Frank Lake's
Maternal-Fetal Distress Syndrome:
- An Analysis -

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What follows is part of his dissertation on Lake's work

CHAPTER 2

THE "MATERNAL-FETAL DISTRESS SYNDROME"

A. The Definition of the Paradigm

1. "The Womb of the Spirit"

Frank Lake asserted that the essence of the Maternal-Fetal Distress Syndrome could be found in the observation that "powerfully impressive experiences from the mother and her inner and outer world . . . reach the fetus, defining its relation to the intra-uterine reality in ways that persist into adult life."[1] Defined in this manner, the MFDS is really a part of a larger model.[2] It is essentially the description of a negative ("distress") reaction to certain prenatal experiences. But Lake's theory encompassed not only the negative responses but also the positive. Thus, the M-FDS as described by Lake goes beyond merely a description of the "distress" reaction to accommodate the complete mechanisms within which the negative reactions can be understood.

The final formulation of the M-FDS came relatively late in Lake's thinking and can only be found in his later works[3] encompassing the final four years of his life. Writing during this period, Lake stated that most of his professional psychiatric career had been spent working "in a half-light, oblivious to the earliest and severest forms of human pain. "[4] This "half-light" was caused by the assumption that "the nine months of foetal development in the womb were free of significant incident, a blank without

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[1]Lake, 'Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders,' 5

[2]Roger Moss writes the following: 'The Maternal-Fetal Distress Syndrome elaborated by Frank Lake is a key component of the theory, and one of its most testable hypotheses. But it remains only a part of the paradigm." (Roger Moss, "Review of Research: Frank Lake's Primal Integration Workshops," [Oxford: Clinical Theology Association, St. Mary's House, March 25, 1984]).
The 'paradigm' referred to by Moss here is what he called "Primal Integration," which essentially takes the understandings of the M-FDS and then seeks to apply them in a therapeutic re-experiencing of the original fetal experience, positive or negative.

[3]"Studies in Constricted Confusion: Exploration of a Pre- and Peri-natal Paradigm" (1979-80); Tight Corners In Pastoral Counselling (1981); With Respect: A Doctor's Response to a Healing Pope (1982), along with other articles, papers, transcripts and speeches from this period.

[4]Lake, Tight Corners in Pastoral Counselling. vii.

possibility of psychodynamic content."[5] Lake was to eventually conclude the opposite, that fetal life is "not drifting on a cloud, [but as] eventful as the nine months that come after birth. The foetus is not unaware of itself, or of the emotional response of the mother to its presence, but acutely conscious of both and their interaction."[6] While Lake was not dismissive of the potential suffering of the post-natal experience, he affirmed that "the soul-destroying pain and heart-breaking suffering that comes from the distress of the foetus in the womb when the mother herself is distressed" is indeed at the root of the "severest forms of human pain."[7] This pain occurs during the first trimester of intra-uterine life. Lake stated that "these first three months after conception hold more ups and downs, more ecstasies and devastations than we had ever imagined."[8]

B. The Development of the Paradigm

Lake's final conclusions with regard to the M-FDS resulted from a process of gradual development. The component, if incomplete, parts of the theory can be readily discerned early on. An evolution of sorts takes place, particularly with regard to the definition of the critical period of maternal-embryo/foetal/child interaction. What remained essentially static throughout this evolution was the central assertion stated above; namely that a mother's behavior and emotional state and the environment which this creates for the emerging child, are determinative of that child's later emotional and behavioral state. Given this constant, there are at least four "phases" or steps in the process that eventually gave birth to the final formulation of the M-FDS.[9]

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[5]Lake, "Mutual Caring." 57-58.

[6]ibid., 58.

[7]Lake, Tight Corners in Pastoral Counselling, viii.

[8]ibid.

[9]Roger Moss delineates three main "phases of investigation":

1. birth and peri- natal experience;
2. middle and late pregnancy;
3. the first trimester.
(Roger Moss, 'C.T.A. Occasional Paper #2: Frank Lake's Maternal-Fetal Distress Syndrome and Primal Integration Workshops," [Oxford: Clinical Theology Association, St. Mary's House, December, 1953] 7-8; and Roger Moss, "Frank Lake's Maternal-Fetal Distress Syndrorne: Clinical and Theoretical Considerations," 202-203). Thus, Moss does not delineate a separate "phase" relating to infancy or early childhood. Even though Clinical Theology discusses BOTH birth and the first nine months of life (ie. "the Womb of the Spirit") as crucial, I believe that Lake at that early stage was primarily focused upon early childhood, with birth as its beginning point, as the crucial period. I believe that he gradually changed this early position and settled on a second distinct position of birth itself as the crucial experience. As evidence I cite 2 passages in which Lake makes a distinction between the two:

> **Until recent years we attributed this affliction mainly to the anguish of the baby who is not bonded to the mother after birth, but is kept waiting in a loneliness which becomes a panic, then a horror, and then, beyond a certain limit, a dreadful splitting, falling-apart and fragmentation of the whole person, body, soul, and spirit. We early recognized that there were also limits to the amount of pain that could be borne in the actual process of birth." (Lake, "Report from the Research Department #2," 3). We find that it is not sufficient to look back, to find the origins of significant trauma, of consequent fixated pain, and therefore of the personality reactions that represent flight from that pain, only so far as the first year of life, or even to the traumas of birth. Things go 'wrong -or go well- much earlier than that." (ibid., 1).**

"The Womb of the Spirit"

As a classically trained psychiatrist, Lake early on affirmed the importance of arly infancy, the "first half of the first year of life."[10] However, looking back on this early period, Lake later wrote that he stuck his "neck out 23 years ago in affirming birth and the early months as powerfully relevant occasions of stress."[11] In distancing himself from the Freudian emphasis upon the cruciality of the Oedipal/phallic developmental stage, Lake wrote the following in the Introduction of Clinical Theology:

> **I have not done justice here to the extensive elaboration of sexual psychopathology which characterizes classical Freudian writing, not because I do not agree with these findings, for they are in accord with my own experience, but because I believe them to be secondary rather than primary. The neo-Freudian modifications of analytic theory have brought the era of significant trauma to within the first year of life, and it is these to which my attention has been drawn. Indeed, Otto Rank's postulation of birth trauma as the first significant source of personality deviation has been abundantly confirmed in many cases I have studied.[12]**

During this first phase, Lake still held the assumption that "the nine months of fetal development in the womb were free of significant incident, a blank without possibility of psychodynamic content."[13] But here we already observe the major

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[10]**Lake, With Respct, 42.**

[11]**Lake, Tight Corners in Pastoral Counselling, ix.**

[12]**Lake, Clinical Theology, xvi.**

[13]**Lake, "Mutual Caring" 57-58.**

components of the later formulation of M-FDS: the primacy of the mother- embryo/fetus/child dyad, the existence of repressed memories from early life, the effect of these experiences on the adult personality and his/her present functioning, the ability to "relive" these experiences, and the existence of transmarginal states. Indeed, at this early point, the later definition of the M-FDS could be slightly modified and still hold true:

> **The behavioral reactions of a mother affect her child in ways that contribute to its perceptions of itself and of its environment and these perceptions persist into adult life.**

In the Introduction of a pamphlet on personal identity written in the latter part of the 1960's, Lake wrote that "the very earliest experiences which can lead to disturbed feelings of identity . . . take their origins in the distresses of babyhood."[14]

This is illustrated clearly in a schematic representation found in Clinical Theology titled "The Womb of the Spirit" in which he writes that "the analogy of the growth of the baby in the womb is an apt one".[15] This "chart" used Lake's Dynamic Cycle as the paradigmatic basis for making an "ontological analysis of the normal Mother-Child relationship."[16] Lake describes the dynamics of each phase, two input and two output, in terms of the effect upon the emerging infant. Lake's analogy of fetal life, and indeed, his use of the term "womb of the spirit" prefigures his later theoretical emphases.

With regard to the first phase, the so-called genesis of "being", he writes that just as "physical being is the result of nine month's response by the fetus to the supplies of the Physical Being from the Mother" so "personal and spiritual Being is the result of nine months, (more or less) response of the baby to supplies of personal and spiritual being from the mother."[17] Whereas the placenta and umbilical cord serve as the conduits for nourishment during the period of the "womb of the physical", so there

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[14]Frank Lake, "The Origin and Development of Personal Identity," Foreword. Clinical Theology Association pamphlet #4; quoted in Carol Christian, ed., In the Spirit of Truth 43.

[15]Lake, "The Womb of the Spirit,' chart N.b., in Clinical Theology.

[16]ibid.

[17]ibid.

is the "umbilical cord of sight" by which spiritual being passes from the mother to the child during the period of the "womb of the spirit." If all goes well, this relational element allows the baby to "come into being as a person, gaining self-hood and the sense of identity by responding to the light of her [his mother] countenance,"[18] just as consistent physical nourishment during the prenatal period will allow the fetus to be born physically healthy. There is a similar parallel with the constriction of supplies.

If the supplies of "physical being from the mother are constricted, the foetus will be distressed; if blocked, it dies."[19] If "being" supplies are constricted, there is a diminishment of personal and spiritual "being" of the infant leading first to panic and then to dread; if all supplies of "being" are removed", "non-being" results. The second input phase is what Lake refers to as "well-being", resulting from the ongoing sustenance of being. Here the communication of "well-being" is achieved simultaneously in both its physical and spiritual dimensions. Lake writes that "not only is there the obvious inflow of physical sustenance in the form of milk when the child is at the breast, there is an equally important flow of sustenance from the mother to the baby on every level of personality."[20] Lake specifically mentions satisfaction, joy, fullness, and graciousness.[21]
The two output stages of status and achievement are directly dependent upon the events of the input stages. Lack of "being" and "well-being" ultimately results in adults who manifest these "lacks" in the form of various neurotic and psychotic maladaptive dysfunctions. The description, etiology, dynamics, care and cure of these various manifestations takes up the bulk of Clinical Theology. It is fair to say that this material retained its validity even after Lake's thinking about the M-FDS was formulated. The exception would be the timing of the etiological experiences. Speaking immediately prior to his death in 1982, and referring back to the nine month period of early infancy, namely the "womb of the spirit", Lake noted:

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[18] **ibid.**

[19] **ibid.**

[20] **ibid.**

There is one statement . . . which obviously now demands correction [and it is this]: 'The roots of all the major neuroses -- hysterical, phobic, conversion, schizoid, anxiety-depressive and obsessional -- derive from separation anxiety in this phase.' Some cases of each do . . . but the evidence . . . indicates that, if we are talking about the main roots of personality disorders . . . , it is [to the first trimester that] we must look and not later.[22]

As stated earlier, Lake clearly owes a intellectual debt to both Freud and Melanie Klein.[23] Both emphasized the primacy of the events of early childhood for later psychodynamic functioning. But when it came to an investigation beyond this period, Lake contends that the orthodoxy of both rendered the "investigation of life, distress and near-death in the womb . . . a 'no-go' area. The obvious distress of much intra-uterine existence has been assumed to have no emotional consequences. By definition, nothing could happen there to interest the analyst."[24] However, Lake saw both Freudian and KIeinian theory pointing beyond itself to indicate the importance of prenatal life for later psychodynamics.
For instance, Lake noted that Freud's death instinct is present, by definition, at conception and thus must be functioning in opposition to the life-wish both pre- and post-natally. Freud himself "opened the door" to the thinking when he stated in Inhibitions, Symptoms and Anxiety that "there is much more continuity between intra-uterine life and the earliest infancy than the impressive caesura of the act of birth allows us to believe."[25]

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[22]Lake, "Mutual Caring," 25, quoted by Carol Christian, ed., In The Spirit of Truth, 48.

[23]Melanie Klein, Envy and Other Works (New York: Delacourt Press, 1975); Melanie Klein, Love Guilt and Reparation and Other Works (New York: Delacourt Press, 1975).

[24]Frank Lake, "The Significance of Birth and Prenatal Events in Individual, Family and Social Life," (Nottingham: Clinical Theology Association, Lingdale, Lingdale Archive #057), S3.

[25]Sigmund Freud, Inhibitions Symptoms and Anxiety (London: Hogarth Press, 1936), 109.

Similar to Freud,[26] Lake sees Klein's Object Relations as also "opening" the door" slightly. Klein's influence on Lake at this time is quite pronounced. Not only is he in full agreement with Klein of the cruciality of the mother-child/infant dyad, but Klein's contention that since the child experiences frustration and gratification from the same source, usually the mother, that this gives rise to a perception of objects as "part objects." This condition of "splitting" the good and bad "part-objects" results in Klein's "paranoid-schizoid position." It isn't until the latter part of the infant's first year of life that she begins to reconcile the two, and this realization results in the depressive position.

While Lake obviously was influenced by Klein, and would see KIeinian theory pointing beyond itself, he critiques Klein for failing to develop the logical implications of her conceptualizations. Lake cites the following KIeinian comment as emblematic: "I have suggested" she wrote, "that the struggle between life and death instincts enters into the painful experience of birth and adds to the persecutory anxiety aroused by it."[27] That Klein didn't proceed then to examine in more depth birth trauma and pre-birth trauma, seems, to Lake, inconsistent.

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[26]Lake makes much of Freud's initial embrace of Rank's book The Trauma of Birth: "It is the most important progress since the discovery of psychoanalysis." Lake further contends that Freud "yielded to the protests of Abraham, Jones and others of the core group, inflaming his fears 'lest the whole of his life work be dissolved by the importance attached to the trauma of birth"' and turned agalnst Rank. Later, Freud wrote to Abraham that he was "getting farther and farther away from birth trauma" and that he believed it would fall flat." (Sigmund Freud, quoted by Lake, Tight Corners in Pastoral Counselling," 3).

Elsewhere, Lake states that "Freud closed the door . . . on Otto Rank. Rank's Trauma of Birth had made the 'impressive caesura' of birth a much more comprehensible and less inhibiting 'full stop'. But a new theory of the primacy of birth would have displaced Freud's own theory, which gave primacy to the oedipal conflict. Freud and his followers refused to allow that to happen, for personal, not scientific reasons." (Lake, "The Significance of Birth and Prenanal Events in Individual, Family and Social Life." 95)

[27]Melanie Klein, quoted by Lake, "The Significance of Birth and Prenatal Events in Individual, Family and Social Life," 54.

B. The Development of the Paradigm

2. Birth

Lake early on parts ways with classic Freudian and KIenian interpretive schemes relating to the non-importance of birth. But there is no clear delineation between Lake's emphasis upon the first months of post-natal life vs. birth as the crucial period for subsequent functioning. In fact, in Clinical Theology, Lake emphasizes the importance of both infancy and birth. However, in the extensive chapters and the summary charts of the various disorders in Clinical Theology he treats birth trauma as a part of the process of infancy. In the aetiology of the various neuroses and psychoses, it becomes one factor of many in the possible cause of later psychological maladjustment.

Sometime after the publication of Clinical Theology, Lake's thinking subtly changes. He begins to place a much greater emphasis upon perinatal events than before, and speaks much less of the cruciality of the events of early infancy. While Lake never denies that post-natal experiences are not eventful or even momentous, they tend to be less so than earlier events, often being a recapitulation of the previous experience.[28]

For much of Lake's professional psychiatric career, birth and birth trauma were held to be THE pivotal and crucial events for later "being" and "well-being." In 1977, referring to the previous 20 years of his professional life, Lake wrote: "l had happily taught and theorized on the basis of birth as the first significant psychodynamic event for twenty years [from the age of 43 to 63]."[29] This emphasis upon the cruciality of perinatal experiences, which includes 'events round about the birth; before, during and after birth,"[30] was not widely accepted at the time. There were, however, those who concurred with Lake on the importance of the perinatal.

Primary among them was Otto Rank. His book, The Trauma of Birth, published in 1924, clearly described Rank's contention that not only was birth the first experienced anxiety, but that it was the prime source material for all the neuroses and character disorders. It was the "original emotional shock underlying all personality dysfunction." Rank wrote that "we believe that we have discovered in the trauma of birth the primal trauma."[31] He continued, "we have recognized the neuroses in all their manifold forms as reproductions of, and reactions to, the birth trauma."[32] Even at

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[28]Lake makes an interesting comparison between two choices. This illustrates his de-emphasis of the relative importance of the "womb of the spirit" period of infancy. He writes: "If I were presented wlth a hard alternative, that in the case of a woman about to become pregnant, she had to undergo nine months distress during the next year and a half, but could choose whether the bad half came first, to be inextricably shared wlth the unborn baby, or came second, when her baby was already born, I would unhesitatingly urge her to choose to keep the months of pregnancy undisturbed, and face the task of coping wlth big trouble after the foetus had left her womb. Then she could cry or rage, grieve or despalr, while the baby was sleeping, apart from her tumultuous reactions, protected to a significant extent from them." (Frank Lake, Clinical Theology Newsletter #38 [Nottingham: Clinical Theology Association, Lingdale, July, 1981], 3).

[29]Frank Lake, "The Internal Consistency of the Maternal-Fetal Distress Syndrome," (Nottingham: Clinical Theology Association, Lingdale, 1977), 5.

[30]Frank Lake, "Perinatal Events and Origins of Religious Symbols, of Symptoms and Character Problems: The Possibility of Reliving Birth and its Eflects," (Nottingham: Clinical Theology Association, Lingdale, 1976), 1.

[31]Otto Rank in The Trauma of Birth, quoted by Frank Lake, "Primal Integration Work," Self & Society 15 (1987): 168: Lingdale Archive #118.

[32]ibid., 229.

this early stage, Lake quotes Rank as hinting at the importance of the prenatal: "'all symptoms ultimately relate to this primal fixation' and the place of fixation is 'in the maternal body' and in peri-natal experiences."[33]

Donald W. Winnicott[34] also exerted an influence on Lake as it relates to this period of emphasis upon perinatal events. Winnicott spoke of an event "etched on the memory" that later manifested itself in the stresses of later life. Lake quotes Winnicott approvingly:

> **There is evidence that personal birth experience is significant and is held as memory material. When birth trauma is significant, every detail of impingement and reaction is, as it were, etched on the patients memory, in the way to which we have been accustomed when patients relive traumatic experiences of later life.[35]**

Lake also credits Winnicott as being clear that "intra-uterine experience pre-natally was of importance to later development."[36]

A third major influence at this point was Stanislaf Grof, who, with Lake, began utilizing LSD as a psycholeptic agent in 1953. Grof divided up the perinatal experience into four "basic perinatal matrices" and described the phenomenology of each as occurring in LSD sessions. The first, called "Life in the Womb", again prefigured Lake's later emphasis upon prenatal life. This matrix is composed of the recollections of fetal life and involves the summation of experiences with which the baby faces the impending experience of birth. This summation tends to be either the positive "experiences of an undisturbed intrauterine environment where the basic needs of the embryo/fetus/baby are met"[37] or the negative recollections the 'bad womb' situation such as fetal crises, emotional upheavals in the mother and attempted abortions.[38]

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[33]ibid., 168. Rank also writes: "We believe that we have succeeded in recognizing all forms and symptoms of neuroses as expressions of a regression from the stage of sexual adjustment to the pre-natal primal state, or to the birth situation, which must thereby by overcome."

[34]Winnicott, Collected Papers Through Pediatrics to Psycho-Analysis; Winnicott, The Maturational Processes and the Facilitating Environment.

[35]D.W. Winnicott, "Birth Memories, Birth Trauma and Anxiety", quoted by Lake, "Treating Psychosomatic Disorder Related to Birth Trauma," 233.

[36]Lake, "Primal Integration Work," 169. Lake quotes Winnicott: "There is certainly before birth the beginning of an emotional development, and it is likely that there is before birth a capacity for false and unhealthy forward movement in emotional development."

[37]Lake, "Studies in Constricted Confusion," C-56.

[38]Lake, "Perinatal Events and Origins of Religious Symbols, of Symptoms and Character Problems: The Possibility of Reliving Birth and Its Effects," 7-8. Lake described this phase of Grof's Basic Perinatal Matrices this way: "They [the participants in the primaling seminars] would begin to have very, very clear ideas of what an undisturbed intra-uterine life was like . . . [several months before birth the baby's] . . . swinging around with plenty of amniotic fluid round so you don't occasionally bump agalnst the edges. You are on swings and the roundabouts and it's all very pleasant and easy, oceanic, you're in the water but all your needs are met, hopefully. We're talking about a good womb now where there is constant nutrients, where the chemical come down, the endocrine come [sic.] down in the placental blood stream to you and not loaded with alcohol and loaded with nicotine or loaded with all kinds adrenal toxins . . . so it's a good place and here you are really one with the sources. You get this experience. The all is in the one and the one is in the all, and for all I know, since I'm not aware of dependency, I am God, I am the very centre of things. There's no problem at all other than staylng in this place of ecstasy where from time to time why whole body shimmers with ecstatic feeling and life is very, very good. Cosmic unity, a sort of paradise. But equally well some people would go into disturbances of this intra-uterine life. A realistic recollection of a bad womb experience of foetal crisis, diseases, and emotional upheavals in the mother, twin situation, attempted abortion.

The second matrix is called "No Exit" and occurs at the beginning of labor but before the cervix opens. The "good womb" experience, where it has occurred, is inexplicably terminated and the supporter of the fetus for the last 9 months becomes the aggressor. There is relentless force to "push out" the constricted fetus which can seem destructive or even murderous. Those that have suffered a "bad womb' experience are having their earlier traumas recapitulated and confirmed. Regardless of the experience of the first matrix, coupled with the contractions of the uterus which serve to expel the child, is, temporarily, the closed cervix, creating a trapped, controlled, unescapable, hopeless feeling of "no exit".

The third phase involves the actual process of birth. The cervix opens and the fetus and womb begin to elongate. The fetus' head is pushed and molded to fit into the inlet to the pelvis. The reaction to this third matrix is variable. Some are active and some passive; some sense a maternal synergy and others maternal opposition; some are excited about the possibility of a new environment and others want to remain in the womb.

Lastly, Grof described the immediate post-birth experience as variable. There is the ideal of close, physical, and prolonged contact with the mother to "soothe away all the foul tensions that have arisen to perplex them, which they cannot understand."[39] Along with the sense of confusion and bewilderment, there is the possibility of the sense of abandonment, loneliness, separation anxiety, and in the extreme, a sense of nothingness and dread.

Grof's organization of the perinatal experience along these lines was important for several reasons in Lake's subsequent definition of the M-FDS. First, there is the affirmation, along with the perinatal, of the prenatal effect upon subsequent functioning. Second, early experiences become "patterns or principles of perceptual organization for later experiences" and serve as underlying prototypes for later complex reaction patterns.[40] Third, biological stress experiences are at the root of later psychopathology.

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[39]Frank Lake, "The Significance of Perinatal Experience," Self & Society, 6 (1978) 229; Lingdale Archive #044.

[40]Lake, "The Significance of Perinatal Experience," 230.

3. The Prenatal Period

While in 1976 Lake could say that "pre- natal events are quite important,"[41] sometime in the period between 1977 and 1978, there was a gradual and discernable shift in Lake's emphasis towards the prenatal period as the MOST critical for subsequent functioning. Toward the beginning of 1978, Lake wrote that "even in the nine months' growing in the womb there may be unimaginable sufferings and catastrophes."[42] In a Research Report from December 1978, Lake wrote:

> **Some of you have followed our research into what Iooked like the earliest recallable experiences of human beings, namely, the sensations and emotions accompanying one's birth. . . . Increasingly over recent years we have been invaded by evidence that the foetus in the mother's womb is picking up all sorts of messages about itself."[43]**

Lake continues to describe the rudiments of a M-FDS:

> **The catecholamines which convey the 'messages' to do with emotions round the mother's circulation, gearing all her organs and cells to feeling joy or sorrow, love or loathing, vitality or exhaustion, pass through the placental barrier (which to these substances is no barrier) into the foetal blood stream via the umbilical vein. In this**

context the foetus does its own emotional homework and responds, either passively accepting the mother's bad feelings as its own, as if true for itself, or by being protestingly overwhelmed by them. It can aggressively fight them back, in resolute opposition to sharing the mother's sickness. Others become 'foetal therapists', trying to bolster up a debilitated and debilitating mother from their own feelings of relative strength. Sensitivity to 'poisonous' feelings coming from a rejecting mother is very great. . . . To be the focus of mother's love imprints a confidence that 'sets you up for life.'[44]

The evidence that Lake cited to give credence to this shift in thinking came form the ongoing workshops in which deep-breathing techniques were being used to abreact early perinatal and increasingly pre-natal "memories." Lake likewise found support for his findings in the orthodox psychoanalytic dream and association analysis work of Nandor Fodor, M.L. Peerbolte and Francis Mott, particularly Mott's utilization of a term first used centuries earlier - "umbilical affect".[45]

Both Mott and Lake used this term to describe the "feeling state of the fetus as brought about by blood reaching him through the umbilical vein.".[46] As Mott envisaged it, the umbilical vein not only conveys nutritive resources and as such could be experienced as a "life-giving flow, bringing . . . renewal and restoration" but could also "be the bearer of an aggressive thrust of bad feelings into the foetus if the mother herself was distressed and 'feeling bad."' If the mother felt emotionally unsupported, then "this feeling of deficiency, lack of recognition and the failure of looked-for support, would be just a specifically felt by the fetus. It became distressed by the failure of its immediate environment to provide the expected acceptance and sustenance, not so much at the level of metabolic input but to nourish the earliest beginnings of the person in relationship."[47]

Thus, Lake's formulations are highly similar to Mott's. where Mott's research primarily focused on dream analysis, Lake's ideas took shape following the results occurring from over 1200 LSD and deep-breathing assisted re-experiences of peri and pre-natal events. That the two were so highly corroborated encouraged Lake that his findings were not unique. where Lake differs from Mott is in his final emphasis upon the first trimester as the MOST determinative phase of development.

