he states that “infant sounds, gestures, waving, and pointing are intentional and always social in nature” (p. 45). Furthermore, he asserts that the fetus is a sentient being that can communicate with its mother which impacts its emotional well being and birth experience (Chamberlain, 2003).

Lagercrantz (2007) defined consciousness as the “awareness of the body, the self and the world” and noted that “even the preterm infant fulfills some criteria of being conscious; it can be awakened, show emotions and interact socially” (p.327). Yet, there is no definitive acceptance of fetal consciousness. Lagercrantz and Chamgeux (2009) say fetuses are unconscious due to endogenous sedation; Platt (2012) states there is no evidence that fetuses lack awareness and that the notion that fetuses are sedated in the womb is “simply not true” (F236).

Current research demonstrates that fetuses perceive pain, react to touch, smells, and sounds, and have different facial expressions when responding to external stimuli (Chamberlain, 2003). Yet, some say these reactions are preprogrammed and may have subcortical nonconscious origins—they are not true conscious cognitions (Lagercrantz & Chamgeux, 2009) because fetuses do not develop brain structures necessary for consciousness until 24 weeks gestation. Researchers investigating infant recognition of the maternal face at birth despite never having seen it have studied early subcortical structures e.g., the fusiform area for face recognition, as well as the structures where consciousness derives, namely the cingulate gyrus. New advances looking at the brain are resulting in a separation of consciousness as a phenomenon rather than simply the result of brain activity (Tashaev, 2007). This is a profound statement. Chamberlain, in personal communications, has long maintained that consciousness does not depend upon brain structures. Furthermore, some researchers have not ruled out subcortical consciousness (Lagercrantz & Chamgeux, 2009; Tashaev, 2007). Cognition and cognitive capacities are slowly being viewed as part of our innate skill set (Chamberlain, 2003).

Discussion

A Possible Definition for the Maternal-Fetal Attachment Relationship

Life in the womb is interactive, with maternal-fetal relationships ongoing twenty-four hours a day, seven days a week (Chamberlain, 2003). It may stand to reason that these relationships are multi dimensional with attachment being but one part that can be subdivided into three categories affording a clearer definition (Shieh, Kravitz, & Wang, 2001):

- cognitive attachment – conceptualizing the fetus as a person, attributing characteristics to the fetus – wanting to know the fetus
- affective attachment – emotional accessibility, interaction with the fetus, affection – feeling pleasure when thinking about or interacting with the fetus
- altruistic attachment – maintaining proximity, imagining oneself as a parent, preparing for the baby’s arrival – wanting to protect the fetus

If the maternal-fetal dyad is the origin of human attachment as some contend, then “the fetus needs to be regarded as an active agent

in its own ontogeny and pregnancy outcomes” (DiPietro, 2010, p. 34). A “growing list of studies demonstrating prenatal learning and memory for stories, music, voices, specific words and sentences and particular languages” (Chamberlain, 2003, p. 39) is influencing pregnant mothers; many are making baby albums using ultrasound pictures, playing music and reading to the fetus, playing hide and seek games, and participating in mother-baby classes before birth. An embodied relationship is forming as mothers connect with their babies’ presence and learn who they are *in utero* outside their mentalizations (O’Leary, Warland, & Parker, 2011).

Implications for Maternal-Fetal Attachment Interventions

In order for the word attachment to fit this process, perhaps it is time to change the focus from “when the baby arrives to the baby is already here and I am in touch with this baby” (O’Leary, et al., 2011, p. 2). This attitude would make room for interventions and programs such as Parenting Your Baby Before Birth classes (J. O’Leary, personal communication, April 9, 2012) and teaching Prenatal Bonding skills (Schroth, 2010). Mothers in these classes learn how to connect with what their fetus is feeling, needing, and what it feels is threatening and dangerous using mindful awareness skills to create a conscious connection with the bi-directional exchange of information innately occurring. They learn how to participate in reciprocal interactions responding to their fetus’s communications. According to Schroth (2010), “babies who are communicated with *in utero* feel themselves to be seen and heard at a deep level, this makes them feel respected as they are and for their unique personality and situation” (p. 2). With awareness and acceptance of maternal-fetal reciprocity, the word “attachment” assumes new significance by not only impacting the maternal-fetal relationship and fetal development, but also by bringing the foundation for this evolving infant-maternal attachment relationship post birth.

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