Thus, with emphasis upon the prenatal stage, the M-FDS is essentially the affirmation that a maternal-fetal "affect flow" exists and consequently the emotional state of the mother is transmitted by way of the umbilical cord to the fetus. This "affect flow" is determinative of subsequent psychological and emotional functioning and perception.[48]

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[40]Lake, "The Significance of Perinatal Experience," 230.

[41]Lake, "Perinatal Events and Origins of Religious Symbols, of Symptoms and Character Problems: The Possibility of Reliving Birth and its Effects," 17.

[42]Frank Lake, "Theological Issues in Mental Health in India," (Nottingham: Clinical Theology Association, Lingdale, 1978), 1, quoted in In the Spirit of Truth, ed. Carol Christian (London: Darton, Longman & Todd, 1991), 46. This article was commissioned by the Institute for the Study of Religion and Society in Bangalore, but was apparently never published.

[43]Lake, "Report from the Research Department #1," 2.

[44]ibid.

[45]Moss, "Frank Lake's Maternal-Fetal Distress Syndrome: Clinical and Theoretical Considerations," 203.

[46]ibid.

[47]Lake, "Treating Psychosomatic Disorders Relating to Birth Trauma," 51.

[48]Lake, Tight Corners in Pastoral Counselling, viii-x.

4. The First Trimester

The fourth and final phase of Lake's thinking with regard to what constitutes the critical period of maternal-fetal affect flow is also the most controversial. That there was a distinction between his emphasis upon the prenatal period in general and the first semester in particular can be determined from a later paper he wrote:

> **We thought initially that the pervasive traumatic influence of maternal distress on the foetus would be spread (if it occurred at all) throughout the nine months of pregnancy. We have now modified our thinking in the wake of the evidence that the first trimester is the locus for most of the catastrophes, for most of the sufferers from the M-FDS.[49]**

Referring back to the "womb of the spirit," Lake later wrote that from 1966 to 1977, he had applied the "womb" analogy as it related to the spirit to the first 9 months of past-natal life. And while the described dynamics are still true, the term "womb of the spirit" "could now more accurately be transferred to the earlier developmental stage, within the first half of the nine months of pregnancy - which are the crucial ones - though extending throughout until birth."[50]
In a second research Report written in 1980, Lake implied the evolution of his thinking:

> **We find that it is not sufficient to look back, to find the origins of significant trauma, of consequent fixated pain, and therefore of the personality reactions that represent flight from that pain, only so far as the first year of life, or even to the traumas of birth. Things go wrong - or go well - much earlier than that.[51]**

Referring to these earlier sources of pain, Lake writes that it is the fetus who is vulnerable to "all that is going on in the mother, particularly in the first trimester, that is in the first three months after conception."[52] Lake later reaffirms this in Tight Corners in Pastoral Counselling when he writes:

> **The focus for psychopathology is now, for us, the first trimester of intrauterine life. These first three months after conception hold more ups and downs, more ecstasies and devastations than we had ever imagined.[53]**

Thus, it is on the first trimester as the primary and cmcial period of life that Lake finally settles. Although Lake continued to affirm that later pre-natal, peri-natal, and post-natal experiences all powerfully affect the post-natal functioning of the child and later the adult, it is the first trimester of intra-uterine life that is most determinative for all subsequent psychological, cosmological and ontological functioning. Referring to the evolution of his thinking regarding the critical stage of maternal-embryo/fetus-baby interaction, Lake noted:

> **The old is as true a picture as ever, but the absolutely solid reality of the new, embodying the astonishingly rich vicissitudes, responses and interactions of foetal life, cannot fail to highlight the deficiencies in depth and shading, and in clarity about the inner structure and texture, of the post-natal picture as it has hung on the walls of our minds for so many years.[54]**

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[49] **Lake, "The Internal Consistency of the Maternal-Fetal Distress Syndrome," 3.**

[50]**Lake, "Mutual Caring," 127.**

[51]**Lake, "Report from the Research Department #2," i.**

[52]**ibid., 3.**

[53]**Lake, Tight Corners in Pastoral Counselling, viii**

[54]**Lake, "Mutual Caring," 58-59.**

C. THE RESEARCH LEADING TO THE PARADIGM

Within the evolution of the overall theoretical process that Lake was thinking through there were two specific research phases that gave him the "evidence" to conclude that the first trimester was determinative for later functioning: the LSD research (1954-1969/70) and the primal integration workshops (1975-1982).

1. LSD Research

In a speech given at Lingdale in September of 1976, Lake described his initial introduction to LSD research. "My chief sent me down to work with Sandison at Powick in 1954 because we were making no headway with alcoholics at all and he'd heard that LSD helped alcoholics to come to some awareness of what it was that made them go on drinking. So I went down . . . (and on return, I was given full time for two years, no other jobs [but] to pick out patients, [give them LSD,] and sit with them for four hours, six hours, as long as was necessary."[55]

He quickly discovered that when used in the presence of a trustworthy therapist, LSD-25 seemed to serve effectively to de-repress the "forgotten" memories of the patient. As he began to take note of "whatever the patients said as the thick crust of repression crumbled under the impact of the drug and the contents of the unconscious mind emerged into consciousness,"[56] he noted several striking commonalties among what seemed to be a reexperiencing of repressed infantile memories.

First of all, "the situation of the baby at the breast, for better or worse" and "the loss of the countenance of the mother, as a significant source of primal anxiety, occurred with painful frequency."[57] Secondly, he wrote:

> **I was not prepared for the frequent abreaction of birth trauma. I was assured by neurologists that the nervous system of the baby was such that it was out of the question that any memory to do with birth could be reliably recorded as fact. I relayed my incredulity to my patients, and, as always happens in such cases, they tended thereafter to suppress what I was evidently unprepared, for so-called scientific reasons, to believe.**
>
> **But then a number of cases emerged in which the reliving of specific birth injuries, of forceps delivery, of the cord round the neck, of the stretched brachial plexus, and various other dramatic episodes were so vivid, so unmistakable in their origin, and afterwards confirmed by the mother or other reliable informants, that my suspicion was shaken.[58]**

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[55]Lake, "Perinatal Events and Origins of Religious Symbols, Of Symptoms and Character Problems: The Possibility of Reliving Birth and its Effects," 2-3.

[56]Lake, Clinical Theology, xix.

[57]ibid., xx.

[58]ibid., xix.

A third commonality from the LSD-assisted abreactions of birth and early infancy was the occupance of discontinuous reactions to severe stress. With regard to both birth and events in the first year there seemed to be a normal reaction to mounting stress, but then suddenly, "dramatically and dreadfully, the struggle to live, reaching a certain margin of tolerable pain, seemed to switch, automatically, into a struggle to die, of equal intensity with the previous struggle to live."[59] Lake found that Ivan Pavlov had observed this same paradoxical phenomena in dogs. This "transmarginal stress"[60] seemed to produce autistic, withdrawn, and classically schizoid children and adults. It was in this discovery that Lake saw the root of schizophrenia and the schizoid personality disorder as occurring in the first 6 months of post-natal life.[61]

Related to this observation was a fourth, that the reaction to early emotional stress tended to set up a pattern of similar reacting that is life-long. Persons who early on reacted "hysterically" tended to react hysterically as adults. Persons who adopted the typical "depressive" defense patterns early on, tended to utilize them as adults.

These observations served as "evidence" to spur Lake on to what would eventually result in the M-FDS. Towards the end of his research with LSD in 1969, Lake did a follow-up study on 68 patients, 57 of whom responded. Half of these persons claimed to have experienced events of early childhood or birth as if they were reliving them.[62] Of the 57, 37 reported that they remembered experiencing being born and 21 that they had relived some aspect of intra-uterine life.[63]

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[59]ibid., xxi. An interesting parallel is drawn by Lake between this description by Lake and Freud's formulations of "eros" and "thanatos," the former being the instinct that embraces life and the latter the drive that embraces, at least initially, self-aggression and death. (ibid., 788-794).

[60]Ivan P. Pavlov, Conditioned Reflexes An Investigation of the Physiological Activity of the cerebral Cortex, ed. and trans. G.V. Anrep (New York: Dover Publications, 1960); Ivan P. Pavlov, Experimental Biology and Other Essays (New York: Philosophical Library, 1957; Ivan P. Pavlov, Lectures on Conditioned Reflexes trans. W. Horsley Gantt (New York: International Publishers, 1928).

[61]Lakes 372-page "chapter" on the Schizoid personality in Clinical Theology (pp.553-923).

[62]Roger Moss, "Frank Lake's Maternal-Fetal Distress Syndrome and Primal Integration Workshops," 3; Roger Moss, "Frank Lake's Maternal-Fetal Distress Syndrome: Clinical and Theoretical Considerations," 53- 54.

[63]Lake, "Treating Psychosomatic Disorders Relating to Birth Trauma," 231. This survey was sent out in 1988 to a total of 88 former patients. Fifty-seven responded. Each patient averaged 6.2 four-hour sessions of LSD-assisted abreaction. The survey was vetted previous to being sent out by Dr. Donald Ball and Professor Kenneth Rawnsley.

In Tight Corners in Pastoral Counselling, Lake reports that there was a period of overlap between the residential workshops and the LSD phases of his research. He writes that "only at the very end of the period in which I was using LSD 25 in the therapy of neuroses and personality disorders, that is, at the end of the sixties, did I invite those who wanted to work at primal depth, using LSD, to come to residential conferences with spouse and friends. I soon found how greatly this group work helped the process, and wished that I had realized that earlier." He continued, "At the same time the value of Reichian and bio-energetic techniques broke upon us, and we discovered that deeper breathing alone was a sufficient catalyst for primal recapitulation and assimilation. Nothing more 'chemical' than that was necessary, so we stopped using LSD."[64]

2. The Lingdale Workshops

With the discovery of the importance of a facilitative group for primal work noted above, the second phase of Lake's research began. These "primal" groups evolved out of the seminar structure that had begun even previous to the constitution of the CTA. It was in 1958 that Lake began running "clinical theology" seminars. Each seminar[65] lasted for 3 hours and met 12 times, approximately once every three weeks for one year. They gradually evolved into the residential workshops that were inaugurated at Lingdale in 1975.
They were initially three days in length, later expanding to as long as 6 days in duration, and were offered on various themes and topics. As these conferences developed and evolved, and as the theory underpinning the M-FDS was beginning to coalesce, Lake introduced an integrative seminar called "Primal Therapy in Christian pastoral care."[66] Towards the conclusion of 1978, these seminars evolved to the point that some were centered upon personal growth, some explored prayer and healing, and still others focused on primal therapy. Lake brought all three of these

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[64]Lake, Tight Corners in Pastoral Counselling, 7.

[65]By the time the Clinical Theology Association was established in 1962, seminars were being held in over fifty centers through the United Kingdom. Following the establishment of the CTA, a total of ninety seminars were being held, fifty of these continuing from the previous years and forty being launched anew. A year later, over one hundred seminars were running in 37 dioceses. (Peters, Frank Lake, 11).

[66]Moss, "In the Beginning," Introduction:3.

elements together into a workshop titled "Personal Growth and Primal Integration in the Small Group."[67] It was in these seminars, along with the primal integration workshops that followed them, that much of the "evidence" for the M-FDS emerged.

3. Primal Integration Workshops

The Lingdale workshops were conducted at a residential facility immediately adjacent to Lingdale, the headquarters of the CTA during this period. Located near the center of Nottingham not far from one of its toughest areas, With its surrounding gardens and enclosure by a fairly high stone wall coupled with its location on a quite cul-de-sac, Lingdale provided an ideal place for a residential retreat-like seminar. The house[68] was quite large, able to accommodate between 14 and 18 persons, with sufficient space to allow for several "primals" to be occurring simultaneously. During the period between 1979 and 1982, over 500 persons attended these seminars at Lingdale[69] some lasting as long as 7 days.[70]

The seminars, whether at Lingdale or elsewhere, usually began[71] with some brief introductions and the presentation of an itinerary of the days to follow. During the first two days of the seminar, the focus centered on getting the participants emotionally comfortable both with each other and the facilitators. A certain degree of comfort was

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[67]ibid.

[68]Roger Moss describes the house at "Number thirty-four" this way: "It was somewhat more sumptuous [than Lingdale] in its decor. Its previous owners were Middle Eastern. They had left behind them luxurious carpets, and the wallcoverings were heavy and warm. It was not difficult to imagine the scent of a curry drifting nonchalantly around the banisters." (ibid., 3:4).

[69]This number includes only those who participated at Lingdale in Nottingham. Lake reports that during the same period, 1200 people went through the workshops (Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 8), thus indicating that approximately 700 attended these workshops elsewhere. Indeed, Lake states that during this time he lead "pre-natal integration sessions" in Brazil, Australia, India and Finland (Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 11; Frank Lake, "Reflections on the work in Australia and India," Nottingham: Clinical Theology Association, Lingdale, Lingdale Archive #117]).

[70]Moss, "In the Beginning," 3:1.

[71]Moss reports that of those who participated at the Lingdale workshops, all received some limited information about what was to occur while approximately 2/3 had done some previous relevant reading. He reports that in his later survey, 26.7% reported that the preparation was inadequate. (ibid., 3:4).

required in order to feel a "sense of safety"[72] and was facilitated by a supportive sharing process whereby each person spoke "of the aspects of their own personality functioning on which they hoped to work."[73] This process, not unlike conventional group therapy, included probing not only into their current emotional functioning, but also into the history of their lives. Especially noted and emphasized would be any information and memories associated with the circumstances of their conception, prenatal period and birth.[74]

A second component of the first few days of the seminar was some teaching with regard to the biological and physiological facts of embryology. In order to understand better the prenatal environment at each successive stage, a workshop facilitator[75] would give a 2-hour lecture, usually accompanied by slides and other illustrations of embryonic and fetal life, although not always.[76] While this lecture was primarily designed as presentation of the basic scientific facts of embryology, very often either the lecturer or a participant would begin to "resonate with aspects of the story that were particularly applicable to them"[77] and communicate this with the other participants. Following this review of embryology and building upon it, the facilitators, often very informally and as a function of other activities, then began to communicate the various principles and practice of primal integration. After several days of preparation, very often several of the participants would begin with the "work" of primal integration. At Lingdale this was done in a room large

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[72]"On this depended the sense of safety which would prove vital for the journey into the unknown. Nothing contributes more to making people feel safe than disarming: taking down the defenses, laying aside weapons of attack, and exposing the most vulnerable areas." (ibid.)

[73]Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 7.

[74]For instance, Moss writes that some of the questions might relate to "Were they consciously aware of the mother's situation before the birth, and her likely reaction to the pregnancy? Where was the father then, and how were he and mother relating to each other?" (Moss, "In the Beginning," 3:5).

[75]Usually Lake or Miss Jill Holcroft, "a senior biology teacher." (Lake, "Mutual Caring," 85).

[76]Lake wrote: "However, it must be said that on workshops when this illustrated talk has not been available, there seems to have been no difficulty in staying with the week or month specified, and no loss of vividness of the subjects recall of their experiences when in, or passing through each phase." (Lake, "Mutual Caring," 85).

[77]Moss, "In the Beginning," 3:6.

enough for four persons to be "working" at a time,[78] each with three or four persons immediately around them. The room was usually carpeted and comfortable with dim lighting.[79] Lake described the situation:

> **Each subject working has, squatting on mats round them, a facilitator from our experienced house team, a workshop member (whose turn would come later) who had volunteered to write down all their utterances as an accurate record, and a third member tending a tape-recorder.[80]**

Each "session" lasted from 2 to 3 hours and would be followed up by a feedback- session with the larger group.
The "session" would begin with the "subject" relaxed in a supine position on the floor being guided in a "conception-to-womb talkdown". The facilitator, usually Lake, would simultaneously speak to all four "primalers". This address would begin with a simple relaxation routine, sometimes by way of guided fantasy[81] but always with the use of deep-breathing.[82] The facilitator would then remind the participants of the facts of early life. Lake states that he would rehearse, "in a neutral, emotionally unbiased

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[78]ibid., 3:7.

[79]Moss describes the scene in more detail: "The most appropriate setting is a carpeted room with no furniture in it, and with no projections from the walls. Rubber mattresses increase the comfort when lying on the floor for two or three hours. Cushions or pillows can be at hand. Tissues, and bowls in case a subject retches, are available. The subjects would be clad in loose clothing of a type suitable for squirming around on the floor." (ibid.)

[80]Lake, "Mutual Caring," 65.

[81]Moss writes: "For example, Frank Lake would evoke a series of images of the deep sea bed - rocks, shapes, moving creatures and so on. By thus removing his subjects from their everyday experience, they would often make links with breathing more deeply than normal." (Moss, "In the Beginning," 3:7-8).

[82]In a transcript of just such a "Conception-to-womb-talkdown" by Lake at Lingdale dated 10/2/80, Lake states "Let's begin by breathing deeply - all of us, and just being aware of the strength and the beauty and the fittingness of the all around us. (pause) This air so meets the need of every cell in the body, every blood corpuscle. Everything is enriched by it, and our power to discriminate is enriched by it. (pause) And let us breathe in, too, that Holy Spirit, that Holy Breath which enables us to discriminate, to know who we are; to know from which part of us we are speaking . . . (pause) that Spirit who divides flesh and body, mind and spirit, so that we know where things come from. . . . And so, with this deep breathing, and this deep breathing in of all the resources of loving persons whom we have ever known, and the group round us now. . . . ah. . . . breathe into your strength, ask, and let the tiredness come out; let the weakness come out. Give voice to all that is within that often doesn't have a chance to be expressed. Ah." (Frank Lake, "Conception-to-Womb Talkdown," Nottingham: Clinical Theology Association, Lingdale, October 2, 1980] 1).

voice,[83] the undisputed facts of human development, the anatomy and physiology of the meeting of the sperm with the ovum recently released from the ovary whose lifetime it has shared, to conception and cell division to the morula and its hollowing out to form the blastocyst."[84] As this occurred, very often the participant would curl up in the fetal position and become totally oblivious to the other participants, "genuinely creating 'a womb' out of the small group and experience within it an authentic transcript of intra-uterine experience."[85]

In addition to the reiteration of the "anatomico-physiological facts" the "talkdown" included repeated promptings to recall certain forgotten or ignored data related to the participants' mother and father and the entire environment in which conception and early pre-natal life occurred. Along with this recall, the participants were also encouraged to give voice to the emotional memories.
The "talkdown" would proceed in a chronological manner, beginning with an identification with the ovum AS part of the mother[86] and the sperm AS part of the father.[87] This was followed by a recapitulation of the emotions and sensations of

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[83]Lake relates this in the following manner: "I rehearse, in a neutral, 'dead-pan' voice the well-known anatomico-physlological facts from conception, through implantation to the establishment of the umbilical circulation." (Lake, Tight Corners in Pastoral Counselling, 27).

[84]Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 9.

[85]Lake, Tight Corners in Pastoral Counselling, 27.

[86]And breathing deeply, get an image of your mother, so much younger than when you last saw her: your mother as she is (pause) What is it to be her? Go back in her life, because in her womb, in the tubes leading into the womb, already there is an egg there, and that egg has come from her ovaries, and they been part of her ever since before she was born, so that cell has, as it were, been part of her life with its ups and downs: her love of life and her fear of it: her trusting and her mistrusting .

Just be, if you can, be your mother. what's it like to be her? Are you very happy on this night with this man who's alongside you. Is he bringing you great joy in your life? Is he strong? . . . Is he going to bring you the gift of joy, of rich power to give love? Breathe deeply, and as you breathe out, be your mother expressing what you feel are her joys and sorrows at this moment." (Lake, "Conception-to-Womb Talkdown," 1-2).

[87]"Become aware of your father as he is on this night in which you will be conceived. just think of him in his strength and in his weakness; in his loving and in his selfishness. What is it like to be him? What's in your mind and heart now as father, as you come towards this woman, your wife (or whoever she is), this woman you love? (ibid., 2).

sexual intercourse[88] and then conception,[89] followed in turn by the zygotic[90] and blastocystic[91] stages and then implantation.[92] Lake wrote that he would seek to lead participants to "tune in" on the emotional state of the mother and father. He would ask them:

Reflect on their mother's feelings as she joins the father on the night of the conception. How does she feel about herself? How does she feel about having her first child or adding to the family, or trying again after one or more miscarriages or fatal birth accidents? How does she feel about the man- probably her husband alongside her? Is she full of joyful anticipation at being aroused by him, open to him and being entered by him?[93]

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[88]**Is there a deep willingness in both, or some reluctance on one side? And so this act of' intercourse begins between them. do you sense tenderness here? What is being given by each to the other? And so, in the activity and the vigour of this coming together sexually, there come together this stream of sperm that find their way up, through the cervix into the womb. Become the most active of these, the one that gets there first. What is it like to be the bearer of your father's contribution to you? (pause) Do you feel vigour and strength and eagerness in this sperm? Does it bring great gifts to the making of you? (ibid).**

[89]**"And so there's this great surrounding movement, and gradually some coverings come off the ovum, and this eager sperm finds its way though and comes to be inside the great mass of the ovum. . . . How does it feel to be the sperm in this great mass of ovum tissue? Become an ovum. How do you feel about being invaded by this element?" (ibid.)**

[90]**"And now there is a new nucleus, a new beginning, a new recipe for you. How do you feel about this first cell? from which the whole of you, division upon division has come to be? Here you are now, no longer just an ovum, but the zygote . . . lying there on the carpets of the Fallopian tube, and gradually being wafted up towards the womb. And as it travels slowly, dividing into two, inexorably now, the process of growth is taking place. Whatever the memories that come, whatever their wishes, these will go on multiplying and multiplying." (ibid., 2-3).**

[91]**"After four or five days, this berry mass begins to have a sort of hole in the centre, and develops into a perfect sphere. Breathe deeply and identify with what it's like to be this perfect sphere. . . . become what you have once been: a perfect sphere, floating free, touched from time to time by the cilia, wafted along until you come out through the opening into the womb. Here you are, as it were, in space, with no right not left (certainly no right and wrong), no male or female- just a perfect sphere, with these three layers of cells inside, out of which everything will grow: this little sunrise of cells. Here you are, then, floating free with no attachments now to mother, but just surrounded. what do you want to say or express of what it's like to be this sphere. What's the colour? Is it dull or radiant? What is it like? What is its sense of identity here?" (ibid., 3).**

Lake later modified his understanding that the blastocystic phase was always experienced positively. He wrote: "We have now a significant number of cases in which the moment of conception itself Is registered with horror and recoil, as a total disaster - the beginning and origin of a negative evaluation of the life process and self-identity that has persisted through the blastocystic stage and through it to implantation and beyond." (Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 3).

[92]**Suddenly you get a sense of urgency: "I can't stay here. Must get inside. this must come to a kind of sticky end. I must stick to the wall and find my way in. . . . Get this sense now, then, of attaching to the wall, and from the outside of you there grows these little processes, digging into the wall of the womb. does it seem to be something you're glad about, this moving into the wall of the womb?**

And so you press your way through. Does it seem easy, and are you well-equipped to get in? Do you have any difficulty?" (Lake, "Conception-to-Womb Talkdown," 3).

[93]**Lake, "Mutual Caring," 67.**

The "talkdown" would temporarily conclude at the sixth week,[94] with the crucial suggested awareness of the umbilical flow returning from the mother. Lake, in a transcript of a talkdown from a workshop at Lingdale dated 10/2/80, concluded with these words:

> **And breathe up deeply into your strength, and make any kind of neutral noise as you breathe out. Ah. But reach down into contact with any feelings in the belly. What is it that comes in from mother? because she's in contact with all that world outside, the world of men and women, and all that goes on. (pause) So breathe deeply, and explore what it is that comes through from mother into you, and give a voice to it as you breathe out. A-ah. Take your time, and just be aware in your own space of what it was like for you to be in the womb. . . . Breathe strongly and give yourself plenty of air to get into contact with this child as the end of the cord.[96]**

Following this phase of discourse by the facilitator, the participants were left to work through the remainder of the third trimester without the aid of a verbalized facilitation.[96] At this point in the seminar, contingent upon the prenatal experience of each participant, the reactions would vary significantly. Lake wrote:

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[94]"And so there's growing going on, growing fast - everything growing. And round the outside there's the blood and fluid of the mother's womb, on which, already, you're beginning to feed.

And so we move up to about the fourth or fifth week' By this time your head is very large: Little "gills" down the side, and then these little flippers of arms and legs, and this great big fathering of blood vessels (the heart is beating now), and coming in the navel this great big umbilical vein. And coming out from the upper end of the legs, these umbilical arteries going back again, and meeting there in the wall of the womb, like the roots of a great tree; the placenta - this rosette from which all comes and to which all returns. so now, let's get in touch with what it feels like to be at the end of the umbilical cord, receiving mother's life, the food she sends in for the building of the body. And be aware of what It's like to be conscious, to be becoming aware, inside her. So will the facilitator." [at this point the facilitator places three fingers over the navel of the participant]. (Lake, "Conception-to-Womb Talkdown," 3-4).

[95]ibid., 4.

[96]Roger Moss reports that the participants were left to work through the remainder of the pregnancy and the birth. He writes: "Now each subject is left to work at his or her own pace, through three trimesters of pregnancy, through the stages of birth, until breathing and bonding with the mother has taken place." (Moss, "In the Beginning," 3:8).

Each became so totally different,[97] and were discovering their own pace and intrinsic direction of retrieval and re-living. I, as conductor, would 'go off the air', leaving them to explore, for the next couple of hours, the unique features of their own record of the first trimester[98]

Following this period, Lake writes that "at a point usually clear to the long experience of the facilitator"[99] he would then begin to rehearse the remainder of the fetal experience, moving through the months of the middle and finally third trimesters, to finally conclude at birth.[100] Depending upon the retrieved memories of birth, the session often ended at this point, was prolonged, or needed to be taken up at a second session.[101] Lake continues that "at all points in the journey, from conception to bonding, the subject is in adult contact with their facilitator and small group. They will go out to the toilet and return, immediately in contact again with the foetal world at the point where they left it."[102]

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[97]Roger Moss writes: "The responses from each subject are quite different from one another, astonishingly and beautifully unique. Frank Lake argued that it was extremely difficult to believe that suggestion by the leader was the main factor. If that were the case, there would be far more uniformity. One person finds the experience deeply satisfying, and expresses primitive joy. Another is not so satisfied, and gives voice to a sense of longing for what should have been, yet did not happen. A third subject feels anger, and thumps and storms as it overwhelms him. And another one is terrified and shivering, then crying inconsolably.

And so the different stages of pregnancy are re-lived. Conception and implantation are not infrequently crisis times. So is the end of the first trimester. when for not a few the mother entertained the possibility of finishing the pregnancy, and even made an attempt to procure an abortion. The sense of rejection that this realization evokes can be horrific. The, as the pregnancy proceeds, its individual accidents, illnesses and traumas are transmitted to the unborn child. for many, there is relief, sometimes quite unexpected, in the form of ecstasy and pleasure, as the mother exults in her baby, her marriage, and the wonder of her body, her sexuality and motherhood." (ibid., 3:8-9).

[98]Lake, "Mutual Caring," 65.

[99]ibid.

[100]Moss writes: "As labour approaches. there is. if anything, a surge of even greater realism. Typically, the head is engaged in the pelvis; it begins to feel pressure as the powerful muscles of the womb contract against the as yet closed door of the cervix - the so-called 'no-exit' phase. Then follows the struggle to get out; and at last it is possible to take a breath and to relax. When there are complications, these may well be faithfully re-enacted. The significant first moments of contact with the mother are experienced again, though for some this event is tinged with bitter disappointment. (Moss, "In the Beginning," 3:9).

[101] Lake writes: "If the birth had been prolonged and difficult, there probably would not be sufficient energy on this occasion to go deeply into it. If comparatively easy, it would be relived and the sensations and emotions on arrival, and the cutting of the cord, experienced and 'given a voice'. On each occasion we plan to stay with the subject until bonding with the mother has taken place. If this was badly delayed and became a dread-filled, trust-shattering experience, the session could be extended by an hour or more to permit its exploration. Or it could form the focus of a second session." (Lake, "Mutual Caring," 66).

[102]ibid.

At the conclusion of the session, following a brief break, a feedback session would ensue in which a greater exploration of what happened would be encouraged. Assisted by the written and recorded records of each "primal", the participant evaluated the experience in light of their present life. What insights have been made? Lake writes that a typical question put forth might be "How far do they recognize, in the foetal states now fully and clearly relived, the source of life-long attitudes and decisions, fixed perception and rooted character stance and posture?[103]
If a second session was needed, the participant would again return in order to finish out the chronological process of the prenatal or antenatal experience, or, return to that area or period that needed more "work."
The entire seminar would conclude with some preparation for "re-entry", often utilizing psychodrama and focusing on how the insights of their experience related to the "here-and-now." For some of the participants, follow-up weekends at Lingdale with an emphasis toward an ongoing mutual care for each other were attended. Roger Moss reports that due to distance, expense or other commitments, these very often were problematic.
The recorded tapes and written transcripts of the sessions provided much of the evidence[104] for Lake's formulations of the M-FDS. In addition, Roger Moss, a coresearcher of Lake's during this period, completed a follow-up postal survey[105] of those who had attended the residential workshops at Lingdale between October 1979 and April 1982. The survey, consisting of 52 main sections covering 11 sides of paper, was sent out to 500[106] of the total of 516.[107] A return rate of 56.2% (N=281) was achieved and these were analyzed in light of the data and evidence already at hand.[108]
Moss' survey of the Lingdale Workshops, which will be dealt with in chapter five, certainly is consistent with Lake's formulations of the M-FDS as well as the research that Lake himself had access to, namely the written and audio records of the hundreds of "primals" during this period. Based on this evidence, Lake formulated a theory with specific elements.

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[103]ibid., 88-69. He continues: "Do they feel these have been sufficiently identified, explored and relived, in the context In which they were inevitable, indeed the only reasonable responses to a hostile and invasive environrnent,as to be able to leave them where they belong and to live free of them? 'Will it be possible to 'withdraw the projections', no longer needing to see adult situations through foetal eyes? Or is there more to be recovered and relived before that is possible? What important areas were passed over? Was the subject and the group aware of points of pain which had been, because of their intensity, not fully entered on the first occasion? What could be done to enable a deeper and fuller acceptance and integration?" (ibid., 69).

[104]Lake presents several extended verbatim LSD abreactions related to the schizoid reaction in Clinical Theology, 830-692.

[105]The defined alms of Moss in this survey were as follows:

> **"1. To assess the value of the workshops to the participants in terms of their personal growth and well-being.**
> **2. To obtain some information about the unwanted and damaging effects of the workshops on the participant's mental health and way of life.**
> **3. To draw conclusions about helpful and unhelpful ingredients of the workshop package with a view to learning lessons for the future work of this type.**
> **4. To elicit additional information to enhance the value of the material already held [ie. scripts and interview data].**
> **5. To assess the speed of therapeutic change, the amount of subsequent work necessary, and the need for counselling, facilitatory or psychotherapeutic support required after the workshops." (Moss, "In the Beginning," 3:14).**

[106]This number is reported as 501 in Roger Moss, "Primal Integration, A First Report from the Workshops," CTA Occasional Paper #1, (Oxford: Clinical Theology Association, St. Mary's House, May 1983), 7 and as 500 in Moss, "In the Beginning," 3:15.

[107]"Again, Moss reports this as 517 in "Primal Integration, A First Report from the Workshops," CTA Occasional Paper #1: 7 and as 516 in "In the Beginning," 3:15.

[108]"The symptomology reported included a total of 969 "problems" listed. "Of those mentioning a part of the body the most frequent were: the abdomen (29), the head (25), the limbs (20 and the back (14). Specific psychological complaints grouped as follows: the commonest was depression (113), followed by withdrawal (87), tension (82). anger and rage (82), anxiety (75), fears and phobias (38), panic feelings (33), and hypersensitivity (27). Other groupings of comparable size were problems relating to exhaustion (29), appetite (24), sex (22). and workaholism (18). . . . As far as the more serious forms of psychiatric disorder were concerned, only one actually mentioned psychosis, one other referred to hallucinations, four to suicidal ideas, but 17 stated that they experienced paranoid ideas." (Moss, "In the Beginning," 6:3).

D. THE COMPONENTS OF THE PARADIGM

Following conception and prior to the process of implantation is the short preliminary stage of the "blastocyst." Lake affirmed that this period is often felt to be a good experience of non-attachment, even of unitive and quite 'transcendent bliss.'"[109]There may be a sense of continuity with the monistic sense of 'union with the Absolute' experienced by some in the first week after conception, a kind of Blastocystic Bliss."[110] This stage is immediately succeeded by implantation in the lining of the maternal womb, gradually resulting in umbilical circulation through the umbilical cord and placenta.

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[109]Lake, Tight Corners in Pastoral Counseling, 15.

[110]Lake, "Studies in Constricted Confusion," C41.

Lake writes:

> **As this begins to function, the foetus is evidently put into direct contact with all that is being transmitted round the mother's own body as an expression of her emotional ups and downs. The foetus feels acutely the feelings which are the product of the mother's life situation, for better or for worse, and her personal reactions to it.[111]**

According to Lake, the establishment of umbilical circulation allows every woman to have a profound impact upon an emerging fetus within her. This occurs through the phenomenon that Lake called "umbilical affect". This term is defined as the "feeling state of the fetus as brought about by blood reaching him through the umbilical vein.[112] This maternal-fetal "affect flow" transmits the emotional state of the mother to the fetus by way of the umbilical cord in a manner similar to the transmission of nutrients and various teratogen such as viruses and chemical agents. As Lake states:

> **Before birth, the foetus may be seriously damaged if the mother is dependent upon alcohol, nicotine or other drugs. It is also damaged by the less readily identifiable changes that transmit to the baby a mother's rejection of a particular pregnancy and of the life growing within her. My severe maternal distress, whatever its cause, imprints itself on the foetus.[113]**

The effects of this "affect flow" are conditioned by the interaction between the mother's emotional state and the fetal response to it. The maternal "affect flow" spans the full range of emotional possibilities. At one polarity, stands the ideal of total joy and acceptance resulting in an "emotive flow" that communicates recognition, affirmation, and acceptance to the fetus. The other extreme represents maternal rejection and distress that results in the "invasion of the fetus in the form of a bitter, black flood."[114] Either way, this "invasion' is usually the result of often very complex and mixed emotions. Lake states:

> **She may have been full of anger internally, while fear, compliance or compassion prevented its ever being shown externally. she may have loved the man by whom she became pregnant, while hating the resultant fetus, or loved the prospect of having a baby, while hating, fearing or feeling deeply disappointed and neglected by its father. The fetus receives all such messages but has difficulty in distinguishing what relates specifically to it and what belongs to the mother's feelings about her own life in general.[115]**

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[111]**Lake, Light Corners in Pastoral Counselling, 15.**

[112]**Moss, "Frank Lake's Maternal-Fetal Distress Syndrome and Primal Integration Workshops," 203.**

[113]**Lake, Tight Corners in Pastoral Counselling, 16.**

[114]**ibid., x.**

[115]**ibid., 21.**

Similarly, the fetal response varies from "'taking it all to heart' as a judgement against itself, to be passively endured, or strongly to oppose it, or 'to get right out of it' by splitting off the ego, the experiencing 'I' taking leave of the too-badly hurt foetal body."[116] whatever it is, the foetal response to the maternal "affect flow" is contingent upon its own constitutional factors as well as the intensity and duration of the emotive flow.[117] "The tendency is to feel identified with all of these invading maternal emotions in turn and to react to each."[118]

It is this response, according to Lake, that is so determinative for subsequent functioning, especially when the fetus is responding to an emotive flow of severe distress. The result, depending upon the specific intrapsychic dynamics, is the appearance of a particular group of symptoms and signs that characterize a particular psychopathology. Thus, "this intra-uterine interaction is the source of images, perceptions, meanings, values and personality defenses to cope with them."[119]

Lake organized the occurrence of "umbilical affect" and it's effects on the fetus into three general standards of manifestation and four subsequent graded response patterns. The former is primarily based upon the quality and quantity of the "affect- flow" from mother to fetus, while the latter is based upon the response of the fetus to this "affect-flow". Both the response of a woman to her pregnancy and the reaction of the fetus within her to her response are events that actually exist along a continuum of possible responses ranging from absolute and joyous acceptance to horrendous and cataclysmic rejection. In the most general terms, the three main anchors along this

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[115]**ibid.**

[117]**ibid., 21-22.**

[118]**ibid., 21.**

[119]**Frank Lake, "Theology and Personality," 65.**

continuum include joyful acceptance of the fetus by his mother, conscious or unconscious ignorance and/or disregard of the fetus by the mother, and finally, conscious or unconscious rejection of the fetus by the mother. The four "graded responses to increasing degrees of pain due to un-met intra-uterine and pen-natal needs"[120] are also somewhat continuous.

Changes in the mother's environment may occur in the course of the pregnancy that drastically alter the fetal environment. The beginning of the pregnancy may be perceived by the fetus as positive and "ideal", while later changing to a negative perception due to some stressor in the maternal environment. An opposite experience is just as likely, with an initial negative environment, due perhaps to a crisis pregnancy, with a later adjustment and acceptance resulting in a much more positive environment.

1. The Manifestations of "Umbilical Affect"
a. Positive

One possible manifestation of maternal affect is what Lake termed "positive". This pattern is characterized by joy and acceptance. The mother, upon discovery of her pregnancy, exults with joy and happiness, giving rise to a "flow of the mother's positive, aware, attention-giving emotional regard to the developing foetus within her. The development of a positive Foetal Skin Feeling, as the ground of 'the excellent self' may be perceptible."[121] Elsewhere Lake writes that the mother's joy and "recognition of her changed state leads to foetal joy in being recognized, accepted, and indeed, welcomed."[122]

b. Negative

The second general pattern resulting from the maternal-fetal affect flow is what Lake termed "negative". while this manifestation is disconcerting and distressing to the fetus, it is not so because of any perceived attack. Rather, the fetus "wants to feel its presence recognized" and "this is often denied. There is a puzzled, then distressed

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[120]**Lake, "Studies in Constricted Confusion," C68.**

[121]**ibid., C41.**

[122]**Lake.** Tight Corners in Pastoral Counselling**, x.**

sense of being disregarded, unnoticed, of no interest or account in the cosmos."[123] The fetus is frustrated by his mother's "non-recognition of her own body as she works on furiously before and after she knows she is pregnant. It is deeply disturbed by her lack of recognition of herself as pregnant and the fetus as a growing human being inside her when she does know."[124] As such, the fetus cannot thrive because its yearning is fixated. There is often fetal distress in the awareness of the mother's emotional need and at times a response of "trying to help", of attempting to somehow palliate, ease or prevent the mother's distress. This gives rise to what Lake called the "Fetal Therapist."

c. Strongly Negative

The third and final consequential pattern of manifestation and response from the maternal-fetal affect flow is what Lake called "strongly negative". This pattern is what gives this entire paradigm its designation as the "maternal-fetal distress syndrome". As such, and because of it's dire and myriad consequences, it's discussion comprises by far the most material in Lake's thought and works.
When the "umbilical affect" is strongly negative, the fetal distress that results comes directly as a result of an "influx of maternal distress,"[125] to her distress in relation to the world:

> **It may be due to her marriage, to her husband's withdrawal rather than more intimate supporting when he is asked urgently for more than his personality can easily give. It may be due to the family's economic or social distress in a distressed neighborhood . . . If she is grieving the loss of, or nursing a still dying parent, the sorrow overwhelms her and overwhelms her fetus.[126]**

Whatever the cause, "the pain of the world, picked up by the family, is funnelled by the mother into the fetus."[127] Included in this dynamic then, is "both the registering

[123]**Lake, "Studies in Constricted Confusion," 041.**

[124]**Lake, "Theology and Personality," 66.**

[125]**Lake, "Studies in Constricted Confusion," C41.**

[125]**Lake, "Theology and Personality," 66.**

[127]**ibid.**

of the intrusion of the mother's condition, of yearning, anxiety, fear, anger, disgust, bitterness, jealousy, etc. into the fetus, and its own emotional response to this distressed and distressing invasion."[128] Particularly distressing, because they give rise to the "fear of being killed by maternal hatred,"[129] are failed abortions and near miscarriages. when the fetus is invaded by a "black, bitter flood" of "incompatible . . . and alien emotions,"[130] this transfusion leads to an assortment of possible reactions. The fetus may attempt to utilize various coping mechanisms or may seek to actively oppose this "invasion". The mode of contravention varies with Constitutional factors, intensities and duration of stress, as well as previous experiences severe enough to cause conditioned responses."[131] Thus, the "strongly negative" pattern of manifestation and response, of the "foetus being 'marinated' in his mother's miseries"[132] and reacting in a variety of ways, results in a variety of serious disorders.

2. The Graded Levels of Fetal Response

Corresponding somewhat to the three variations of maternal "umbilical affect" are the four variations of fetal response.

a. Ideal

The first such response is the "Ideal". This condition exists when, from implantation onwards, "the fetus in the womb is well-supplied in every way," it's physical, emotional, and spiritual "shopping list" being satisfied by the "hopes of a well-stocked maternal shop."[133] There is a sense of "warm and contented happiness, even of a deeply embodied bliss. . . . The umbilical connection with the mother from

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[128]Lake, "Studies in Constricted Confusion," C41.

[129]ibid.

[130]Lake, Tight Corners in Pastoral Counselling, x.

[131] ibid.

[132]ibid., 141.

[133]Lake, "Studies in Constricted Confusion," C68.

the placenta is wholly satisfactory."[134] There is the communication of peacefulness, tenderness, love; the mother is said to "keep a warm womb."[135] Contingent upon her reaction to her life situation is her ability "to meet the emotional needs of the foetus, and fulfill the archetypal 'blessed mother' image."[136] Ideally, "all the warmth and tenderness of the love she is receiving from her husband, family and neighbors, fortified, perhaps by a spiritual sense that God the Father's exchanges of love are just like this, and as she opens to him too, all her loves mix and are made available to the foetus within her, though she may as yet have only an inkling that she is pregnant."[137]

b. Coping

When the maternal affect flow is less than "ideal" but is still "good-enough" to prevent a loss of trust, the second response level is manifested by the fetus. The "Coping Response" results when there is a "discrepancy between need and proper fulfillment . . . but the main conditions of satisfactory interaction are being more or less met."[133]
There is either a maternal failure to meet perfectly the "essential need for recognition and caring attention" or an "influx of maternal distress,"[134] or both. while the fetus has "lost hope of the 'ideal,"' it attempts to "cope with the deficit or the distress"[140] by accepting the "ongoing exchange with the source person, out of sheer need."[141] These interactive conditions, although not perfect, are "good enough" to permit the fetus to cope adequately with the disparity. It is only when the emotional supplies of the "maternal shop" are less than ideal and there is the recognition of this

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[134]**Lake, "Mutual Caring," 13.**

[135]**ibid.**

[136]**Lake, "Studies in Constricted Confusion," C68.**

[137]**Lake, "Mutual Caring," 14.**

[138]**Lake, "Studies in Constricted Confusion,"C68.**

[139]**Lake, "Mutual Caring," 21.**

[140]**ibid.**

[141]**ibid.**

lack or "badness", that what has preceded. if "ideal" in some sense of the term, is now defined as having been "good". Thus "fetal coping is really saying 'However hard it is to hang on to the acceptance of the mixed good/bad, rough/smooth stuff that comes in the navel, the alternative, to refuse the good because the bad is so bad, is to cut oneself off from life itself."'[142]

The consequences of the "coping level" for later functioning are determined by the severity of the deficit and the consequent reaction. However, since the world is not an "ideal" place where one's needs are always met fully and immediately, the coping level is more predictive of future interaction and thus can serve as a kind of vaccination against future deficits and disappointments.
Lake states that "those who in the first trimester were well able to cope with a mixed bag of maternal emotional inputs are better placed for dealing with later troubles than those for whom it was so 'ideal' as to have escaped their notice."[143] Indeed, this level can serve to "flex the muscles of faith" with the spirit expanding "to include the negative aspects of relationships with increasing and justifiable hope and trust."[144]
A second possible consequence, this time definitively negative and shared with the third and fourth "levels", results from the economy of the exchange between the fetus and his mother. The "good" and "bad" of the "affect-flow" are accepted "with the corollary that the 'badness' must not be fired back at the placenta/mother via the excretory umbilical arteries, but 'loaded up' in the foetus' own body structures. Thus the "badness" is displaced and contained within a body part and may include muscle groupings, or any one of the alimentary, respiratory, or uro-genital tracts. Thus the "ostensible ongoing acceptance of the way of exchange is riddled with ambivalence."[146]

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[142]**ibid., 22.**

[143]**Lake, "Studies in Constricted Confusion." C68.**

[144]**ibid.**

[145]**Lake, "Mutual Caring," 21.**

[146]**ibid.**

The third possible result of the coping response may be that of the "fetal therapist". This result occurs when a constitutionally strong fetus receives an ambivalent or clearly negative affect flow from a weak, inadequate mother. The fetus accepts the burden, often life-long, of doing everything possible to prevent and palliate the mother's stress and resultant distress. This necessitates a denial of and refusal to meet one's own needs.

c. Opposition

When the "emotional store" of the mother is judged by the fetus to be "not good enough" for trustful coping, total opposition results. Between the previous level and this third one something shocking has happened; "distress has shattered the erstwhile trust between the ego and its world."[147] Depending upon the constitutional style and strength of the fetus, the oppositional attitude will vary between being aggressive activity to passive non-cooperation. what is sought is the immediate termination of a "significant margin of pain."[148]
There is no longer an ability to cope, as was true with the previous level. "In the face of too severe, too prolonged, unremitting deficiency of maternal recognition of the fetal presence"[149] "the organism stops being its trusting self, open at the interface"[150] with the mother. Perhaps the fetus has a sense that the "negative umbilical affect" is like "a great nail of affliction or skewer transfixing the foetus at the navel, with an overwhelming invasion of bitter, black maternal emotions."[151]
The fetal reaction to this umbilical exchange varies. Sometimes the fetus can use the "down time" of the night, when the affect flows ceases or is reduced to a trickle, to "regather its incredibly renewable faith, hope, and love, to reaffirm what ought to be, and wait like Prometheus for the day when the carrion birds return to

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[147]**Lake, "Studies in Constricted Confusion," C68.**

[148]**ibid.**

[149]**Lake, "Mutual Caring," 22.**

[150]**Lake, "Studies in Constricted Confusion," C68.**

[151]**Lake, "Mutual Caring," 22.**

attack."[152] A concomitant reaction may be the willing of the death of the source person,[153] which is often repressed because of its "unacceptability." The pain itself must be repressed and "split-off"; "the catastrophic sensations are dissociated from the memory of the hurtful environment. Stable 'character' is based on maintaining this."[154] Life goes on, but with the unconscious scar remaining.

As with the earlier level of coping, these repressed memories are displaced symbolically, either onto some body system or part, or onto an representative "image." Thus, the "disposal of invasive maternal distress and deficiency . . ." is achieved by "displacement and containment within the foetal organism,"[155] and serves to "contain the badness."[156]
In extreme cases of Level 3 opposition, and yet not extreme enough for the transmarginal stress of level 4, there is successive retreat from the umbilical badness to the point where the fetus is symbolically consigned to one small part of the body or compelled to "leave" totally. The remaining good of the fetus itself is "imaged as taking refuge in the head, or as retreating to just the centre of it."[157] when this "good" is compelled to leave the body entirely, it is felt to exist "only outside the body, floating in the space above the head."[158]

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[152]ibid., 23.

[153]Whether this is a symbolic "willing" or not, Lake does not make clear.

[154]Lake, "Studies in Constricted Confusion," C68.

[155]Frank Lake, "Supplement to Newsletter No.39," Clinical Theology Newsletter #39 (Nottingham: Clinical Theology Association, Lingdale, December 1981): wi 1.

[156]Lake, "Mutual Caring," 23.

[157]ibid.

[158]ibid.

d. Transmarginal Stress

When and if the "affect flow" from the mother to the fetus reaches the point where the fetus perceives a "sheer impossibility of keeping up the opposition to the invasive evil which seems interminable and relentless,"[159] then the fourth level has been reached. when the absolute margin of tolerable pain has been reached and passed, paradoxical and supra-paradoxical response patterns result in which "the self turns against itself, willing its own destruction and death."[160]The stance of the fetus switches from being life-affirming to death-affirming. Beyond the margin of tolerable pain, of transmarginal pain, the "foetus longs, not for life, but for death. The plea is not for a relief of the weight, but that it may be crushed out of existence."[161] "There is a loss of 'being' at the center, replaced by a paradoxical desire for 'nonbeing.'

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[159]ibid., 30.

[160]Lake, "Studies in Constricted Confusion," C68.

[161]Lake, "Mutual Caring," 30.

E. THE EFFECTS OF THE PARADIGM

The existence of a "positive umbilical affect" flow wherein "powerfully impressive experiences from the mother and her inner and outer world . . . reach the foetus"[163] and its response in turn is "ideal" because of a prenatal sojourn in the "the womb of a gloriously happy and fulfilled wife and mother-to-be"[164] is somewhat rare.

That during fetal life this person was well-supplied in every way, that the birth process went smoothly, that the maternal bonding was immediate and strong, and that the environment of infancy and early childhood was affirming, in all likelihood results in an adult whose psychological and emotional adaptation is, while not perfect, near ideal. They have the psychic tools to cope well with the exigencies that dynamic existence gives rise to. They, as Lake describes them, are those with "more robust natures, nurtured in kinder wombs, [and therefore] can shrug off . . . disappointments, or bear them, finding no antecedent pattern of neglect to latch on to."[165] They, in turn, visit the benefits of their "history" on their progeny to the "third and fourth generation.

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[163]Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 5.

[164]Lake, "Theology and Personality," 65.

[165]Lake, "Supplement to Newsletter No.39," 2.

That the great majority of persons do not share this ideal "history" gives rise to two other major categories of adults, the "normal" and the "abnormal" (ie. neurotic and psychotic), and very often these categories overlap, sometimes simultaneously and sometimes serially. The first includes those who cope with life by "murdering the truth" successfully, those who "go along with it"[166] and by the dynamics of repression succeed in keeping the truth of the early trauma and tragedies of fetal life safely at bay. Lake described this dynamic:

> **As soon as the tragedy of human life impinges upon the infant, indeed upon the fetus still within the womb, the truth of what has happened is immediately murdered by repression and turned into a lie which denies that it ever happened.[167]**

Lake continues to describe this "average man:"

> **His is a life lived over the top of the tissue of closely woven lies, a fabric of falsehood. . . . Therefore, the line between the 'normal' person and the 'neurotic' is not that the normal personality can function without the intrinsic falsehood whereas the neurotic person cannot. Quite the contrary. We call a person 'normal' if the self-deception that he uses to repress, deny, displace, and rationalize those basic wounds that are ubiquitous in human beings from babyhood works quite well. He is 'normal' in so far as his defenses against too much painful reality are as successful as (all unbeknown to the person himself) they are meant to be.[168]**

When the "success" of these defenses against these "basic wounds" begins to flag and the "murdered truth" begins to emerge into present reality, often in an altered form, then the second group of persons emerges: those who are considered psychologically deficient, neurotic or even psychotic. The "normal" person often hides a cryptic "wounded" person who emerges only due to some present life stressor. The manifestation of this emergence takes the form of presenting complaints, which are recapitulations of and reverberations from the earliest fetal experiences, perhaps, as Lake described, in "the uterus of a desperate, dissipated or dishonored woman whose hatred of life may take her own in suicide or that of the foetus in an attempted abortion which didn't quite come off."[169]

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[166]**D.W. Winnicott as quoted by Lake, "Studies in Constricted Confusion," C68.**

[167]**Lake, "Theological Issues in Mental Health in India," 65.**

[168]**ibid., 118.**

[169]**Lake, "Theology and Personality," 65.**

The various maternal-embryo/fetal dynamics of the blastocystic and implantation stages, of the rest of the first trimester, of prenatal, peri-natal and postnatal life, gives rise to "wounds" and the consequent reaction to these wounds which manifest themselves in particular patterns. The original formation of these particular coping pattern depends upon several components. The intensities and duration of stress, the "input" point in the "dynamic cycle" at which the stress comes, the active or passive reaction of the fetus to this stress, and the constitutional "diatheses"[170] are all important predictive factors.

As was noted in the previous chapter (see Fig. 2), diminution in resources at the "being" phase of input in the dynamic cycle gives rise to the most severe "personality disorders, the most disruptive of healthy self-hood and relationships":[171] the schizoid, hysterical, and anxiety-depressive reactions.

These "reactions" are all mediated by the severity and duration of the diminution and the response of the fetus. A reduction of maternal supplies at the "well-being" input phases results, depending again upon the severity and duration of the stress and the response of the fetus, in the maladaptive patterns of paranoia and anxiety-less depression.

Whatever the stress and whenever it strikes, the "womb-distressed" person, Lake writes, "complains as if it remembered the bad times it had been through. It reacts to the world around it as if it were still in the bad place, still having to 'feel its keenest woe.' It reacts defensively as if the attack were till going on."[172]

These reactive coping patterns, once used, are then utilized again and again, setting up particular paradigms of "wound management" that are recapitulated endlessly into adulthood. Lake writes:

> **Similar 'neglect-shaped' experiences in infancy and childhood plunge these unfortunately damaged creatures into an excessive and seemingly unreasonable degree of distress, adding to their new injury all the catastrophic feelings and sensations that belonged to the first one.[173]**

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[170] **Lake, "Treating Psychosomatic Disorders Relating to Birth Trauma."**

[171] **Frank Lake, "The Dynamic Cycle," 8.**

[172] **Lake, "Supplement to Newsletter No.39," 4.**

[173] **ibid.**

Thus Lake states:

> **All the common diagnostic entities of psychiatric practice, hysterical, depressive, phobic, obsessional, schizoid, paranoid, have their clearly discernable roots in this first trimester. Each of them constitutes a particular view of the foetal-placental world and what goes on in it. . . .it is important to recognize these 'world views,' since they are the same fixated patterns of perception which impose themselves, more mistakenly than accurately, on roughly similar events throughout life.[174]**

When there is type of "block" from mother to fetus of "being itself", it is, as Lake described it, "an almost irremedial disaster. It is of all things the most destructive of the life of the organism."[175] Three main psychopathologies or "wound management reaction patterns" result: anxiety depression (also called involutional melancholia and/or accidie,)[176] the hysterical personality reaction, and the schizoid personality disorder (in its most serious manifestation called schizophrenia).

1. The Anxiety-Depression Reaction

An active response, due perhaps to constitutional strength, to a diminution of "being-itself" results in anxiety depression. Lake wrote:

> **Depression and anxiety emerge from our deepest experiences of loneliness, of being unrecognized, over-looked, ignored, neglected, forgotten, disregarded, dropped, slighted, unnoticed, scorned, given the go-by.[177]**

Even though the fetus, in the threat of "objectivelessness", would like to "block, squeeze, push, cut or pluck off the [umbilical] cord,"[178] to do this would be to destroy himself. He quickly learns that his active response of anger and rage threaten to

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[174]Lake, Tight Corners in Pastoral Counselling, 24

[175]Lake, "The Dynamic Cycle,"

[176]Frank Lake, "Anxiety Depression,"

[177]Lake, "Supplement to Newsletter No.39,"

[178]Lake, "Studies in Constricted Confusion," C-42.

destroy it's own environment by risking a rupture with the all-powerful mother and therefore must be dissociated from consciousness and immediately repressed. The anger and rage are controlled by "turning its force against the self" and splitting off the memory to the unconscious. When, to this repression, is added a reactive move, "the compulsive development of a rigidly compliant and mild personality to offset the hidden rage, we are in the presence of the dynamics of anxiety depression."[179] All of this "surging conflict is recorded in the history of early uterine life"[180] and there is "overwhelming evidence that this sense of our presence being painfully overlooked by the person whose loving recognition [ie. "being-in-relatedness"] is more necessary than mere physical existence, occurs within the early weeks and months of life in the womb."[181]

That this same basic process is replayed again and again through the pre-, peri-, and post-natal stages results in a dam of repressed anger and rage. Immense emotional energy is expended by the ongoing attempt to not remember these painful memories. In addition, the erection of a defense of idealized external behavior (ie. a reaction pattern) exactly opposite of the rage within serves to ward off from consciousness what is truly within. Rage, distrust, despair and apathy within are converted respectively into compulsive compliance, idealization, optimism and doggedness without.[182] This process is propelled by fear of the consequences of the expression of the rage within. Lake states that "the murderous rage is so strong that to save others, a man may kill himself."[183]
These are the dynamics of depression. That this is common is suggested by Lake when he relates that 75% of persons suffer from depression at some time.

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[179]Lake, "The Dynamic Cycle," 10.

[180]Lake, Tight Corners in Pastoral Counselling, 101.

[181]Lake, "Supplement to Newsletter No.39," 2.

[182]Lake wrote "The panic and dread, emptiness and fear, rage and envy, are all dealt with within the repressive layer, and 'appear' in consciousness only as their opposites, confidence and pride, capability and calm, compliance and generosity. The person is entirely unaware of the contents of his unconscious mind, and is aided and abetted by a variety of mental mechanisms in remaining so." (Lake, "The Dynamic Cycle," 17).

[183]Frank Lake, "The Bearing of Our Knowledge of the Unconscious on the Theology of Evangelism and Pastoral Care," 68.

Lake writes:

> **There are many depressed people whose inner conflict consists in the tiring tussle between ancient rages within, fanned into smoldering anger by present-day frustrations, and the forces of fear that keep such feelings under control. They never burst into flame in consciousness because of the forceful repressive and suppressive mechanisms that control them so totally that such people will deny that they are angry.[184]**

The only cure is to help them become aware of the cauldron within and to attempt to get in touch with its primary and early causes. This is where Lake's use primal therapy comes in.

2. The Hysterical Reaction

The hysterical and schizoid reactions are really one reaction pattern on opposite sides of the "the abyss" of trans-marginal stress.[185] Unlike the active response of the anxiety depression reaction, the hystero-schizoid response, perhaps due to constitutional weakness, is passive in the face of the diminution and loss of "being-itself." Referring to the hystero-schizoid reaction to distress, Lake writes:

> **A primal injury to the personality has split its roots into two quite separate systems. One grows up to seek . . . the world outside itself. [whereas] the other root grows up into the world of the mind, the inner world of reflection reason, intellectual and mystical resources.[186]**

The fetal reaction to distress that grows from the root of externalization is the hysterical pattern, which results from the loss or diminution of "being-itself", with a concomitant rise in apprehension leading finally to panic. This panic, stemming from non-attention, from non-recognition of "being" is defended against by a reaction pattern of compulsive attention-seeking behavior, often extremely extraverted, and compulsive attachment. This insures that continued "being" (and "well-being"), not given in the intra-uterine period and thus not stemming from within, continues to come to the hysteric from outside himself. His behavior is designed to manipulate and induce

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[184]Lake, Tight Corners in Pastoral Counselling, 98.

[185]Lake "Studies in Constricted Confusion," C69.

[186]Lake. "The Bearing of Our Knowledge of the Unconscious on the Theology of Evangelism and Pastoral Care," 33.

a steady flow of "being", of attention, of recognition. Thus any behavior that results in this "goal" is utilized, including histrionic self-dramatization, seductivity, exhibitionism, oversuggestibility, exaggeration, irrational outbursts and impulsivity. That this behavior compels others to give reluctant attention and acknowledgement is simply a recapitulation of the original dynamic, when the resources of "being" were not freely given, but withheld and constricted. The dependent "being" relationships are superficial because there is never satisfaction of the primal hunger for "being", instead there remains the constant anxiety that the source of "being", ever reluctant, will act capriciously and constrict the supply. This leads to further behavior designed to prevent this from occurring.

Since the primal hunger for "being" remains, the hysteric is always "hungry". He is "hungry" for touch and talk, an emotional sponge.[187] Since "being" has never been internalized, and even though much "input" in the form of "being" and "well-being" seems to take place, the "status" of the hysteric is so spirit-impoverished and egocentric as to prevent any "output"; all "output" energy is directed toward gaining, holding, and maintaining the superficial "input" from others. "Achievement" is limited to self-glorifying, self-assuring, short-term goals.

3. The Schizoid Reaction

When the loss, constriction and diminution of "being" occurs to a point of absolute intolerability then the hysterical becomes the schizoid. The hysteric seeks "being" outside himself whereas the schizoid detaches himself from the external world and lives reflective self-creation. Lake wrote: Being essentially self-creating, it [the schizoid] continues to be self-subsistent. It feeds upon itself, turned in upon its own mental processes.[188]

What separates the hysterical from the schizoid and makes them seem the very antithesis of each other is the intervention of a trans-marginal break, wherein there is a paradoxical switch that translates the hysterical wish for life and "being" into the wish

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[187]Frank Lake, "The Hysterical Personality Disorder," chart H.a., in Clinical Theology.

[188]Lake, "The Bearing of Our Knowledge of the Unconscious on the Theology of Evangelism and Pastoral Care," 33.

for death and "non-being." Similar to the genesis of the hysterical reaction type, the schizoid reaction is passive and commences in response to mounting anxiety in the light of the constriction of recognition, in the light of the diminution of the resources of "being." First, there is conscious and then unconscious panic. There is a margin of tolerance that ends "at a point determined by constitution, heredity and recent experience,"[189] which when passed, results in ultra-maximal stressing and dread. "The heart breaks and there is a falling headlong into the abyss of dread and non-being.

The self is annihilated. God is dead. . . .There is an identification, not with human beings, but with non-being."[189] Despair, intolerable dereliction, an overwhelming sense of forsakeness, feelings of futility, hollowness, nothingness, inferiority, depersonalization, uselessness are characteristic of this "death of the spirit." Paradoxical reactions result.

Previous to the trans-marginal stress, the fetus desired to be affirmed, recognized, and loved; after he desires to be left alone and isolated. Pain is now embraced where previously pleasure was pursued. A desire for death replaces a desire for life. Perceptions are disorganized and include hallucinations and delusions. The sense of time is inverted. There is self-scorn, self hatred, and self-destruction. A sense of ontological guilt that "I ought not to exist" is characteristic.

That all this had its root in the first trimester was strongly affirmed by Lake. The origins of affliction, he wrote, that are responsible for "many of the characteristic and severely self-damaging features of schizoid affliction. . . . must be firmly placed in the first trimester, within three or so months of conception."[191] A horribly bad umbilical flood has invaded the fetus "overrunning all defensive barriers, penetrating the whole body."[192] Thus, all of the body becomes loathsome to the person, and the ego splits itself off from what is now considered revolting. The "good" takes refuge in the head, or in extreme cases, in a disembodied "spirit". There is a basic awareness of "to be me is to be bad."

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[189]ibid., 34.

[190]ibid.

[191]Lake, Tight Corners in Pastoral Counselling, 23.

[192]Lake "Studies in Constricted Confusion," C42.

This experience of dread and the "abyss" is split-off from consciousness and deeply repressed. "A great fear and hatred of this weak, hurt, wretched, humiliated, annihilated, disintegrated self and spirit, keeps it most rigorously repressed and defended against as 'not-me.'"[193] Instead of the compulsive attachment of the hysteric, there is compulsive detachment, distrust and introversion. There is a strenuous avoidance of commitment and intimacy coupled with a clinging to autonomy. There is emotional flatness, spiritual poverty, and overintellectualization. Contempt for others hides envy and jealousy. Sexual expression is often fetishistic and impersonal.

Since there has been no sense of inculcated "being" and consequently no sense of "well-being" at the input phases, the schizoid sufferer has nothing to expend in the "output" phases. Unlike the hysteric who looks for "being" and "well-being" from others outside himself, the schizoid had no "being" and gains sustenance ("wellbeing") from ideas. There is no essence of integrated self-hood and no self-identity. Consequently, the "status" and "achievement "of the schizoid are not characterized by giving, but by negativity.

While the hystero-schizoid and anxiety depressive reactions result from a loss of "being", the depressive and paranoid reactions are the outcomes of a blockage, constriction or diminution of "well-being". Thus, basic "being" is not the issue and is indeed assumed. What is at risk are the ongoing resources that allow for continued growth and conveyance of an inflow of affirmation, love, kindness resulting in "good spirits, courage and personal vitality."[194]

4. The Paranoid Reaction

When the fetal reaction to deprivation of sustenance is passive, the paranoid personality reaction results as a defense against the primal loss of "well-being." "Being-itself" is secure and thus the integration of ego is not threatened. Rather, the root experience of the paranoid is the gradual loss of a sustaining supply in relation to his own increasing needs for physical and emotional sustenance.

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[193]**Frank Lake. "The Schizoid Personality Disorder," chart S.a., in Clinical Theology.**

[194]**Lake, Clinical Theology, 133.**

When this occurs in the first trimester, and Lake was insistent that it did,[195] the umbilicus and placenta gradually shut down their flow of supplies. The fetus has the sense of having its rights violated and of being denied, with the attendant feelings of worthlessness, humiliation, helpless, inferiority. He feels undervalued and has an extremely low sense of self- esteem. These feelings are eventually split-off, denied and repressed and reaction patterns to maintain the repression take hold. The main line of defense is usually projection, in which the paranoid unwittingly attributes to others his own denied desires and faults. Even though he projects an air of sufficiency and confidence, sometimes by belittling others, defensiveness, suspiciousness, argumentivity and hypersensitivity to criticism remain.
Because his "rights" were previously violated, he is determined to exercise his rights. Since self-esteem ("status") is constantly being established, he is constantly and vigilantly on the lookout for possible detractors. Thus, he never enjoys "status" because it is constantly in flux, always awaiting the next indication that it exists. His achievements are trumpeted and failures are explained away as someone else's fault. He is constantly trying to prove his point and prove himself to the world. Thus, the "output" of his "achievement" is always in the service, not of others, but of proving his "status."

5. The Depressive Reaction

Just as an active response of a constitutionally stronger fetus lead to depression when the sources of "being" are restricted, so an active response to the constriction of "well-being" also results in depression. Whereas the first also includes anxiety because the very "being" of the organism is threatened, the depression or "accidie" resulting from the blockage of "well-being" does not have the dimension of anxiety to it. The fetus reacts to this cutoff of supplies with rage, bitterness, sullenness and resentment. There is "ample experience of unmet need, of rage at the injustice of it."[196]

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[195]**"The baby felt identified with weak-being, with emptiness and meaninglessness, with a tearful sense of inferiority and low self-esteem. Well, with absolutely no alteration, you can take that into the first trimester. . . . I assure you that this is intra-uterine, every single bit of it. We've had it in hundreds and hundreds of people." (Lake, "Post Green Speech," 167-168).**

[196]**Lake, Tight Corners in Pastoral Counselling, 101.**

Behind the secondary process of rage is the primary cause, "the situation of basic needs which the mother could not or did not meet." This rage is restrained, sometimes out of fear and sometimes out of sympathy for the mother who seems not to have any supplies to give.

That in the normal mother-fetus relationship the umbilical exchange between mother and fetus is mutual (ie. nutrients from mother exchanged for waste from fetus) is undeniable. However, the exchange of supplies between mother and fetus is most often perceived to be unidirectional. It is the fetus, because of its relative lack of strength, that is usually supplied and/or "invaded" by the mother's "affect flow" and not vice versa. However, the existence of the umbilicus provides for the mechanism allowing a reversed flow to occur, and indeed, this does occur. Lake states that a reaction at times arises where the "foetus feels a need to give to this poor, weak mother. Well aware that it has little to give because little has been received, none the less there can be a fateful sense that 'it is my role to keep her alive."'[197] Thus, when a constitutionally strong fetus receives an ambivalent or clearly negative affect flow from a weak, inadequate mother, the "fetal therapist" form of depression results. The fetus accepts the burden of doing everything possible to prevent and palliate the mother's stress and resultant distress. This necessitates a denial of and refusal to meet one's own needs.
This often results in a life-long pattern of a reversed flow of love and caring, from child to parent. At the root of this behavior, even involving adult children with their parents, is the "valiant attempt to get a small modicum of maternal tenderness."[198] Also recapitulated into adult life is a denial of and refusal to meet one's own needs. In "dynamic cycle" parlance, there is no input, and thus there tends to be no output. Since the "input" sense of "being" is tenuous and the input sense of "well-being" is almost nonexistent, the "output" phases of status and achievement are meager.

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[197]**Lake, "Theological Issues in Mental Health in India," 20.**

[198]**ibid.**

6. The Psychosomatic Reaction

Whereas the "fetal therapist" response pattern results from a dysfunctional reversed flow of fetal-maternal exchange, another common "wound management" coping pattern results from a mixed affect flow from mother to fetus. The "good" of the needed nutrients of "being" and "well-being" are mixed in with the "bad" of the "foetus being 'marinated' in his mother's miseries."[199] In order to get the "good", the "bad" must also be accepted "with the corollary that the 'badness' must not be fired back at the placenta/mother via the excretory umbilical arteries, but 'loaded up' in the foetus' own body structures."[200]

Thus the invasive "badness" of both the experiences themselves and the repressed memories that follow is dealt with in one of two ways. The first and most common involves the displacement and containment within the fetal organism.[201] This is done either by displacement into an emotional state such as depression or paranoia, or by displacement in or on a body part. The second mode of dealing with the "badness" involves a symbolic displacement onto some representative image.

When a displacement occurs onto or into a part of the body, then psychosomatic symptomology results. In Lake's 1969 survey of clients who had experienced an LSD-assisted abreaction of pre- or peri-natal events, 34 out of 57 reported some type of psychosomatic affliction.[202] Lake saw the fact that none of these reported a worse condition as a result of the experience and 16 reported an improvement as an indication of the connection between their present complaints and the early genesis of them.

According to Lake, somatic displacement of early emotional wounds accounts for much of the presenting complaints of "sickness." Depending upon which constituent segment of the body is the "diatheses," and thus which is displaced upon, different somatic 'diseases'[203] or outcomes result.

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[199]Lake, Tight Corners in Pastoral Counseling, 141.

[200]Lake, "Mutual Caring," 21.

[201]Lake, "Supplement to Newsletter No.39," wi 1.

[202]Fifteen reported migraines, five asthma, seven allergic rhinitis, three arthritis, four dermatitis. (Lake,"Treating Psychosomatic Disorders Relating to Birth Trauma," 232).

[203]This is taken from four Lake sources:

1. "Studies in Constricted Confusion," C-41, C-42, C-59 and C-60;
2. "Supplement to Newsletter No.39," wi 1;
3. Tight Corners in Pastoral Counselling, 30-7;
4. Frank Lake, "The Maternal-Fetal Distress Syndrome. Negative Umbilical Affect: Defenses against invasive pain by symbolic displacement and containment." One page chart (Nottingham: Clinical Theological Association, Lingdale).

Displacement onto the head, face, or scalp, which is usually the last refuge of the "good" as it is being invaded by the "bad', results in flitting or persistent headaches, migraines, facial tics, and perhaps Sydenham's chorea and Giles de Ia Tourette syndrome. Specific naso-pharyngeal displacement results in a chronic running nose and a susceptibility to catching colds. Displacement into the mouth effects oral tension, a clenched jaw, and a compulsive biting the skin of the mouth whereas tightness in the throat follows from displacement into the throat. Transfer of the "badness" to the eyes results in conjunctivitis, or either 'shame-faced' aversion of eye contact or visual (ie. 'if looks could kill') daggers. When the 'badness' is shifted onto respiratory tract and lungs, the bronchial musculature, usually used to 'expel" the bad, now can also paradoxically 'contain' it. Coughing, hawking, spitting, along with a general noisy and angry demeanor result. Cystic Fibrosis, wherein there is an attempt to expel the mucus without the fluid to do it, is representative. Likewise, bronchitis, asthma, hay-fever and myriad other allergies result due to an hyper-sensitivity to various 'foreign' environmental substances which can 'enter and cause harm" and are thus symbolic of the invasive entering and harming of the 'foreign" flood of maternal affect.
Transference of the 'badness" to the musculo-skeletal components of the body results in chronic back pain, aching muscles and joints, cramps and stiffness, local swelling of hands, feet, legs, ankles, and arms. Nail-biting, lumbago and arthritis, as well as the more specific possibilities of sero-positive Rheumatoid Arthritis, Sjogren's disease, and carcinoembryonic antigen (CEA) follow displacement into the feet, knees, ankles, wrists, hands, and fingers. Hypertension and stroke, atopic eczema, anal and genital paroxysmal itching, urticaria[204] and localized dermatitis, are the outcome of displacement onto the heart and skin respectively. Nausea, vomiting, dyspepsia, flatulence, bloating, anorexia nervosa, diarrhea, mucous and ulcerative colitis, colic, peptic ulcers, diverticulitis, hypochondriasis and constipation all derive from alimentary tract displacement.
The feeling of having a bladder or accumulations of badness somewhere underneath the sternum . . . [such that] it feels to be . . . filthy, black, bad, heavy, lumpy, gooey, brown, green, bitter, shitty"205 is what Lake terms "sub-sternal displacement". Slightly farther down in the body are. the bladder, genitals and genito-urinary tract. Displacement here produces the irritable bladder syndrome, frequent and urgent micturition, enuresis, pre-menstrual tension, dysmenorrhea, amenorrhea, vaginitis, sexual frigidity and impotence.
According to Lake, all of these result from displacement of experiences and memories resulting from an invasive negative or strongly negative affect flow from mother to fetus. Lake affirmed that this type of displacement results because of a specific "diatheses," and thus in a specifically psychosomatic outcome. When the "diathesis" is, mental or emotional, then the more classic psychiatric categories result.
This is the M-FDS in its basic paradigmatic format. Lake makes the application of its consequences first to the physiological and psychological dimensions and then to the theological.

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[204] **Raised weals of red or white skin.**

[205] **"Supplement to Newsletter No. 39," w11.**

CHAPTER 3

THE EVIDENCE FOR A SCIENTIFIC "PARADIGM"

Before the "revolutionary implicatons" of Lake's assertions can be seriously considered, the underlying validity of the paradigm" itself must be verified. Is there evidence to corroborate the central assertions of the M-FDS so as to allow it to be generally accepted as a system of ideas giving definition to the problems and methodology of psychodynamics?[1]
The methodology required to answer this question first necessitates some kind of central definition of what is being affirmed so that it can be accepted or rejected based upon the evidence. Thus stated, the M-FDS has been defined in the following manner: "the behavioral reactions of a pregnant mother affect her fetus in ways that contribute to its perceptions of itself and of its environment in the womb; and these perceptions persist into adult life."[2]
This definition, however, is inadequate for our purposes because fetal perceptions of the self and the environment are incapable of being ascertained. That adult perceptions of the self and the environment are based somewhat on the fetal experience may be true, but again, it is impossible to ascertain their origin. Thus, for the purposes of this endeavor, the general definition of a maternal-fetal syndrome is as follows: "the fetal environment as mediated by the mother affects fetal movement, sensation, memory, learning, affect, and behavior."
At its most basic level, the M-FDS is simply stating that the environment of the pre-born baby influences his or her psychological development in both the immediate and long-term senses. That this is assumed to be true of postnatal existence, even of infants, is generally accepted. Wide-ranging research studies have clearly shown the effect of both positive and negative environmental influences on subsequent perception and behavior.
If the same is to be said regarding prenatal experience, as Lake affirms, then the same or similar mechanisms that allow such influences to occur postnatally must be shown to exist prenatally. What allows environmental influence postnatally is the ability of an organism to

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[1]Moss, ~Frank Lake's Maternal-Fetal Distress Syndrome and the Primal Integration Workshops-Part II."

[2]Moss, "Frank Lake's Maternal-Fetal Distress Syndrome: Clinical and Theoretical Considerations," 204.

apprehend the environment, this through the senses and nervous system. Thus, the same applies prenatally. Is the brain and nervous system sufficiently developed to allow for neural transmission? Are the various specialized neural sense receptors capable of visual, tactile, auditory, gustatory, and olfactory sensation? Is the nervous system sophisticated enough to allow for intermodal fluency between the senses, for cognition, memory, learning, habituation, imitation, conditioning, and emotions?

Further, can the pre-born not only apprehend the environment, but also express themselves to the environment through crying, motor movement, and facial expressions? Is there such a thing as a prenatal personality?[3] If the above questions can be substantially demonstrated in the affirmative by the evidence, then it could be said that the structure and mechanisms which would allow for the M-FDS to exist are indeed present.
Two lines of "evidence" are examined in this chapter. The first is a brief examination of the historical precedence to some of the main ideas Lake postulates. The second and largest body of evidence examined is the research documentation for embryological and fetological aptitudes with regard to the various morphological and psychological dimensions.

A. Historical Precedence for Lake's M-FDS
1. Pre-20th Century Embryological and Fetological Thought

a. Early Western Thought
The idea that the prenatal environment affects the developing organism is certainly not new or original with Frank Lake. Many early thinkers speculated, some accurately and others mistakenly, regarding fetal behavior and psychology as well as the influence of maternal and/or environmental determinants of fetal outcomes. Democritus and Epicurius both surmised

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[3]A.W. Liley writes: "One dictionary offers [as a definition for personality] 'what constitutes an individual as a distinct person,' but does not define what the 'what' is. Another dictionary assens 'the state of existing as a thinking intelligent being.' This definition might lead to the inference that personality increases 'pro rata' with Intelligence. . . . My copy of Ken Stallworth's Manual of Psychiatry (Christchurch, N.Z.: Peryer, 1950) is more help with the definition that 'personality is the individual as a whole with everything about him which makes him different from other people,' because we can certainly distinguish foetuses from each other and other people. With the next sentence - 'personality is determined by what is born in the individual in the first place and by everything which subsequently happens to him in the second' - we are really in business. Not only can I tell you what is apparent of what is born in the foetus, but I can also describe the environment in which he lives, the stimuli to which he is exposed, and the responses which he displays." (A.W.Liley, "The Fetus as Personality," Pre- and Peri-Natal Psychology Journal 5 [1991]: 191).

that the embryo ate and drank "per os"[4] Plutarch later compared these views to that of the earlier Alcmaeon who postulated a "sponge" theory of prenatal nourishment.[5] Writing about the same time Empedocles theorized regarding the origin of twins, but very interestingly also affirmed the profound influence of the maternal imagination upon the fetus to the point that it could be guided and interfered with at will.[6]

With the work of Hippocrates and those associated with him, namely his son-in-law Polybus, embryology takes a great leap forward, particularly with his treatise On Semen and on the Development of the Child. Hippocrates rightly surmises that it is the maternal blood flow which nourishes the embryo. Further, the umbilical cord is associated with fetal respiration.[7]

During the next century (4th c. BC), Diodes of Carystus in Euboea extended embryological thought through his examinations and dissections of fetal remains. He reported that he had found traces of the head and spinal cord in a 27-day-old embryo and was able to clearly distinguish the human form at 40 days.[8]

With the possible exception of Hippocrates, Aristotle stands out among the early Western thinkers as the most important advancer of embryological science. Due to his extensive dissections of various animals and animal embryos, his observations filled several major works of general and comparative biology and embryology, among them

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[4]D. Gupta and B. Datta "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development." in Prenatal and Perinatal Psychology and Medicine, ed. Peter G. Fedor-Freybergh and M.L. Vannessa Vogel (Park Ridge, NJ: The Parthenon Publishing Group, 1988), 514.

[5]Plutarch wrote: "Democritus and Epicurius hold that this imperfect fruit of the womb receiveth nourishment at the mouth. . . . But AIcmaeon affirmeth that the infant within the mother's wombe, feedeth by the whole body throughout for that it sucketh to it and draweth in a manner of a sponge." (Plutarch, Moralis, trans. Philemon Holland [London: Hatfield, 1603]; quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 514).

[6]H. Diels, Fragmente der Vorsokratiker (Berlin, 1906), quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 514.

[7]T.U.H. Ellinger, Hippocrates on Intercourse and Pregnancy (New York: Schuman, 1922), quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 515.

[8]Clifford Allbutt, Greek Medicine in Rome (London: Macmillan, 1921), quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 516.

On the Generation of Animals, The History of Animals, On the Parts of Animals, On Respiration, and On the Motion of Animals. He correctly understood the nature of fetal nutrition[9] and he anticipated several important aspects of embryology, among them genetics[10] and enzyme actions.[11] Interestingly Aristotle also speculated that sensation is first acquired during pregnancy.[12]

Following Aristotle, embryological understanding in the western tradition stagnates or, in the cases of the Stoicism and Epicureanism, even regresses. There are, however, several persons of note. Herophilus of Chalcedon, a member of the Alexandrian School and writing in the 3rd c. BC made many dissections of embryos and described in some detail the ovaries, Fallopian tubes, and the umbilical cord.[13]
In addition to Greek thinkers, two Romans[14] also made contributions toward the understanding of embryology that lasted well into the Middle Ages. In the first c. AD, Sorenus

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[9]Aristotle, Generation of Animals, trans. and ed. James Loeb (Cambridge, Mass: Harvard Univ. Press, 1942), 740a 24-740b 14 (197-199); 746 a20-28 (241-243).

[10]The end is developed last, and the peculiar character of the species is the end of the generation in each individual. This means that the embryo attalns the point of being definitely not a plant before it attalns that of being definitely not a mollusc but a horse or man." Aristotle, Generation of Animals, quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 518.

[11]"The action of the semen of the male in "setting" the female's secretion in the uterus is similar to that of rennet upon milk. Rennet is milk which contains vital heat, as semen does. and this integrates the homogeneous substance and makes it "set." As the nature of milk and the menstrual fluid is one and the same, the action of the semen upon the substance of the menstrual fluid is the same as that of rennet upon milk. Thus when the "setting" is effected, ie. when the bulky portion "sets," the fluid portion comes off; and as the earthly portion solidifies membranes form all round its outer surface." (Aristotle. Generation of Animals, 739b 22, [191-193]).

[12]"Having settled upon these points we may proceed to those which immediately follow. First then: the habit of the young of all animals, especially those of animals which bring forth their young imperfect, once they have been born, is to sleep, because they are in fact continually asleep within the parent from the time they first acquire sensation [emphasis mine]." (ibid.. 778b20-25; see also 736a30-736b25).

[13]Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 529.

[14]Gupta and Datta also write the following: "The name of the Ptolemaic queen, Cleopatra (who died in the year 30 BC), is also mentioned for carrying out investigations on the fetal developmental processes. However, this is legend and the source of it cannot be traced. It is said that Queen Cleopatra continued such investigations by dissecting live female slaves impregnated by prison guards at known intervals of time from conception - following the procedure of Hippocrates with regard to hen's eggs. This Alexandrian experiment established that the male fetus was complete in 41 days and the female in 81." (Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 530-531).

of Ephesus wrote a book titled On the Disease of Women, which, although largely obstetrical, also shows an advanced understanding of embryology.[15] Tertullian, arguing that the fetus is already a living being in the uterus, stated "Soranus . . . [was] sure that a living creature had been conceived,"[16] thus implying at least a rudimentary acknowledgement of the separate life of the fetus.

The second Roman of note was Galen, who lived in the 2nd c. AD and wrote three works touching on embryology with the intriguing titles of On the Anatomy of the Uterus, On the Formation of the Fetus, and On the Question as To Whether the Embryo is an Animal.[17] Galen called the process of intrauterine life or embryology "genesis" and while much of his descriptions of it are inaccurate, he alludes to the processes histogenesis[18] and organogenesis[19] (or growth and differentiation) as "alteration" and "shaping" or "molding."[20] The period of "genesis", according to Galen, includes four distinct stages[21] and parallel to this development, "the embryo also rises from possessing the life of a plant to that of an animal."[22]

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[15]Soranus of Ephesus, Die Gynakologie der Soranus von Ephesus, trans. H. Luneberg (Munich, 1894), quoted by Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 530.

[16]Tertullian, quoted in Ralph Jackson, Doctors and Diseases in the Roman Empire (Norman Okla: Univ of Oklahoma Press, 1988), 109.

[17]Galen, On the Usefulness of the Parts of the Body, vol. 2, trans. Margaret Tallmadge May (Ithaca, N.Y.: Cornell Univ. Press, 1968), 655-680.

[18]Tissue-production.

[19]The ordering of tissue into organs.

[20]"Genesis, however, is not a simple activity of Nature, but is compounded of alteration and of shaping. That is to say, in order that bone, nerve, veins, and all other [tissues] my come into existence, the underlying substance from which the animal springs must be altered, and in order that the substance so altered may acquire its appropriate shape and position, its cavities, outgrowths, attachments and so forth, it has to undergo a shaping or formative process." (Galen, On the Natural Faculties, trans. Arthur John Brock [Cambridge, Mass.: Harvard Univ. Press, 1963], 19).

[21](1) an unformed seminal stage; (2) a stage in which the "tria principia" are engendered, the heart, liver and brain; (3) a stage when all the other parts are mapped out, and (4) a stage when all the other parts have become clearly visible." (ibid., quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 532).

[22]ibid.

b. Early Non-western Thought

Parallel to and even preceding the early Greek and Roman embryological advances, was an active tradition of non-westem speculation regarding embryological and fetal processes. Most prominent among them are a group of Indian theorists, the earliest being Susruta, around the late 6th or early 5th century BC.

Similar to the early Greek and Roman thinkers, much of the speculation is faulty, but much anticipates later discoveries. Modern genetics is prefigured with Susruta's affirmation that "the bodily and mental characteristics of the future child, whether manifest or latent, are pre-determined."[23] He divided the "genetic" contributions of each parent according to sex, with the father contributing the "stable and firm components" of the body (ie. hair, nails, bones, nerves, arteries, veins, teeth, tendons and semen) while the "soft components" (blood, fat, muscles, heart, bone-marrow, liver, spleen, intestines, umbilicus, rectal parts, and sex organs) result from the mother's "genetic" contribution. Emerging from the "physiological and spiritual harmony" of the parents are the "genetic" characteristics of intellect, health, valour, constitution, and "brightness of complexion."[24]

Susruta also clearly articulated a sophisticated understanding of interdependency of the feto-placental unit, both physiologically and psychologically. He noted that nourishment from the mother's body begins by means of the umbilical cord as soon as the fetus is "endowed with life"[25] and advocated a variable diet for mother and child depending upon the needs of the growing fetus.[26]

In addition, Susruta maintained an understanding of the impact of the mother's psychological state upon the emerging fetus. Following the third month when all the major limbs and organs are present in their rudimentary forms, Susruta states that the fetus acquires a consciousness of its surroundings and begins to "long for" sense objects.

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[23]Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 521.

[24]Susrutasamhita Susruta, Sanrasthanam and Cikitsasthanam, ed. Ambikadatta Sastri (Benares: Chowkhanba Sanskrit Series Office, 1954) 3.31, quoted in Gupta and Datta "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development." 521.

[25]ibid., 3.17, 524.

[26]During the first 3 months the diet should be rich in cooling and sweet products with a preponderance of liquid foods. During the third month the best quality of rice should be taken with milk. For the next 2 months milk and yogurt were suggested. From the fourth month onwards generous quantities and milk and milk products, good quality soup and light meat preparations were prescribed." (ibid., 10.3, 524).

These "longings" are imparted to the mother and are expressed externally through the mothers "desires." If the exchange is short-circuited and these desires are denied, suppressed or remain unfulfilled, then the effect on the fetus can be profound. According to Susruta, various congenital defects such as paralysis, dwarfism, blindness, various sense organ defects and lameness can be the result.[27]

That Susruta maintains some sort of fetal psychology is clear. Along with the above stated affirmations of consciousness and sense perception, the fifth month results in the acquisition by the fetus of a "mind of its own" and is said to "awaken." This is quickly followed by the realization of an "intellect" in the 6th month.[28]

A second prominent early Indian thinker in the area of embryology is Caraka.[29] Caraka shares similar theoretical notions with Susruta regarding the "genetic" contributions of the mother and father to the developing fetus. From the mother come the "skin, blood, flesh, fat, navel, heart, kloma, liver, spleen, kidneys, urinary bladder, colon, stomach, intestine, rectum, anus, small intestines, large intestines, omentum, and mesentery"[30] while the father contributes the "head-hairs, beards-mustaches, nails, body hairs, teeth, bones, ligaments, and semen.[31] The fetus' appetite, vitality, clarity of senses, and quality of voice all arise out of parental harmony[32] while the qualities of "life-span, self knowledge, mind, sense organs, respiration, impulse, sustenance, characteristic physiognomy, voice and complexion, happiness, misery, desire-aversion, consciousness, restraint, intellect, memory, ego and will."

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[27]ibid., 3.15, 523.

[28]ibid., 3.28; 5.523.

[29]According to Gupta and Datta various dates for Caraka have been proposed on the basis of internal and external evidence. They cite P.C. Ray's History of Hindu Chemistry, (vol.1) (London: Oxford Univ. Press, 1902) which places Caraka in the "pre-Buddhist age, i.e. before the 6th century BC." (Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development", 525). However, Zysk states the following: "Controversy exists over the exact date of Caraka, with many scholars subscribing to the view of Sylvaln Levi. who, on the authority of the fifth-century C.E. Chinese translation of the Sutalamkara, asserted that Caraka was a physician of King Kaniska, thus placing his treatise in the first or second century of the common era." (Kenneth Zysk, Asceticism and Healing in Ancient India New York: Oxford Univ Press, 1991], 331).

[30]Caraka, The Caraka-samhita of Agnivesa, vol.1 (Sarirasthanam), annotated by Caraka and redacted by Drdhabala, ed. and trans. Priyavrat Sharma (Delhi: Chaukhambha Orientalia, 1982), 3.6., 421.

[31]ibid., 3.7, 421.

[32]ibid., 3.11, 423.

are cause by the fetus' self",[33] known as "jiva".[34]

Caraka also shared with Susruta an understanding of the cruciality of fetal nourishment. He maintains that the child's shape, vigor, energy and sense of contentment all arise as a result of proper nourishment.[35]
According to Caraka, the physiological process of embryonic and fetal development proceeds from that of "shapeless jelly" the first month to being "tumor-like" or fleshy the second to limb and sex-organ differentiation the third month and so on.[36] Caraka believed the fetus' and mother's hearts to be connected through the umbilical cord and placenta, transmitting nourishment through the blood, as well as "vitality and complexion."[37] Caraka believed that the fetus could be destroyed, deformed, or suffer psychologically due to physical or emotional disturbances of the mother.[38]
Indeed, Caraka was very aware of the possible prenatal psychological influences on the emerging child's psyche and lists a comprehensive catalogue of possible mental stress, shocks, and maternal habits which might cause psychological damage to the fetus.[39] He concludes this section with this conclusion:

> **Thus the facts causing damage to the fetus are said. Hence the woman desiring excellent progeny should particularly abstain from the unwholesome diet and behavior. Observing good conduct, she should manage herself with the wholesome diet and behavior.[40]**

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[33]ibid., 3.10, 423.

[34]Defined as the "source of life." (ibid., 3.6, 421).

[35]ibid., 3.12, 423.

[36]ibid., 4.9-25, 430-433.

[37]ibid., 6.23, 452.

[38]ibid., 4.15-33, 431-435.

[39]Caraka alludes to the various possibilities of psychological effects from the mother to the fetus. He writes, "The woman sleeping In open places and moving out in the night gives birth to an insane; If she indulges in quarrels and fights, the progeny will be epileptic. One indulged in sexual intercourse to ill-physiqued, shameless, and devoted to women; one always under grief to timid, undeveloped or short-lived; one thinking ill of others to harmful, envious, or devoted to women; the thief to exerting, wrathful or inactive; the intolerant to fierce, deceitful and jealous; one who sleeps constantly to drowsy, unwise and deficient in digestive power; one who takes wine constantly to thirsty, poor in memory and unstable in mind. . . . The pregnant woman gives birth to a child suffering mostly from the respective disorders the etiological factors of which are used by her." (ibid., 8.21, 468).

[40]ibid.

As such, Caraka certainly anticipates Lake's M-FDS.

In addition to Susruta and Caraka, other Indian thinkers also made various embryological speculations. Most are repetitions of one sort or another of Susruta and Caraka. However, for the purposes of this dissertation, it is significant that there was congruity on the subject of a fetal psychology, especially as it relates to sense perception and consciousness. Parasra writes:

> **During the sixth month, holes appear in the ears of the embryo. During the seventh month vessels, ligaments, bones, phalanges, hair on the head, nails and skin appear on the embryo. the embryo becomes more conscious during this month.[41]**

C. Medieval and Early Modern Thought

Following Galen, the advance of embryology and fetology is, at least in the Western tradition, arrested for almost 13 centuries. While several works do occur, they are essentially composed of restatements or compilations of Hippocrates, Aristotle, Sorenus and Galen.[42] Perhaps one exception to this is Trotula's 11th century text on various gynecological ailments and their cures.[43] Trotula, thought to be a woman, was associated with the medical school in Salerno, Italy. Her work was not available in an English translation until the middle of the 15th century but still preceded by almost a century what was at one time thought to be the earliest obstetrical text to appear in English, The Byrth of Mankynde, translated from Eucharius Rosslin's Der Swangern Frawen und Hebammen Rosegarten,[44] first published in 1513 and first appearing in English in 1540.

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[41]Parasara. Parasarasmrti, ed. Daivajnavacaspati Sri Vasudeva (Benares: Chowkhamba Sanskrit Series Office, 1968), quoted in Gupta and Datta, "The Cultural and Historical Evolution of Medicine and Psychological Ideas Concerning Conception and Embryo Development," 527.

[42]For instance. Albertus Magnus' Da animalibus from the 13th century which is basically a close restatement of Aristotle, especially as it relates to areas of embryological interest. He also cites Galen extensively.

[43]Trotula, Medieval Woman's Guide to Health, trans. and ed. Beryl Rowland (Kent, Ohio: Kent State Univ. Press, 1981).

[44]Eucharius Rosslin, Der Swangern Frawen und Hebammen Rosegarten. ed. Gustav Klein (Munich, C. Kuhn, 1910).

Similar to the medieval period, various derivative works continued to appear in the 15th and 16th centuries. However, several small advances began to appear,[45] including Leonardo da Vinci's embryological and fetological statements, drawings and illustrations.[46] With the publication in 1604 of Hieronymus Fabricius' De formato Feotu,[47] the description and illustration of the physiological dimension of embryology and fetology[48] takes a great leap. But this publication, and the ones preceding and it, contain little if any speculation regarding the existence of a fetal psychology.

Up until the 16th century, the prevailing view of embryological development was the epigenetic, that the various components of the developing creation occurred sequentially. The historic weakness to this conceptualization is that it did not adequately account for the complex mechanism of the "creation" of life itself.[49] A less dominant but plausible rival view was the preformation theory, which argued that embryonic life in miniature already existed within the parent and thus development consisted simply in growth, not creation.[50]

Such an argument, postulated early on by Plato and Aeschylus among others, came into vogue during the late 16th century. But because of the inability to locate an ovum or sperm in the uterus, the epigenetic line of reasoning was revived by some. William Harvey, for instance, in his important 1651 work De generatione animalium, takes this view.[51]

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[45]Alexander Benedictus, Histona corpus humani sive Anatomice, (Venetiis: A Bernadino Guerraldo Vercellensi, 1502); Andreas Vesalius fle humani oorpons faori~a (Basileae: Ex officina 10. Oporini, 1543); Realdus Columbus De re anatomica (Venetiis: Ex typographia Nicolal Bevilacquae, 1559); Bartholomaues Eustachius Opuscula anatomica ("enetils: Vincentius Luchinus, 1563); Gabriel Fallopius, Observationes anatomicae (Venetiis: Apud Marcum Antonium Ulmum, 1561); Julius Ceasar Arantius De humano foetu liber tertio editus (Venetiis: Apud lacobum Brechtanum, 1587).

[46]Leonardo da Vinci, The Drawings of Leonard da Vinci, ed. A.E. Popham (New York: Harvest Books,1945).

[47]Hieronymus Fabricius, The Embryological Treatises of Hieronymus Fabricius, trans. and ed. Howard B. Adelmann (Ithaca, N.Y.: Cornell Univ. Press, 1942).

[48]Cunningham writes that Fabricius' work is less on embryology and more on comparative "generation" because of his focus almost exclusively on the "procreation and formation of the fetus." (Andrew Cunningham, "Fabricius and the 'Aristotle Project" at Padua," in The Medical Renaissance of the Sixteenth Century, eds. A. Wear, R.K. French and I.M. Lonie (NY: Cambridge Univ. Press, 1985), 210.

[49]Angus McLaren, "The Pleasures of Procreation: Traditional and Biomedical Theories of Conception," in William Hunter and the Eighteenth-Century Medical World, eds. W.F. Bynum and Rhea Porter (New York: Cambridge Univ. Press, 1955), 333.

[50]ibid.

[51]ibid.

The period of the end of the 17th through the end of the 19th century brings about significant technical and "physical" advances in embryology and fetology. With the availability of the microscope at the close of the 17th century, the sperm was first seen by Hamm and Leeuwenhoek in 1677 following by five years the observation of the ovarian follicles by de Graff.[52] Thus, the preformation theory again begins to prevail, but is split between two camps, the animalculists and the ovists, the latter holding that the miniature offspring was to found in the ovum and the former that it was to be found in the sperm.[53] The preformationist view in its various manifestations predominated until at least the middle of the 18th century.
It is also during this period that some speculation regarding fetal cognition and understanding takes place. John Locke, writing in his Essay Concerning Human Understanding speculated that the capacity to form ideas may be characteristic of fetal life.[54] Jean-Jacques Rousseau, writing in the next century, alternately regarded the fetus as a "witless tadpole" eventually born with a "tabula rasa" for a mind.[55]
The late 18th century brings some important advances, including Spallanzani's application of the experimental method to embryology which finally demonstrates that both the ovum and sperm are necessary for conception to occur.[56]
This discovery, along with a general lack of evidence for the preformation theories results in a switch back to the epigenetic argument, this time permanently, although this change was quite gradual. For instance, Wolff sets forth his conceptualization of epigenesis,[57] a method of progressive growth and differentiation from the simpler to the more complex, through the utilization of basic building units called "globules" or cells.[58]
The preformationist theory was permanently laid to rest in 1900 by Driesch who showed that forms of the cells of a fertilized egg, can, when separated, develop into complete embryos.[59] The present view is that "development is strictly preformational as regards the genes and their hereditary influences, but rigorously epigenetic in actual constructional activities."[60]
The late 18th through 20th centuries brings many technical advances. For instance, William Hunter's Treatise on the Human Gravid Uterus in published in 1774 and is an important advance in embryological and fetal observation and illustration. Von Bauer finally clearly identifies the mammalian egg in 1827[51] while Schleiden and Schwann lay the foundations of modern embryology with the formation of cell theory.[52]
Wilhelm His' book The Anatomy of Human Embryos, published in 1880, stands as the first great modern work dealing with specifically human embryology.[63]

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[52]Bradley M. Patten, Human Embryology (Philadelphia: The Blakiston Company, 1946), 2.

[53]McLaren, "The Pleasures of Procreation: Traditional and Biomedical Theories of Conception," 333.

[54]John Locke, Essay Concerning Human Understanding (Chicago: Henry Regnery Co, 1956). Locke's treatise was originally published in 1690.

[55]Peter G. Hepper, "Foetal Learning: Implications for Psychiatry?" British Journal of Psychiatry 155 (1989): 289.

[56]Patten, Human Embryology, 3.

[57]ibid.

[58]Leslie Arey, Developmental Anatomy (Philadelphia: W.B. Saunders Co., 1954), 4.

[59]**ibid.**

[60]**ibid.**

[61]**ibid.**

[62]**Patten, Human Embryology, 3.**

[63]**ibid.**

CHAPTER 3

THE EVIDENCE FOR A SCIENTIFIC "PARADIGM"

2. Embryological and Fetological Thought of the 20th Century

With the biochemistry, biology, anatomy and neurology of embryology and fetology gradually becoming clearer and clearer though much of the early to middle part of this century, the groundwork is laid for a return to substantial speculation about the psychological sophistication of the fetus. Certainly crucial to this debate was the thought of Sigmund Freud. His impact upon the subsequent psychodynamic understanding of fetal life was profound and undeniable. Addressing Freud's influence, deMause writes, "virtually all contemporary psychoanalytic theory denies the possibility of mental life before or during birth. The newborn is believed to be without memory, ego, objects, or mental structure.[64]

But perhaps it could be stated that in some ways, whether he intended to or not, Freud "opened the door"[65] to the psychodynamics of intrauterine life. For instance, even though Freud[66] wrote in Inhibitions. Symptoms and Anxiety that "birth still has no psychic content"[67] and that "birth is not experienced subjectively as a separation from the mother since the foetus, being a completely narcissistic creature, is totally unaware of her existence as an object,"[68] in the same work he also referred to birth as the "earliest anxiety of all" and the "primal anxiety."[69] Lake even quotes Freud as writing that "there is much more continuity between intra-uterine life and the earliest infancy the impressive caesura of the act of birth allows us to believe.[70]

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[64]Lloyd deMause, Foundations of Psychohistory (New York: Creative Roots, Inc., 1982), 247.

[65]Lake, "The Significance of Birth and Prenatal Events in Individual, Family and Social Life," S5.

[66]Phyllis Greenacre, writing regarding Freud's position states that even though "he doubts the importance of the individual birth experience in influencing the quantum of the anxiety response, largely because the birth experience is without psychological meaning; at the same time, nevertheless, he emphasizes the continuity of the intrauterine and the postnatal life." (Phyllis Greenacre, Trauma Growth and Personality, New York: International Universities Press, 1952], 52).

[67]Freud, cited in deMause, Foundations of Psychohistory, 247.

[68]Freud, Inhibitions, Symptoms arid Anxiety, 130.

[69]ibid., 137.

[70]Lake, "The Significance of Birth and Prenatal Events in Individual, Family and Social Life," 5.

Freud's[71] schizophrenic attitude toward birth is perhaps illustrated by his initial embrace of Otto Rank's book The Trauma of Birth as "the most important progress since the discovery of psychoanalysis."[72] However, he apparently turned against Rank[73] at the behest of Abraham, Jones and some of the others of his inner group who warned that Rank's book would eclipse Freud's work.[74]

Later, in writing to Abraham, Freud alluded that he was "getting further and further away from birth trauma. I believe it will 'fall flat' if one doesn't criticize it too sharply, and then Rank, who I valued for his gifts and the great services he has rendered, will have learned a useful lesson."[75]

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[71]deMause cites D.W. Winnicott's Collected Papers: Through Pediatrics to Psycho-Anaiysis, 175 for the following exception: "The only time when he was said to have deviated from this view was once when he was heard to have wondered if an infant born by Caesarian section might have a different pattern of anxiety." (deMause, Foundations of Psychohistory, 246).

[72]Freud quoted in Lake, Tight Corners in Pastoral Counselling, 3.

[73]Jessie Taft, Otto Rank: A Biographical Study Based on Notebooks Letters Collected Writings. Therapeutic Achievements and Personal Associations (New York: Julian Press, 1958).

[74]Lake writes that these persons "inflamed his [Freud's] fear 'lest the whole of his life's work be dissolved by the importance attached to the trauma of birth."' (Lake, Tight Corners in Pastoral Counselling, 3).

[75]Fodor, Freud, Jung and Occultism.

Otto Rank began his study of the possible effect of birth experiences in 1904, finally publishing The Trauma of Birth in 1923. This work, which clearly laid the groundwork for an understanding of the effect of pre-natal events on subsequent functioning, described Rank's contention that not only was birth the first experienced anxiety, but that it was the prime source material for all the neuroses and character disorders. It was the "original emotional shock underlying all personality dysfunction." Rank wrote that "we believe that we have discovered in the trauma of birth the primal trauma,"[76] and that "we are led to recognize in the birth trauma the ultimate biological basis of the psychical."[77] He continued: "We have recognized the neuroses in all their manifold forms as reproductions of, and reactions to, the birth trauma."[78]

What makes Rank important for an understanding of prenatal "psychology" are his allusions to the significance of the prenatal: "All symptoms ultimately relate to this "primal fixation" and the place of fixation is 'in the maternal body' and in peri-natal experiences."[79]

Building on Rank's work, Donald W. Winnicott, a British pediatrician and psychoanalyst, continues to push the "primal" influence back earlier, alluding more strongly to the importance of pre-natal life. Although, like Rank, his primary emphasis was still on birth as an event "etched on the memory"[80] that manifested itself in the stresses of later life, he also alludes strongly to the possible effect of the prenatal period, extending back as far as conception, upon the developing psyche. He writes:

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[76]Rank, The Trauma of Birth, quoted by Frank Lake, "Primal Integration Work," Self & Society, 15 (1987): 168 (Lingdale Archive #118).

[77]Rank, The Trauma of Birth, xiii.

[78]Rank, The Trauma of Birth, quoted by Lake, "Treating Psychosomatic Disorders Relating to Birth Trauma," 229.

[79]Rank, The Trauma of Birth, quoted by Lake, "Primal Integration Work," 168. Lake also quotes Rank as stating: "We believe that we have succeeded in recognizing all forms and symptoms of neuroses as expressions of a regression from the stage of sexual adjustment to the pre-natal primal state, or to the birth situation, which must thereby by overcome."

[80]Winnicott writes that "there is evidence that personal birth experience is significant and is held as memory material. When birth trauma is significant, every detall of impingement and reaction is, as it were, etched on the patients memory, in the way to which we have been accustomed when patients relive traumatic experiences of later life." (Winnicott, quoted by Lake, "Primal Integration Work," 169).

There is certainly before birth the beginning of an emotional development, and it is likely that there is before birth a capacity for false and unhealthy forward movement in emotional development.[81]

An American contemporary of Winnicott's was Phyllis Greenacre, who, in her book Trauma Growth. and Personality also makes allusions to the possible impact of the prenatal environment, but subsequently seems to back away from the implications. She writes "The fetus moves, kicks, turns around, reacts to some external stimuli by increased motion.[82] Indeed, research showing the increase of fetal heart rate and fetal movements to such stimuli as loud noises and maternal nervousness would indicate that these are signs of anxiety, as they would be in the child or adult.

While Greenacre retreats from any kind of affirmation of a distinctly "fetal anxiety",[83] she did affirm that anxiety-like responses in the fetus give rise to a predisposition to anxiety in the child and adult. She summarizes her own ambivalence to birth and pre-birth anxiety when she wrote that "perhaps the struggle of birth is at once too terrifying and too inspiring for us to regard it readily with scientific dispassion. "[84]

While Freud, Rank, Winnicott, Greenacre and others all made allusions to the possible importance of the prenatal, it is in the work of Nandor Fodor and his follower, Francis Mott, that the prenatal is specifically emphasized. It is Fodor's work The Search for the Beloved: A Clinical Investigation of the Trauma of Birth and Pre-Natal Conditioning, which was published in 1949, that really marks the beginning of the modern "prenatal psychology" movement. As is clear with the title of the book, the first part of the book was devoted to birth trauma, while the second part is devoted to the "Traumata of the Unborn."[85] Mott's work was primarily based upon the analysis of various case histories, particularly dreams. He differentiates his work from Rank's: "Otto Rank made the first attempt to biologize psychoanalysis. His approach was philosophical; mine is clinical and independent of his claims."[86]

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[81]Winnicott, quoted by Lake, "Primal Integration Work," 169.

[82]Greenacre, Trauma Growth arid Personality, 54.

[83]Ridgeway writes: "She [Greenacre] was persuaded by Freud (after his break with Rank) that the fetus and the newborn child behaved in ways that had 'no psychic content."' (Rhea Ridgeway, The Unborn Child [Great Britain: Wildwood House, 1987], 62).

[84]deMause, Foundations of Psychohistory, 248, quoting Phyllis Greenacre, "The Biological Economy of Birth," Psychoanalytic Study of the Child 1(1945): 40.

[85]"The book is actually divided into three "books", the first titled "The Trauma of Birth" (pp.3-204), the second "Return to the Womb" (pp. 207-299), and the third "Traumata of the Unborn" (pp. 303-379).

[86]Fodor, The Search for the Beloved, v.

All of the major components of Lake's M-FDS can be discerned in Fodor's work. Lake saw his research as confirming and building upon Fodor's, and others, such as Mott's and Grof's work. Fodor affirmed, as Lake later did, the importance of birth for later development, the therapeutic effect of re-experiencing birth and prenatal life, the specific problems raised by particular maternal habits[87] and behavior such as rejection of the fetus and attempted abortion. Fodor affirms, as did Lake, that the prenatal period is more crucial than birth for subsequent functioning. He writes:

The release of the trauma of birth is the introductory phase of the integration of pre-natal trauma. The more vital phase concerns the shocks suffered prior to birth. In order to release these shocks, the mind must take cognizance of their existence and nature.[88]

Finally, Lake's affirmation of the primacy of the first trimester can also be found in Fodor's work. He approvingly quotes Sadger:

I believe first of all that which all my patients assert, that the embryo already feels plainly whether its mother loves it or not, whether she gives it much love, little love, or none at all, in many instances in fact in place of love sheer hate.[89]

Francis Mott is as explicit in his emphasis upon intrauterine life as Fodor is. His fundamental principle was that "every psychological feeling derives from an older physical feeling." For instance, the very basic psychological sense of "I" is originally derived from the physical sensation of contact between the fetal skin and its environment.[90]
Thus, the bidirectional flow of blood from mother to fetus as mediated by the placenta through the umbilical cord, gives rise to the physical "feelings" of aggression, submission, emptiness,

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[87]"The life of the unborn is not necessarily one of unbroken bliss. The unborn child is dependent on his mother's blood-stream for oxygen, for food, and for the elimination of its waste products. There are many maternal afflictions that affect and perhaps weaken the child before birth. Many children seem to start post-natal life with a handicap." (ibid., 396).

[88]ibid., 400.

[89]J. Sadger, "Preliminary Study of the Psychic Life of the Fetus and the Primary Germ," The Psychoanalytic Review, 28 (1941): 336, quoted by Fodor, The Search for the Beloved, 306.

[90]Ridgeway, The Unborn Child, 64.

fullness, giving and taking that is the basis for subsequent psychological "feelings". Mott utilized the term "umbilical affect" to designate this exchange, defining it as the "feeling state of the fetus as brought about by blood reaching him through the umbilical vein."[91] As Mott envisaged it, the umbilical vein not only conveys nutritive resources and as such could be experienced as a "life-giving flow, bringing . . . renewal and restoration" but could also "be the bearer of an aggressive thrust of bad feelings into the foetus if the mother herself was distressed and 'feeling bad.'"

If the mother felt emotionally unsupported , then "this feeling of deficiency, lack of recognition and the failure of looked-for support, would be just a specifically felt by the fetus. It became distressed by the failure of its immediate environment to provide the expected acceptance and sustenance, not so much at the level of metabolic input . . . but to nourish the earliest beginnings of the person in relationship."[92]

Stanislav Grof's work is contemporaneous with that of Mott's. His analysis, however, is less dependent upon dreams as the content for his ruminations and very dependent upon LSD-assisted abreactions. On the basis of an analysis of over 3000 LSD-therapy sessions, Grof described four "Basic Perinatal Matrices", the first of which he called the "Life in the Womb."

This matrix, according to Grof, was composed of the recollections of fetal life and involves the summation of experiences with which the baby faces the impending experience of birth. This summation tends to be either the positive "experiences of an undisturbed intrauterine environment where the basic needs of the embryo/fetus/baby are met"[93] or the negative recollections the 'bad womb' situation such as fetal crises, emotional upheavals in the mother and attempted abortions.[94]

The second matrix is called "No Exit" and occurs at the beginning of labor but before the cervix opens. The "good womb" experience, where it has occurred, is inexplicably terminated and the supporter of the fetus for the last 9 months becomes the aggressor. There is relentless force to "push out" the constricted fetus which can seem destructive or even murderous. Those that have suffered a "bad womb" experience are having their earlier traumas recapitulated and confirmed. The third phase involves the actual process of birth while the fourth dealt with the early post-natal experience.

It was in this general milieu that Lake formulated his own thinking with regard to birth and subsequently, to prenatal life. Some of his own work was contemporaneous with others, especially Grof's and Mott's. The views of Lake and all those who preceded him in this area have never been widely affirmed or accepted.

Following is a review of some of the present available data that appears to lend support to Lake's M-FDS. As with neonatal and postnatal physiological and psychological processes, those of the prenatal can be organized into several categories, including movement, sensation, learning, memory, affect, dreaming, and the much more elusive and difficult-to-determine categories of personality and consciousness.

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[91]Moss, "Frank Lake's Maternal-Fetal Distress Syndrome: Clinical and Theoretical Considerations," 203.

[92]Lake, "The Significance of Birth and Prenatal Events in Individual, Family and Social Life," S1.

[93]"Lake, "Studies in Constricted Confusion, C-56.

[94]**Lake described this phase of Grof's Basic Perinatal Matrices: "They [the participants in the primaling seminars] would begin to have very, very clear ideas of what an undisturbed intra-uterine life was like . [several months before birth the baby's] . . . swinging around with plenty of amniotic fluid round so you don't occasionally bump agalnst the edges. You are on swings and the roundabouts and it's all very pleasant and easy, oceanic, you're in the water but all your needs are met, hopefully. We're talking about a good womb now where there is constant nutrients, where the chemical come down, the endocrine come [sic.] down in the placental blood stream to you and not loaded with alcohol and loaded with nicotine or loaded with all kinds adrenal toxins . . . so it's a good place and here you are really one with the sources. You get this experience. The all is in the one and the one is in the all, and for all I know, since I'm not aware of dependency, I am God, I am the very centre of things. There's no problem at all other than staylng in this place of ecstasy where from time to time my whole body shimmers with ecstatic feeling and life is very, very good. Cosmic unity, a sort of paradise. But equally well some people would go into disturbances of this intra-uterine life. A realistic recollection of a bad womb experience of foetal crisis, diseases, and emotional upheavals in the mother, twin situation, attempted abortion." (Lake, "Perinatal Events and Origins of Religious Symbols, of Symptoms and Character Problems: The Possibility of Reliving Birth and Its Effects").**

CHAPTER 3

THE EVIDENCE FOR A SCIENTIFIC "PARADIGM"

B. Morphological and Psychological Evidence for Lake's M-FDS

1. Embryonic Development

The point of conception is the culmination of a process that had originated much earlier. The process of gametogenesis[95] differs greatly in the male and female. Spermatogenesis occurs in the male gonads, the testis, requiring 64 days to yield mature spermatozoa which are produced at the rate of 300 million per day.[96] Oogenesis occurs in the female gonads, the ovaries, resulting in mature ova. As early as the 50th day after the mother's own conception, the primitive cells of the ova begin to multiply, reaching several million by the 5th month of fetal life, and then degenerating to around 700,000 by birth, with the result that only 200-400 mature to become fully developed ova.[97]

Sometime between the eleventh and fourteenth days of a typical woman's 28-day menstrual cycle,[98] ovulation occurs. A mature ovum is released into the Fallopian tube and is propelled slowly by means of hair-like cili down the oviduct towards the uterus. The ovum must be fertilized within 24 hours of ovulation by spermatozoa which have been released approximately 10 hours previous to fertilization.[99] This process usually occurs in the Fallopian Tube near the ovary.

During coitus, spermatozoa, at the approximate rate of 200 million[100] and transported by means of seminal fluid, are propelled by reflex muscular contractions out of the penis into the vagina. Spermatozoa can survive approximately 3-4 days and have a velocity of 1.5 mm/minute,[101] both propelling themselves and being propelled by means of muscular contractions in the uterus and fallopian tubes.

Once fertilization has occurred between one sperm and the ovum, the external cell membrane of the egg changes to prevent any other sperm from penetrating.[102] The result is the zygote which begins a series of mitotic divisions termed cleavage resulting in the successive increase of blastomeres.[103] As this process occurs, the zygote in being propelled toward the uterine cavity, such that it arrives there 3-4 days later and is now a morula, a spherical mass with 16-32 blastomeres.[104] With the addition of a central fluid cavity, the morula becomes a blastocyst,[105] and within 3-4 days (approximately 6-7 days after fertilization) attaches itself to the wall of the uterus. There is already differentiation in the cells and functional integration between them.[106]

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[95]"The manner in which sex cells are produced in the gonads." (Bradley M. Patton, Human Embryology [Philadelphia: The Blakiston Company, 1946], 11).

[96]"Moss, "In The Beginning," 4:1.

[97]**ibid.**

[98]**"P.L. Williams, C.P. Wendell-Smith and Sylvia Treadgold, Basic Human Embryology (Philadelphia: J.B. Uppincott Co, 1966), 31-32.**

[99]**H. Tuchmann-Duplessis, G. David & P. Haegel, Illustrated Human Embryology: Embryology, vol.1, trans. Lucille S. Hurdley (New York: Springer Verlag, 1971), 8.**

[100]**Patton, Human Embryology, 52.**

[101]**Tuchmann-Duplessis, David and Haegel, lllustrated Human Embryology: Embryology, 2.**

[102]**Moss, "In the Beginning," 4:2.**

[103]**Stephen G. Gilbert, Pictorial Human Embryology (Seattle: University of Washington Press, 1989), 3.**

[104]**ibid.**

[105]**Tuchmann-Duplessis, David & Haegel, Illustrated Human Embryology: Embryology, 14.**

[106]**Moss, "In the Beginning," 4:3.**

The blastocyst quickly 'implants' into the uterine lining (uterine mucosa), eventually being totally submerged within it. This endometrium, containing blood vessels, nourishes the blastocyst, allowing implantation to occur usually before the 10th day. The process of gastrulation,[107] by which three successive "germ layers" are formed by a single layer of cells on the internal surface of the embryo, results in the endoderm, the mesoderm and the ectoderm. These three eventually differentiate into the various components of the body.[108]

Especially crucial is the development of the neural plate from the ectodermal cells. This process, called neurulation,[109] occurs between the 18th and 26th days and forms the basis for the eventual brain and spinal cord.[110]

As the neural plate gradually changes in form from a "groove" to a 'tube" the basic shape of the embryo begin to elongate with bulges at either end. During the third week, the nervous system develops rapidly so that by the 18th day after fertilization, primitive nerve cells are present and by the 20th day the brain, spinal cord, and the basic components of the entire nervous system are present. By 25 days, the embryonic brain has three main vesicles separated along two main grooves, foreshadowing the eventual division of hindbrain, midbrain and lorebrain[111] and by the 4th week two main lobes are already apparent.[112] At around the 32nd day, the first and last of the main brain vesicles divides, rendering the 5 main divisions of the brain.[113]

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[107]W.J. Hamilton, J.D. Boyd and H. W. Mossman, Human Embryology: Prenatal Development of Form and Function Baltimore: The Williams & Wilkins Co., 1962), 10.

[108]From the endoderm: the pharynx, larynx, trachea, lungs, digestive tube, bladder, vagina, and urethrae.

From the mesoderm: muscles, connective tissue including bone and cartilage, blood, bone marrow, lymphoid tissue, blood vessels, body cavities, kidneys, and gonads.
From the ectoderm: epidermis (including skin, nails, and hair), sense organs, sinuses, mouth, anal canal, nervous tissue, some muscles and some cartilage. (Gilbert, Pictorial Human Embryology, 7).

[109]Tuchmann-DupIessis, David and Haegel, Illustrated Human Embryology: Embryology, 31.

[110]Moss, "In the Beginning," 4:4.

[111]David Lambert, Martyn Bramwell, and Gail Lawther, eds. The Brain (New York: G.P. Putnum Books, 1982), 48.

[112]James M. Tanner and Gordon Rattray Taylor, Growth (New York: Time/Life Books, 1965), 33.

[113]H. Tuchmann-Duplessis, G. David & P. Haegel, Illustrated Human Embryology: Nervous System and Endocrine Glands, Vol.3, trans. Lucille 8. Hurdley (New York: Springer Verlag, 1971). 34-5. The division is as follows. The prosencephalon divides Into the telencephalon and diencephalon eventually producing the cerebral cortex, whIle the rhombencephalon divides Into the metencephalon and myelencephalon, joining the mesencephalon in producing the brain stem and cerebellum.

At 5 weeks, cranial nerves begin sprouting from the brainstem[114] and by the end of the 6th week, the "nervous control system" can and does control the muscles of the developing child.[115] At 7 weeks, a deep crease behind the eye bud in the forebrain arises and is the rudimentary division between the forebrain division into the telencephalon (cerebral hemispheres) and diencephalon (hypothalamus and thalamus).[116]

The brain continues to grow with two large bursts in neural cell proliferation at 15-20 weeks and 25 weeks.[117] By 24 weeks grooves and ridges called sulci begin to appear in the expanding telencephalon and the occipital lobe greatly expands.[118] These sulci continue to develop until by birth all the primary sulci are present, with most of the secondary and a few of the tertiary sulci existent.[119]

Parallel to and interconnected with the development of the central nervous system is the development of the various specialized sense receptors. These sense develop from placodes, or "localizing thickenings of the cephalic surface ectoderm."[120]

The olfactory system originates as two placodes which are already apparent at 30 days. These placodal cells gradually differentiate, forming the olfactory epithelium, of nasal cavity. At about 6 weeks, these differentiated cells make contact with the olfactory zones in

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[114]The Brain, 49.

[115]Moss, "In the Beginning," 4:4.

[116]ibid., 49.

[117]ibid., 48.

[118]"Jeanne-Claude Larroche, "The Development of the Central Nervous System During Intrauterine Life," In Human Development, ed. Frank Falkner (Philadelphia: W. B. Saunders Co, 1966), 257-258.

[119]ibid., 258-60.

[120]Tuchmann-DupIessis, David & Hagel, Illustrated Human Embryology Nervous System and Endocrine Glands, 94.

the emerging brain,[121] which in turn induces the development of olfactory bulbs. The axons of the specialized receptors gradually become more and more interconnected to the cortical area corresponding to the olfactory system. This process occurs from the 4th through the 84th day.[122]

The visual system begins earlier, by the 18th day, and actually originates from two of the three germ layers; the optic nerve and lens emerge from the ectoderm, while the mesoderm contributes the "accessory structures."[123] The optic primordium develops for approximately 10 days before the lens primordium emerges at 29 days. The complexity of the eye and the various visual structures accompanying account for the long and gradual development of the visual system. The optic vesicle, the external layer of which forms the retina, begins to differentiate at approximately 40 days and continues until the 7th month. The optic nerve gradually develops out of the axons of differentiated ganglionic cells in each eye, which progress toward the emerging brain, and cross over each other forming the optic chiasma. As with the olfactory sense, these axons correspond to the specialized area of the Central Nervous System, and particularly the occipital lobe of the brain.[124]
This process starts at about 5 weeks, when eye buds also begin growing from the forebrain.[125] The various other visual components, including the cornea, the iris, and the sclera, all gradually emerge and are all present by the 3rd month.[126] The final event of the visual system is the separation of the eyelids during the 7th month.
The auditory system originates early in the fourth week with the emergence of the otic placode.[127] The development of the ear, including both the sense of hearing and balance, is complex and involved all three embryonic germ layers. The endoderm is the source of the

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[121]"The deep pole of the superficial cells gives rise to an axon which crosses the epithelium and the mesenchyme, and makes contact with the olfactory zones of the telencephalon." (ibid., 96.)

[122]ibid., 96-97.

[123]ibid.98. [124]ibid., 100-101.

[125]The Brain, 49.

[126]Hamilton, Boyd & Mossman, Human Embryology Prenatal Developmnnt of Form and Function 374-375.

[127]Gilbert, Pictorial Human Embryology, 141.

inner and outer ear, the entoderm is the origin of the middle ear, and the mesoderm participates in the formation of all three.[128] Very early on the ganglionic cells from the otic placode form two different clusters, the ganglion of Scarpa and of Corti. The axons of these neurons progress towards the metencephalon and eventually bunch together to form the acoustic nerve.[129]

During the fifth and sixth weeks the primordia of the semicircular ducts appear and the cochlear and vestibular ganglion are clearly discernable along with a utricle and sacula.[130] The development of the semicircular canals, the cochlea, the organ of Corti all gradually differentiate, as do the bones in the middle ear so that the sense of hearing is at least structurally functional from 20 weeks.[131]

While neurulation is occurring, the cardiovascular system is gradually developing out of the mesoderm. By 21 days small capillaries begin to appear, and the arrival of the first heart beat, although irregular and weak, occurs at 23 days.[132] During intra-uterine life, the circulatory system passes through two stages, the first called the vitelline, in which the embryo is living essentially on its own resources, lasts until the beginning of 5th week.

The second stage, called the placental, lasts from the 5th week until birth. With the development of the placenta and umbilical cord, the embryo/fetus depends upon his mother for nutrients.[133] This umbilical/placental exchange is just that, allowing the embryo/fetus to "exchange" $C0_2$, water, urea, hormones and waste products for oxygen, water electrolytes, protein and lipid carbohydrates, vitamins and antibodies. But the exchange is also dangerous because the placental barrier also allows the passage of various drugs and almost all viruses.[134]

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[128]Tuchmann-DupIessis, David & Haegel, Illustrated Human Embryology. Nervous System and Endoprine Glands, 106.

[129]ibid., 109.

[130]ibid., 108.

[131]David Chamberlaln, Consciousness at Birth: A Review of the Empirical Evidence (San Diego: Chamberlain Communications, 1983), 8.

[132]Moss, "In the Beginning," 4:5.

[133]H. Tuchmann-Duplessis, G. David & P. Haegel, Illustrated Human Embryology. Organogenesis, Vol. 2, trans. Lucille S. Hurdley (New York: Springer Verlag, 1971), 108-109.

[134]Tuchmann-Duplessis, David & Haegel, Illustrated Human Embryology: Embryology, 79.

The heart, originally a "cardiac tube", gradually differentiates so that by the 49th day, a 4-cavity heart is functional.[135] A recognizable liver is apparent at 28 days, with distinct "liver cells" evident one week earlier. The lung buds are evident by the 27th day and the windpipe starts several days later.[136] By the end of the first month, the embryo has a mouth cavity, a primitive kidney, and the beginnings of a stomach,[137] along with a discernible pancreas and intestines, but it will be well into the second month before an anal opening develops.[138]

During the beginning of the second month the nose begins to develop. The process of ossification begins and the trachea, as well as the eustatian tubes, thyroid, parathyroid and thymus glands all develop.[139] In the fifth week, the jaws form, giving the face a characteristic "human" shape and the arms and legs begin to show up as buds protruding from the trunk of the body.[140]
At this point the umbilical cord is the only component of the embryo that is "connected" to the placenta, giving the developing embryo a distinctness. Apart from appearances, the embryo is a "quite well-organized being, and already less vulnerable to outside influences like disease, drugs, and radiation."[141] But the emerging infant remains profoundly dependant and while "less vulnerable" to these effects, still vulnerable. This vulnerability points to the interactive nature of early intra-uterine life, where the embryo is not only effected by his host, but the mother is profoundly effected by her child.[142]

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[135]**ibid., 89.**

[136]**Moss, "In the Beginning," 4:5.**

[137]**Howard V. Meredith, Human Body Growth in the First Ten Years of Life (Columbia, S.C.: The State Printing Company, 1978), 3.**

[138]**Moss, "In the Beginning," 4:5.**

[139]**Meredith, Human Body Growth in the First Ten Years of Life, 3.**

[140]**Tuchmann-Duplessis, David & Haegel, Illustrated Human Embryology: Organonenesis, 6-7.**

[141]**Moss, "In the Beginning," 4:5.**

[142]**Moss writes, "Embryology appears at first sight to be the study of an unfolding saga, the prompters and organizers of which seem to be largely under genetic control. However, as study progresses, it becomes clear that the embryo is very sensitive to the environment around it. . . . [We] recognize that a hard and fast distinction between genetic and environmental influences is not a helpful object to pursue. Rather, we attune ourselves to the possibilities of the interaction between the two. We may not at this stage fully understand the mechanisms, but we do not close our minds to the idea that individual circumstances shape a person from the earliest stages." (ibid., 4:7.)**

The second month brings development in the parts of the brain that will deal with movement, intellect and smell. Indeed, by the sixth week the musculo-skeletal system is developed to the point where the embryo may start to move.[143] By the seventh week the "temporary kidneys are already helping get rid of waste substances, and will soon be replaced by permanent kidneys."[144]

The embryonic period typically concludes at the end of the eighth week and the fetal period begins. This division is somewhat arbitrary because there is no clearly distinct delineation in the activity or development of the emerging child to allow for the division. The same is true with the somewhat arbitrary notions of trimesters, each generally defined as encompassing approximately three months.

While Moss states that traditionally the first was a period of development, the second of growth with the third understood to be a period when life outside the womb is possible, this too is somewhat misleading. Growth and development are taking place throughout all three "trimesters" and infants as young as 5 months, clearly within the second trimester, have survived outside the womb.[145]

The mere fact that at the conclusion of the embryonic period most of the major systems of the brain and body are present which would be necessary for some kind of rudimentary embryonic "consciousnesstm is not synonymous with their function. As Chamberlain writes:

> **It is difficult to identify the precise function of the 'separate' parts [of the brain] since parts are closely interrelated and under conditions not fully understood take over for each other.[146]**

Lake's claim that the "interrelated" of the morphological structure during the embryological period allows for a prenatal "psychology" of sorts will be evaluated in chapter 5. However, it is important to note that Lake's emphasis and use of the terminology of "first trimester" in practice tended to correspond with the embryonic period. For instance, Moss writes that he tended to stop the first trimester 'fantasy journey' at about the stage when umbilical circulation was clearly established. Strictly speaking, this is probably a good deal before the end of the third month."[147]

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[143]**ibid., 4:5.**

[144]**ibid., 4:5-4:6.**

[145]**Chamberlain, Consciousness at Birth, 2.**

[146]**ibid., 4.**

[147]**Moss, "In the Beginning," 4:6.**

CHAPTER 3

THE EVIDENCE FOR A SCIENTIFIC "PARADIGM"

B. Morphological and Psychological Evidence for Lake's M-FDS

1. Embryonal Development
2. Fetal Development
a. Neurological Development

The morphological development of the embryonic central nervous system is extremely complex. This complexity continues to multiply during the fetal period concomitant with a ever-increasing complexity in fetal behavior.[148] Of particularly crucial importance is the development of the cerebral cortex, specifically the differentiation of the dendrites and the dendrite spines since "they provide a major portion of membrane surface for integration of synaptic inputs from a variety of sources.[149] Research has identified the maturational period of these dendrites between the 20th and 28th week after fertilization.[150]
Thus, according to Purpura and others,[151] since the requisite nerve cell circuitry is morphologically present to allow for "consciousness and self-awareness", he dates the beginning of "brain life" to the period immediately following; namely 28-32 weeks.[152] Others have identified the presence of viable synapses above and below the cortical plate as early as the 8th week and within the plate itself by the 23rd week.[153] EEG measurements indicate neural response in the cortical areas of the brain pertaining to the auditory, visual and tactile systems from stimulation of the peripheral organs to be functioning no later than 32 weeks.[154]

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[148]Julius B. Richmond & James M. Herzog, From Conception to Delivery," Basic Handbook of Child Psychiatry, vol.1, ed. Joseph D. Noshpitz (New York: Basic Books, 1979), 15.

[149]Chamberlain, Consciousnss at Birth, 4.

[150]D.P. Purpura, "Dendrite Differentiation in Human Cerebral Cortex; Normal and Aberrant Developmental Patterns." Advances in Neurology 12 (1975): 91-116; D.P. Purpura, "Normal and Aberrant Neuronal Development in the Cerebral Cortex of the Human Fetus and Young Infant," in Basic Mechanisms in Mental Retardation (UCLA Forum in Medical Sciences, No.18), eds. M.A.G. Brazier and N.A. Buchwald (New York: Academic Press, 1975), 141-169.

[151]Chamberlain writes, "Knowledge of the morphogenesis of these structures by 32 weeks in utero indicates a readiness of the nervous system to transmit signals back and forth through a complex mass of unnumbered cells, signals which miraculously arrive at all the right muscles, glands and organs. How these electro-chemical signals are ultimately transformed into meaningful messages, ideas, decisions, or memories cannot be explained in physical terms alone. Explanations are necessarily metaphorical or metaphysical." (Chamberlain, Consciousness at Birth, 4).

[152]D. P. Purpura, "Consciousness," Behavior Today, 27 (1979): 437-448.

[153]M.E. Molliver, I. Kostovic and H. Van der Loos, "The Development of Synapses in the Cerebral Cortex of the Human Fetus," Brain Research 50 (1973): 403-407, quoted in CHamberlain, Consciousness at Birth 4.

[154]H. G. Vaughn, Jr., "Electrophysiological Analysis of Regional Cortical Maturation," Biological Psychiatry 10 (1975): 513-526.

With the advance of technology, babies born as early as 28 weeks have survived outside the womb, presenting opportunities for observation of the 28th through the 40th weeks of gestation. Studies that have examined the systematic development of fetal growth have found that there tends to be great similarity of development between babies regardless of whether they are in or outside the womb.[155]
Further, there seems to be a regular advance in detectable development every 4 weeks in terms of "strength of responses, the degree of muscle tone and endurance, more regular waking and sleeping patterns and a more definite cry."[156] EEG results have confirmed this similarity. There is a ongoing pattern throughout the fetal period of increasing organization, ever-steadier activity, the development of more regular sleep-wake cycles, and "greater synchrony within and between hemispheres."[157]

b. Movement

One of the first indications of a functioning nervous system is the response of movement, which begins at around 8 weeks.[158] Minkowski and his colleagues examined 8- 20 week-old fetuses obtained by hysterectomy of mothers. He described the early fetal movements as slow and "worm like" but noted that, as Preyer[159] had found in 1885, tactile stimulation elicited more rapid and forceful movement than occurred spontaneously.

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[155]Arnold Gesell, ThA Embryology of R~h~vior (New York: Harper and Brothers, 1945), 107-122.

[156]Chamberlain, Consciousness at Birth, 5

[157]ibid.

[158]Liley, "The Foetus as Personality," 193.

[159]"In 1885, Preyer recorded movements of the extrauterine human fetuses, apparently from therapeutic abortions. He concluded that spontaneous fetal movements could occur before they are felt by the gravida, that fetal movements continued for a considerable time even when the fetus was without oxygen supply, that fetal movements were affected by temperature, that they could be elicited by stimulus (such as touching with a feather), and that these fetal movements were apparently independent of the mother's condition." (Robert Goodlin, Care of the Fetus (New York: Masson Publishing Co., 1979), 3, referring to R. W. Preyer, Spezielle Physiologic des Embryo (Leipzig, 1885).

While some studies have found "rolling movements" as early as 6 weeks,[160] Hooker and his colleagues[161] found that up until the middle of the 7th week, embryos appear incapable of movement.[162] The first reflex movement, contralateral (moving away) head flexion, appears at 7.5 weeks with a second, ipsilateral (moving toward) head flexion coupled with mouth opening appearing a week later.[163] Hooker found that "spontaneously executed activity" was apparent at 8.5 weeks.[164] According to Verny, by this time, not only is the fetus moving his head, trunk, and arms, but "he has already fashioned these movements into a primitive body language - expressing his likes and dislikes with well-placed jerks and kicks."[165]

Using ultrasound technology, some have observed that as early as the end of the first trimester, "regular exercise patterns have been observed including rolling, turning, leg kicks, flexing, and waving of arms.[166] Others have observed that fetal movement becomes sufficiently pronounced in the 10th or 11th week to allow for a change in the position of the fetal body.[167] The fetus will change positions constantly in reaction to the intra-uterine environment. Propelling himself by means of his arms and legs is the mechanism by which he changes "ends" in the uterus while the mechanism by which he switches "sides" in the uterus is a little more complex.

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[160]J.D. Stephens and C. Bernholtz cited in Goodlin, Care of the Fetus, 4.

[161] Humphrey, "Function of the Newborn Systems During Prenatal Life," in Physiology of the Perinatal Penod, Vol.2, ed. U. Stave (New York: Plenum Medical Books, 1978), 751-796.

[162]Davenport Hooker, The Prenatal Origin of Behavior (Lawrence, Kansas: The University of Kansas Press, 1952), 62.

[163]Hooker writes that numerous studies, beginning around 1920, looking at movement in 7-8 week old embryos did find some movement among some embryos of this age but ran into several problems, among them the "progressive anoxic condition of the embryo, maternal anesthesia, and a group of physical factors" (ibid., 57). Hooker began his studies In 1932 and attempted to deal with these problems in the following manner: "This team worked with over 140 human embryos and fetuses of various ages obtained by caesarian delivery in cases where therapeutic abortion was deemed necessary by a committee of obstetricians. Within two minutes of delivery they were placed in an isotonic fluid bath at body temperature and stroked gently with a fine hair to test for reactions." (Chamberlain, Consciousness at Birth, 5).

[164]Hooker, The Prenatal Origin of Behavior, 66.

[165]Thomas Verny, The Secret Life of the Unborn Child (New York: Summit Books, 1981), 37.

[166]L.G.R. Van Dongen and E.G. Goudie "Fetal Movements in the First Trimester of Pregnancy," Brltish Journal of Obstetrics and Gynecology, 87 (1980): 191-193.

[167]E. Reinhold cited in Goodlin, Care of the Fetus, 3-4.

According to Liley, the fetus employs a "longitudinal spiral roll [which] at the midpoint of his turn has a 180 degree twist in his spine."[168] By 15 weeks, 16 distinct movement patterns that resemble in pre- and full-term infants as clearly distinguishable.[169]

Some studies of third trimester babies shows that they rarely go more than 10 minutes without some "gross motor activity including breathing spurts during REM sleep."[170]

As to whether movement itself can be considered significant psychologically,[171] several studies[172] have correlated fetal movement and lack of movement to other fetal variables. Accordingly, one researcher has stated that "alternation of movement and immobility in the fetus is in itself an expression of an existing organization."[173] Further, movement in utero has been correlated with neonatal behavior.[174]

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[168]Liley continues by describing the method of turning: "He [the fetus] first extends his head and rotates it, next his shoulders rotate and finally his lumbar spine and legs - in fact, he is using his long spinal reflexes. Insofar as this Is the obvious way to turn over, there would be nothing remarkable about it except that according to textbooks of neonatal and infant locomotor function the baby does not roll over using his long spinal reflexes until 14-20 weeks of extra-uterine life. However, we have unequivocal films of the fetus using this mechanism at least as early as 26 weeks gestation, and it is apparent that the reason we do not see this behavior in the neonate is not that he lacks the neural co-ordination but that a trick which is simple in a state of neutral buoyancy becomes difficult under the newfound tyranny of' gravity." (Liley, "The Foetus as Personality," 194).

[169]J. l. de Vries, G.H. Visser, and H.F. Prechtl. "The Emergence of Fetal Behavior, Early Human Development, 7 (1982): 301-322.

[170]A. B. Roberts, D. Griffin, R. Mooney, and D.J. Cooper, "Fetal Activity in 100 Normal Third Trimester Pregnancies," British Journal of Obstetrics and Gynecology, 87 (1980): 450-484.

[171]Various studies have shown that movement is very psychologically important for pregnant mothers. Perceived attachment to the developing fetus is greatly enhanced following the first sign of movement. (Jeanne T. Grace, "Development of Maternal-Fetal Attachment During Pregnancy," Nursing Research, 38 [1989]: 228- 232; Susan M. Heidrich and Mecca S. Cranley, "The Effect of Fetal Movement, Ultrasound Scans and Amniocentesis on Maternal-Fetal Attachment," Nursing Research, 38 [1989]: 81-84).

[172]A. Lanniruberto and E. Tajani, "Ultrasonographic Study of Fetal Movements," Seminars in Perinatology 5(1981): 175-81; A. Milani Comparetti, "The Neurophysiological and Clinical Implications of Studies on Fetal Motor Behavior," Seminars in Perinatology 5 (1981): 2; A. Milani Comparetti, "Fetal and Neonatal Origins of Being a Person and Belonging to the World," Maturation and Learning (April 1986): Supplement 5; A. Milani Comparetti and E.A. Gidoni, "Pattern Analysis of Motor Development and its Disorders," Developmental Medical and Child Neurology 9 (1967): 5; A. Milani Comparetti and E.A Gidoni, "Dalla parte del neonatal proposte per una competenza prognostica," Neuronsichiatria Infantile (1976): 175; Lil Valentin and Karel Marsal, "Fetal Movement in the Third Trimester of Normal Pregnancy," Early Human Development 14 (1986): 295-306; E.E. Van Woerden, H.P. Van Geijn, F.J. Caron, and J.M. Swarties, "Automated Assignment of Behavioral States in the Human Near Term Fetus," Early Human Development 19 (1989): 137-146.

[173]E. A. Gidoni, M. Casonato, and N. Landi, "A Further Contribution to a Functional Interpretation of Fetal Movements," in Prenatal and Perinatal Psychology and Medicine, ed. P. G. Fedor-Freybergh and M.L.V. Vogel (Park Ridge, NJ: The Parthenon Publishing Group, 1988), 349.

[174]Akashi Ishikawa and Etsuko Minamide, "Correlation Between Fetal Activity and Neonatal Behavioral Assessment Scale," Early Child Development and Care, 17 (1984): 155-165.

c. The Tactile Sense

As noted above, movement is often in response to tactile stimulation, or the sense of "touch". This sense is really a combination of three different sensory capabilities, pressure, temperature and pain. All three develop simultaneously so that by the 32nd week, "tactile responsivity can be demonstrated for all parts of the fetal body."[175]

The position of the fetus in utero is often in response to the tactile environment within the fetus. According to Liley, many changes in the environment provoke movement, including Braxton-Hicks contractions, maternal movements, and external palpation. The fetus will repeatedly and purposefully move to avoid a knuckle on the prominences or the "sustained pressure of a microphone or phonendoscope."[176]

By the second month, the embryo will kick and jerk if poked at, and by the fourth month the stroking of the eyelids will result in squinting instead of a violent jerking movement: indeed stroking the lips results in sucking behavior.[177] Tickling the scalp of the fetus at the surgical induction of labor will result in movement; Liley writes that "stroking the palm of the prolapsed arm elicits a grasp reflex, and to plantar stimulation the footling breech obliges with an upgoing toe."[178] According to Verny, by the fifth or sixth month, the fetus is "as sensitive to touch as any one-year old.[179]

In addition, the fetus will respond with "violent movement" to a needle puncture. Goodlin reports that during the performance of "hundreds of amniocenteses" normal, healthy near-term infants would invariably respond to "needle sticks" with movement and drastic fetal heart-rate changes. For some of these fetuses, Goodlin reported that prior to performing the amniocentesis, he recording the fetal heart-rate up to five minutes. He writes "if we obviously stuck the fetus with the needle during the amniocentesis, we invariably found the FHR [fetal heart-rate] abruptly changed."[180]

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[175]T. Humphrey, "Some Correlations Between the Appearance of Human Fetal Reflexes and the Development of the Nervous System," Progress in Braln Research, 84 93-133, quoted by Chamberlain, Consciousness at Birth, 5.

[176]Liley, "The Foetus as Personality," 194.

[177]Verny, The Secret Life of the Unborn Child, 37.

[178]Liley, "The Foetus as Personality," 195.

[179]Verny, The Secret Life of the Unborn Child, 37.

[180]Goodlin, Care of the Fetus, 193.

This change was usually in the direction of acceleration, but on occasion, deceleration occurred, or as other researchers have discovered, "a sudden crash" to a silent pattern of non-movement.[181] Goodlin reports that during amniocenteses where there was no feel of puncture by the fetus, there was no observable change in FHR, suggesting to him that the fetal responses to the needle were those of pain.[182]

As stated earlier, many have denied the sensation of pain in the fetus based upon an incomplete understanding of the process of myelinization of the neurons in the central nervous system. deMause has pointed out that this has occurred because of an uncritical acceptance of a faulty study by Langeworthy in 1933,[183] This study made the assertion that "incomplete myelinization of sensory tracts" resulted in the inability of the fetus to receive neural messages from it's specialized sense receptors. As is clearly shown in numerous subsequent studies,[184] this is untrue. According to one researcher, "the cranial nerve roots are myelinated very early",[185] preceded only by myelinization in the spinal cord.[186] Almost concomitant with cranial myelinization is that in the medulla and pons, followed quickly by cerebellum and the cerebral hemispheres.[187]

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[181]In a study by Neldam and Peterson from 1980, six of seven of these "silent" fetuses did not even move for two minutes. (David Chamberlain, "The Cognitive Newborn: A Scientific Update," British Journal of Psychotherapy 4 (1987): 34.

[182]Goodlin, Care of the Fetus, 193.

[183]U.R. Langeworthy, "Development of Behavior Patterns and Myelinization of the Nervous System in the Human Fetus and Infant," Contributions to Embryology (Washington, D.C.: Carnegie Institute, 1933) XXIV, No. 139.

[184]K.J. Mand and P.R. Hickey, "Pain and its Effects in the Human Neonate and Fetus," New England Journal of Medicine 317 (1987): 1321-1329; K.J. Mand and P.R. Hickey. "Pain and its Effects in the Human Neonate and Fetus," Pre- and Peri-Natal Psychology Journal 3 (1988): 103-123.

[185]As early as the 24th week. (Larrouche, "The Development of the Central Nervous system During Intrauterine Life," 273).

[186]In the 22nd week. (ibid., 274.)

[187]Jean-Claude Larrouche, "Queques Aspects Anatomiques du Developpment Cerebral," Biologie Neonatal 4 (1962): 126-153.

While full myelinization, which occurs only after birth, does increase the rapidity of conduction, it is not essential for sensory functioning. Well-organized neural activity and sense receptivity,[188] including pain, occurs long before the nerve fibers are completely myelinated.[189]

Liley, using multiple fetal x-ray films, described the process of birth and particularly contraction as one of "frantic" flailing fetal movement, with the arms and legs being thrown about and what appeared to be an active resistance to each contraction. Liley observation was that this behavior is characteristic of the reaction of a post-birth human being to severe pain. Liley writes:

> **If one attempts to reproduce in the neonate by manual contraction a mere fraction of the cranial deformation that may occur in the course of a single contraction the baby protests VioIently.[190]**

Further, studies have found that in the early stages of labor, healthy in utero fetuses will often respond with FHR changes or movement of some kind in response to various noises and sounds produced outside the intra-uterine environment. But as the labor continues, this reaction will cease. While some have described this as an instance of fetal habituation, others state that it is rather the distraction of the overwhelming fetal pain associated with labor.[191]

Liley, citing Karelitz' findings, writes that the first sleep of neonates after birth is "more profound than any subsequent sleep" based on the strength of the stimuli needed to awake them, thus testifying to the ordeal that labor has indeed represented.[192]

Normally, the fetus will not experience temperature less than his mother's because he lacks a truly "external" surface. In fact, the placenta acts as a heat exchanger which keeps the fetal temperature a constant .5 to 1.5 degrees Celsius above the mother's. Should she run a temperature, so will the fetus within her.

However, experimental studies have shown that the fetus will respond to temperature changes. Goodlin reports that the fetus will respond to "cold saline flushed into the amniotic space at 18-20 weeks with fetal heart rate changes and movement. He concludes that these responses reflect intact temperature receptors in the skin.[193] The fetus does not, however, have the sensation of "wetness" due to his constant and total immersion in the amniotic fluid.[194]

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[188]"In a general way the functional development and acquisition of myelin by certain fiber tracts are related. Nevertheless much well-organized activity of animal fetuses is present before there is any myelin. There are no myelin sheathe on fibers of the peripheral nerves, spinal cord, or brain of cat fetuses prior to the last third of prenatal life. but many coordinated movements can be elicited reflexively before the middle of gestation." (William F. Windle, Physiology of the Fetus [Springfield, Ill.: Charles C. Thomas, 1971], 71).

[189]M. Bekoff and M. Fox, "Postnatal Neural Ontology," Developmental Psychobiology 5 (1972): 323-341.

[190]Liley continues: "And yet, all that has been written by poets and lyricists about cries of newborn babies would suggest that newborn babies cried for fun or "joie de vivre"- which they never do afterwards - and in all the discussions that have ever taken place on pain relief in childbirth only maternal pain has been considered." (Liley, "The Foetus as Personality," 196).

[191]Goodlin, Care of the Fetus, 193.

[192]Liley, "The Foetus as Personality," 196.

[193]"Goodlin, Care of the Fetus, 2.

[194]LiIey, "The Foetus as Personality," 195.

CHAPTER 3

B. Morphological and Psychological Evidence for Lake's M-FDS

Fetal Development

1. Embryonal Development

2. Fetal Development

a. Neurological Development

b. Movement

c. Tactile Sense

d. Crying

Audible fetal crying is rare because it requires the presence of air in the fetal trachea. Called "vagitus uterinus", it often occurs after an air amniogram. Goodlin writes:

> **There is no way to prove the point, but presumably the normal fetus is frequently "crying in utero, but only the presence of air within the uterus makes it obvious. . . . It therefore seems reasonable to assume that fetuses are often as uncomfortable (enough to cry) "in utero" as "extra-utero."[195]**

Chamberlain writes that various researchers have recorded the cries of "abortuses from 21-24 weeks . . . weighing 650-930 grams.[196] One study discovered that early clamping of the umbilical cord resulted in much greater crying than late-clamping, "suggesting that babies were experiencing something that they did not like."[197] In addition, spectrographic studies of the cry response after birth indicate meaningful expression of various pain states, including hunger, pain, loneliness or discomfort which are clearly distinguishable from each and correlatable to the infant state.[198]

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[195]Goodlin, Care of the Fetus, 193.

[196]David Chamberlain, "The Mind of the Newborn: Increasing Evidence of Competence," in Prenatal Psychology and Medicine, eds. P.G. Fedor-Freybergh and M.LV. Vogel (Park Ridge NJ: The Parthenon Publishing Group, 1988), 9.

[197]M. Greenberg, V. Vuorenkoski, T. Partanen, and J. Und, "Behavior and Cry Patterns in the First Two hours of Life in Early and Late Clamped Newborns," Finnish Annals of Pediatrics 13 (1967): 64.

[198]Chamberlain, "The Mind of the Newborn," 9.

e. The Vestibular Sense

Of the "senses" of the body, the vestibular apparatus appears first, at around 9.5 weeks,[199] with morphological maturity at 14 weeks[200] It is unknown how early the sense of balance is functioning, but Hooker has reported 25 weeks as the earliest "definite human vestibular response.[201] As early as 1927, Galebsky had shown that by birth the semicircular canals are functional to the extent that the neonate experience any type of sudden movement, including rotatory, vertical and horizontal.[202]

f. The Gustatory Sense

The "sense" of taste also appears quite early in the fetal period, with microscopic analysis of fetal tongues finding that taste "buds" are present at 8 weeks, morphologically mature at 12 weeks,[203] and having all the necessary additions such as the pores and hair cells present by 14 weeks. Researchers have concluded that the gustatory sense is functional by 15 weeks.[204] Since amniotic fluid begins entering the mouth at 9.5 weeks and the fetus begins swallowing at 12 weeks,[205] it is likely that the fetus is tasting the glucose, fructose, citric, lactic, uric, fatty and pyruvic acids, amino-acids, phospholipids, creatinine, urea, polypeptides, proteins, salts, and other chemical agents in the amniotic fluid for up to 28 weeks before birth.[206]

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[199]ibid., 7.

[200]Goodlin, Care of the Fetus, 2.

[201]Hooker, The Prenatal Origin of Behavior 70.

[202]A. Gabelsky, "Vestibular Nystagmus in Newborn Infants,' Acta Otolaryngologica 11(1927): 409-423.

[203]Goodlin, Care of the Fetus, 2.

[204]R.II. Bradley and LB. Stern, "The Development of the Human Taste Bud During the Foetal Period," Journal of Anatomy 101(1967): 743-752.

[205]David Chamberlain, "Consciousness at Birth: The Range of Empirical Evidence," in Pre- and Pen-Natal Psychology: An Introduction, ed. Thomas R. Verny (New York: Human Sciences Press, Inc., 1987), 73.

[206]C.M. Mistretta and R. M. Bradley, "Taste in Utero: Theoretical Considerations," in Taste and Development: The Genesis of Sweet Preference, ed. J.M. Weiffenbach (Washington DC: US Government Printing Office, 1977), 51-69.

Misratta and Bradley conclude that taste preferences at birth are related to the fetal experience with various tastes during the intra-uterine period.[207]

The fetus drinks amniotic fluid regularly, reaching a rate of 15-40 ml per hour during the third semester. Research modifying the taste of amniotic fluid produces dramatic results. An early study done by de Snoo[208] in 1937 found that the injection of saccharin increased the rate of fetal swallowing in 34-38 week fetuses. Liley confirms this, stating that the rate usually doubled. However, some conversely drank less. An almost total cessation of fetal drinking occurs with the injection of Lipidol, an "iodinated poppy seed oil which tastes foul to an adult or child and which causes a neonate to grimace and cry." [209] Liley further writes that the fetus digests the constituent components of the amniotic fluid and that caloric intake may reach 40 calories a day.[210]
Swallowing, tongue and lip movements all originate between the 10th and 12th weeks followed by a gag reflex apparent in the 18th week[211] and sucking and puckering in the 22nd with the possibility of audible crying occurring between the 21st and 23rd week. Starting in the 18th week, respiratory contractions began and continued to get stronger.[212] Fetal hiccups occur and are fairly common. Indeed, they can be induced by "irrigating the amniotic cavity with cold solutions."[213]
Liley maintains that not only is the fetus an experienced swallower by the time birth occurs, but that in many cases it also has extensive suckling experience. Obstetric sonography and radiography has produced images of thumbsucking as early as 9 weeks. Liley maintains that the quite common occupance of the sucking of fingers and toes in the fetal period is an early manifestation of the "rooting" reflex common among neonates.[214]

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[207]ibid.. 62.

[208]K. De Snoo, "Das Trinkende Kind im uterus," Monatsschrift Geburtsh Gynaekologie 105 (1937): 88, quoted by Goodlin, Care of the Fetus, 2.

[209]Liley, "The Foetus as Personality," 196.

[210]ibid., 197.

[211]Hooker, The Prenatal Origin of Behavior, 70-74.

[212]ibid., 74-75.

[213]Ridgeway, The Unborn Child, 23.

[214]Liley, "The Foetus as Personality," 197-198.

g. The Olfactory Sense

While no evidence exists which allows one to conclusively state that human fetuses smell, this is not surprising given the absence of air within the uterus. Without the airborne particles needed to stimulate the specialized receptors within the olfactory epithelium, smell is impossible. However, some animal studies have found evidence of olfactory function in utero[215] and have connected odors with aversion conditioning.[216]

Research done with neonates immediately following birth, however, clearly demonstrates that the sense of smell is present and functional at birth.[217] Research has shown behavior indicating "acceptance and satisfaction" to the odors of bananas, strawberries and vanilla while indicating "rejection" to the odors of rotten eggs and fish.[218] In a similar study, babies from 1-6 days old turned away from the smell of ammonia on either the left or right indicating the ability to spatially orient the source of the smell and react accordingly.[219]

Other researchers have demonstrated learning behavior related to the sense of smell. Studies have shown habituation and dishabituation to various smells (licorice, garlic, vinegar and alcohol) by neonates with the clear ability to distinguish between pairs of smells.[220] Newborns between 2 and 7 days can also quickly distinguish between their mother's used breast pad and an unused one, and within several days distinguish between their mother's used pad and another woman's.[221] Breast-fed neonates also learn very quickly to discriminate their mother's underarm odor from that of other women.[222]

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[215]**Patricia E. Petersen, William B. Stewart, Charles A. Greer, and Gordon M. Shepherd, "Evidence for Olfactory Function in Utero," Science 221(1983): 478-480.**

[216]**William P. Smotherman, "Odor Aversion Learning by the Rat Fetus," Physiology and Behavior 29 (1982): 769-771.**

[217]**Benoist Schaal, "Olfaction in Infants and Children: Developmental and Functional Perspectives," Chemical Senses 13 (1958): 145-190.**

[218]**J.E. Steiner, "Facial Expressions of the Neonate Infant Indicating Hedonics of Food-Related Chemical Stimuli," in Tastes and Development: The Genesis of Sweet Preference. ed. J.M. Weiftenbach (Washington DC: US Govt Printing Office, 1977); J.E. Steiner, "Human Facial Expressions in Response to Taste and Smell Stimulation," Advances in Child Development and Behavior 13 (1979): 257-295.**

[219]**J. Rieser, A. Vonas, and K. Wikner, "Radial Localization of Odors by Human Newborns," Child Development 47 (1976): 856-859.**

[220]**T. Engen and LP. Upsitt, "Decrement and Recovery of Responses to Olfactory Stimuli in the Human Neonate," Journal of Comparative & Physiologicnl Psychology 59 (1965): 312-316; T. Engen, LP. Upsitt and H. Kaye, "Olfactory Responses and Adaptation in the Human Neonate," Journal of Comparative & Physiological Psychology, 56 (1963): 73.**

[221]**A. Macfarlane, "Olfaction in the Development of Social Preferences in the Human Neonate," ParentChild Interaction, CIBA Symposium 33 (1975).**

[222]**J.M. Cernoch and R.H. Porter, "Recognition of Maternal Axillary Odours by Infants," Child Development, 56:6, 1593-98.**

h. The Auditory Sense

The morphological structures which would allow hearing to occur are present and functional in the fetus from 20 weeks on.[223] Due to the presence of fluid in both the middle and external ear, there has been some debate among researchers as to sound energy levels actually reaching the fetus. Research does indicate that hearing does indeed take place[224] through bone conduction,[225] thus mostly at the higher-frequency levels.[226] Other research has shown that from the 24th week on, fetal listening is quite constant.[227] One study examining fetal movement of the eyes, arms, legs and head in response to sound found that responses first occurred between the 24th and 25th weeks, with consistent response following the 28th week.[228]

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[223]This conclusion came after a study of 700 fetuses. (R.B. Eisenberg, "Auditory Behavior in the Human Neonate: Functional Properties of Sound and Their Ontogenetic Implications," International Audiology 8 (1969): 34-45.

[224]Liley writes: "[The] averaging of foetal electroencephalographic records with repeated stimuli shows sound-evoked cortical potentials and demonstrates as does experience with deaf mothers that the foetus is responding directly. . . . Higher frequencies suffer less loss than low frequencies in transmission though tissues and fluid. Therefore, it is probably that with sound, unlike light, intrauterine spectra are similar to extrauterine. Further, it is worth noting that, unlike most foetal organs which start off in miniature, the structures of the inner ear are very nearly of adult size from initial development. This magnitude of course is necessary because cochlear spectral response obeys simple physical laws dependent on cochlear dimensions. If, for instance, the cochlear grew in proportion to the rest of the body, babies and children would hear in a different frequency range from adults and the communication gap between generations would be even wider than it is already." (Liley, "The Foetus as Personality," 199).

[225]O. H. Jensen and G. Flottorp, "A Method for Controlled Sound Stimulation of the Human Fetus," Scandinavian Audiology 11(1982): 145-150.

[226]A. A. Tomatis, "Ontogenesis of the Faculty of Hearing," in Pre- and Peri-Natal Psychology: An Introduction, ed. Thomas R. Verny (New York: Human Sciences Press, Inc., 1987), 28-29.

[227]Erik Wedenberg and Bjorn Johansson, "When the Fetus Isn't Listening," Medical World News (April 1970): 28-29.

[228]Jason C. Birnholz and Baryl R. Benacerraf, "The Development of Human Fetal Hearing," Science 222 (1983): 516-518.

That this is true is not surprising given the noise level inside the uterus. Utilizing an intrauterine photocatheter, noise as loud as 85 decibels reaches the fetus,[229] mostly from the mother's bodily internal activity. Less noisy, but still around 55 decibels are the intermittent sounds of voices, including the mother's and father's, and the more regular sounds of the flow of blood in synchrony with the mother's heartbeat.

Research done by SaIk[230] and others[231] has shown that this early fetal hearing is "remembered" after birth.[232] Using recordings of heartbeats at an "ideal" 72 per minute, Salk played these for a group of newborns while a similar "control group heard no recordings. Even though both groups recorded the same amount of food intake, the experimental group gained more weight and gained it quicker. The difference in time spent crying was also significant with the control group spending 60% vs. 38% for the experimental group in time spent crying.

Any sudden noise in a room will cause a startle response in a fetus "lined up under an image intensifier."[233] Indeed, when fetuses are tonally stimulated, their heart rates changes immediately and they begin to move.[234] Indeed, the simple observation of fetal reactions to

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[229]Liley, "The Foetus as Personality," 199.

[230]Lee Salk, "The Critical Nature of the Postpartum Period in the Human for the Establishment of the Mother-Infant Bond: A Controlled Study," Diseases of the Nervous System 31(1970): 110-116; Lee Salk, "The Role of the Heartbeat in the Relations Between the Mother and Infant," Scientific American (May 1973): 24-29. Chamberlain, citing Salk's 1973 study, writes that "at one point in the experiment when the heart sound was broadcast at 128 beats per minute, it became intolerable to the babies and had to be stopped." (Chamberlain, "The Cognitive Newborn," 37).

[231]Paul C. Vitz, "Preference for Tones as a Function of Frequency (hertz) and Intensity (decibels)," Perception and Psychophysics 11 (1972): 84-88.

[232]Commenting on the constant sound of the mother's heartbeat in utero, Liley writes: "Does this long exposure explain why a baby is comforted by holding him to your chest or is lulled to sleep by the old wives' alarm clock, or the magnetic tape of a heartbeat? Does this experience explain why the tick of a grandfather clock in a quiet study or library can be a reassurance rather than a distraction, why people asked to set a metronome to a rate which "satisfies" them will usually chose a rate In the 50-90 beat per minute range - and twins show a strong concordance in independent choice?" (Liley, "The Foetus as Personality," 199-200).

[233]ibid., 199.

[234]J. Bernard and L. W. Sontag, "Fetal Reactivity to Tonal Stimulation: A Preliminary Report," Journal of Genetic Psychology 70 (1947): 205; J.P. Lecanuet, C. Granier-Deferre, H. Cohen, and R. le Houezec. "Fetal Responses to Acoustic Stimulation Depend on Heart Variability Pattern, Stimulus Intensity and Repetition," Early Human Development 13 (1986): 269-283.

tones of sound are quite predictive of deafness.[235] As the decibel level of sound increases, so does the activity and heart rate of the fetus.[236] Using the fetal heart rate as a measure of response, 40 decibels in amplitude and 300 milliseconds in duration seems to be the parameters of auditory sensation.[237] Thus, many of the normal sounds of life are within the auditory scope of sensation and some studies seem to indicate a "remembering" of familiar noises, particularly their mother's voice.[238]

> Research has also shown that four and five month-old fetuses will respond differently to various types of music,[239] quieting down to Mozart and Vivaldi and exhibiting "violent kicking and movement" to the music of Beethoven and Brahms and rock music of every type.[240] From about 25 weeks on, infants will "jump" in synchrony with the beat of an orchestral performance.[241]
> Using sophisticated technology[242] Truby[243] and his colleagues focused have found that fetuses in utero were, through hearing of some sort, receiving and "remembering" various maternal speech features. Interestingly, Truby found similar correspondences of the infant cry

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[235]C. Granier-Deferre, J.P. Lecanuet, H. Cohen, and M.C. Busnel, "Feasibility of a Prenatal Hearing Test," Acta Oto Laryngologica, Supplement 421(1985): 93-101.

[236]A.K. Bartoshuk, "Human Neonatal Cardiac Acceleration to Sound: Habituation and Dishabituation," Perceptual and Motor Skills 15 (1962): 15-27.

[237]R.B. Eisenberg. "Auditory Behavior in the Human Neonate: I. Methodologic problems and the Logical Design of Research Procedures," Journal of Auditory Research 5 (1965): 159-177.

[238]Elizabeth M. Ockleford, Margaret A. Vince and Claire Layton, "Responses of Neonates to Parent's and Other's Voices," Early Human Development 18 (1988): 27-36.

[239]Clifford Olds, "A Sound Start in Ufe," Pre- and Pen-Natal Psychology Journal 1(1986): 82-85; Donald J. Shetler, "The Inquiry into Prenatal Musical Experience: A Report of the Eastman Projects, 1980-1987," Pre and Peri-Natal Psychology Journal 3 (1989): 171-189.

[240]Michael Clements, "Observations on Certain Aspects of Neonatal Behavior in Response to Auditory Stimuli," Paper presented at the 5th International Congress of Psychosomatic Obstetrics and Gynecology, Rome, 1977. Another researcher relates that one pregnant women who attended a rock concert came home with a broken rib due to the violent kicking of her fetus in response to the music. (Olds, "A Sound Start in Life," 82-85).

[241]Liley, "The Foetus as Personality," 199.

[242]Acoustic spectrograms and sonocineradiographic tracings.

[243]H.M. Truby and J. Und, "Cry Sounds of the Newborn Infant," In Newborn Infant Cry, ed. J. Und, Acta Paediatrica Scandinavica (1965): Supplement 163; H.M. Truby, "Prenatal and Neonatal Speech, Pre-Speech, and an Infantile Speech Lexicon," Child Language/Word 27 (1975): Parts 1-3.

related to the speech rhythms and intonations of the mother in extremely premature neonates (900 grams). The fact that newborns of mute mothers do not cry at all, or if so, cried in a very peculiar manner, lead Truby to speculate that the reception of incoming maternal speech is necessary for the production of speech. Further, confirming other studies related to fetal crying, Truby noted that fetuses seemed to be practicing the neuromuscular gestures of crying and vocalization.

Much research has also focused upon the ability of newborns to apprehend various sounds. Using brainstem electric response audiometry (BERA) it has been shown that normal neonates hear as well as adults.[244] While newborns seem to be especially responsive to sound frequencies within which the human voice falls, namely in the 500-900 Hertz range, they seem to prefer higher rather than lower frequency noises.[245] Newborns can distinguish the directions of sound sources[246] and they consistently respond to various noises when awake and asleep as measured by brain-wave patterns.[247] They react to recorded infant cries by crying themselves,[248] but to their own recorded cry by stopping crying, perhaps indicating a recognition of their own familiar voice.[249]

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[244]C. Schulman-Galambos and R. Galambos, "Assessment of Hearing," in Infants Born at Risk: Behavior and Development, ed. T.M. Field (New York: S.P. Medical & Scientific Books, 1979): 17ff.

[245]Chamberlain, "The Cognitive Newborn," 38.

[246]M. Wertheimer, "Psychomotor Coordination of Auditory and visual Space at Birth," Science, 134 (1961): 1692.

[247]W.S. Goodman, S.V. Appleby, J.W. Scott, and P.E. Ireland, "Audiometry in Newborn Children by Laryngoscope 74 (1964): 1316-1328; E.D. Weitzman, W. Fishbein, and L Graziani, "Auditory Evoked Responses Obtained From the Scalp Electroencephalogram of the Full Term Neonate During Sleep," Pediatrics 35 (1965): 458-462.

[248]M. Simner, "Newborns' Response to the Cry of Another Infant," Developmental Psychology 5 (1971): 136-150; A. Sagi and M.L Hoffman, "Epathetic Distress in the Newborn, " Developmental Psychology 12 (1976): 175-176.

[249]G. Martin, "Newborns Pacified by Tapes of Their Own Crying," Brain/Mind Bulletin (October 5, 1981): 2.

i. The Visual Sense

Vision is the most complex of the specialized senses and in some ways has proven to be the most difficult to determine as it relates to fetal visual acuity.[250] Although the womb is quite dark, light can and does pass through to the fetus.[251] Research has shown that from the 16th week on, the photo receptors in the fetal eye are sensitive to light.[252] Flashing light applied to the maternal abdominal wall produces fluctuations in the fetal heart rate[253] and will cause a startle response often followed by a turning-away of his head.[254]

Research done with premature infants has shown that the pupillary reflex is present and functions variably given the intensity of light present. The same response that occurs in utero to flashing light occurs in these premature infants, including changes in heart rate and the rate of respiration, the eye-blink reflex and the startle response often accompanied by "the eye-neck reflex involving a backward thrust of the head."[255] The ability to both horizontally and vertically track movement has also been demonstrated in preterm babies between 31-32 weeks.[256]

As with the auditory sense, much research has been done on the visual abilities of newborn infants. The first few months of post-natal life bring about great maturation in vision, but even at birth, vision, movement and object perception are "coordinated, cross-modal and

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[250]Chamberlain writes that "Paediatric texts about 20 years ago were reporting that newborns were virtually blind [ie. W.E. Nelson Textbook of Pediatrics (Philadelphia: Sanders, 1964)]. We know now that the visual system is well advanced at birth, though not perfect. One reviewer commented that 'infants seem to acquire new visual abilities with each improvement in the ingenuity and methodology of the researchers."' (Chamberlain, "The Cognitive Newborn," 38 quoting J. Allik and J. Valsiner, "Visual Development in Ontogenesis: Some Reevaluations," In Advances in Child Development and Behavior, Vol.15, eds. H.W. Reese and LP. Upsitt New York: Academic Press, 1980]).

[251] David R. Weaver and Steven M. Reppert, "Direct in utero Perception of Light by the Mammalian Fetus," Developmental Brain Research 47 (1989): 151-155. Liley also comments that ". . . with the high attenuation in tissue, the abnormal spectral composition and the boring view, what the foetus lacks is adequate illumination and a worthwhile image for practice in cone and macular vision." (Liley, "The Foetus as Personality," 198).

[252]H.F. Prechtl and J.G. Nijhuis, "Eye Movements in the Human Fetus and Newborn," Behavorial Braln Research 10 (1983): 119-124.

[253]C.N. Smythe, "Experimental Methods for Testing the Integrity of the Foetus and Neonate," Journal of Obstetrics and Gynecology of the British Commonwealth 72 (1965): 920.

[254]Verny, The Secret Life of the Unborn Child, 39.

[255]Chamberlain, "The Cognitive Newborn," 38.

[256]L.M.S. Dubowtiz, V. Dubowtiz, A. Morante and M. Verghote, "Visual Function in the Preterm and Fullterm Newborn Infant," Developmental Medicine and Child Neurology 22 (1980): 485-75.

meaningful."[257] The newborn has only a 20/500[258] visual capacity at birth,[259] but he can still make out most of the features of his mothers face if she is 6-12 inches away and can spot the outline of a finger as far as 9 feet away.[260] Infant acuity is "more or less adultlike" by 8 months.[261] At birth the neonate will track attractive moving targets with their eyes.[262] Likewise, enough rods and cones and present at birth to permit the perception of various colors and hues.[263] Differential electroencephalograph responses indicate neonatal responses to different wavelengths in the color spectrum.[264] Likewise, research has shown that infants as early as 1-2 weeks old indicate a rudimentary depth perception.[265]

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[257]C. von Hofsten, "Foundations of Perceptual Development," in Advances in Infancy Research, Vol.2, eds. L.P. Upsitt and C.K. Rovee-Collier (Norwood, NJ: Ablex Books, 1983), 241-264.

[258]One study found visual acuity of 20/150 in a group of infants (most of whom were one day old) to a set of stripes moving through an 180-degree arc 14 inches away and a "following pattern" similar to adults expose to the same test. (G.O. Dayton, M. Jones, P. Aiu, P. Rawson, B. Steele, and M. Rose, "Developmental Study of Coordinated Eye Movements in the Human Infant: I. Visual Acuity in the Newborn Human: A Study Based on Induced Optokinetic Nystagmus Recorded by Electro-oculography," Archives of Opthamology 11(1964): 865-870.

[259]According to Verny, this means that a neonate "cannot see a tree half a football field away." (Verny, The Secret Life of the Unborn Child, 40.) Chamberlain writes that "one expert says newborn acuity is like that of a domestic cat." (Chamberlain, "The Mind of the Newborn," 8, quoting Allik and Valsiner, "Visual Development in Ontogenesis: Some Reevaluations.")

[260]Verny, The Secret Life of the Unborn Child, 40.

[261]A.M. Norcia and C.W. Tyler, "Spacial Frequency Weep VEP: Visual Acuity During the First Year of Ufe," Vision Research 25 (1965): 1399-1408.

[262]R.N. Aslin, "Development of Smooth Pursuit in Human Infants," in Eye Movements Cognition and Visual Perneption, eds. D.F. Fisher, R.A. Monty, and J.W. Senders (Hillsdale, NJ: Lawrence Enbaum Associates, 1981); G. Dayton, M. Jones, B. Steel and M. Rose, "Developmental Study of Coordinated Eye Movements in the Human Infant: II. An Electro-oculographic Study of the Fixation Reflex in the Newborn," Archives of Opthamology 71(1964): 871-875; PH. Wolff and LW. White, "Visual Pursuit and Attention in Young Infants," Journal of the American Academy of Child Psychiatry 4 (1965): 437-484.

[263]J.S. Werner and LP. Upsitt, "The Infancy of Human Sensory Systems," in Developmental Plasticity, ed. E.S. Gollin (New York: Academic Press, 1981), 35-8; V. Dobson, "Spectral Sensitivity of the 2-Month Infant as Measured by the Visually Evoked Cortical Potential," Vision Research 16 (1976): 367-374.

[264]Chamberlain, "The Mind of the Newborn," 9.

[264]W. Ball and E. Tronick, "Infant Responses to Impending Collision: Optical and Real," Science 171 (1971): 818-820; T.G.R. Bower, Development in Infancy (San Francisco: W.H. Freeman & Co, 1974); T.G.R. Bower, J.M. Broughton and M.K. Moore, "Infant Responses to Approaching Objects: An Indicator of Response to Distal Variables," Perceotion & Psvchophysics 9 (1970); T.G.R. Bower, J.M. Broughton and M.K. Moore, "Demonstration of Intention in the Reaching Behavior of Neonate Humans," Nature 228 (1970): 5272.

Research done with neonates as young as 10 hours old also indicates various preferences in their visualization. They prefer patterns to plainly colored surfaces[266] as well as showing preferences for curved vs. straight lines, chromatic vs. achromatic stimuli, three-dimensional vs. two dimensional objects, complex vs. simple patterns, and faces vs. non- faces.[267]
Thus, to summarize the fetal period regarding the senses, deMause writes this regarding the 3rd to the 5th month:

> **The fetus . . . now floats peacefully, now kicks vigorously, turns somersaults, hiccoughs, sighs, urinates, swallows and breathes amniotic fluid and urine, sucks its thumb, fingers, toes, grabs its umbilicus, gets excited at sudden noises, calms down when the mother talks quietly, and gets rocked back to sleep as she walks about.[268]**

By birth the summary of behavior is a little more elaborate, but not substantially. Chamberlain writes:

> **From the first minute after birth the newborn has the ability to suck, swallow, get rid of wastes, look, hear, taste, smell, turn the head, and signal for help.[269] All sensory systems are functioning; many have been functioning for some time.[270]**

j. Intermodal Fluency

As with so many of the other areas of fetology, the integrative capabilities of the fetus and the neonate between sense modalities have been grossly underestimated. Much of the research already cited assumes a certain level of intermodal fluency and coordination between the senses and motor movement. For instance, the fact that the auditory and visual systems work together with motor control when a neonate looks at the source of sound is evidence of

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[266]R.L. Fantz, "The Origin of Form Perception," Scientific American, 204 (1961): 66-72; R.L Fantz, "Pattern Vision in Newborn Infants," Sci~fl~A 140 (1963): 298-297; R.L Fantz, "Visual Experience in Infants: Decreased Attention to Familiar Patterns Relative to Normal Ones," Science 146 (1964): 668-670; R.L. Fantz, "Visual Perception from Birth as Shown by Pattern Selectivity," Annals of the New York Academy of Sciences 118 (1965): 793-814.

[267]L. B. Cohen, "Our Developing Knowledge of Infant Perception and Cognition," American Psychologistt 34 (1979): 894-899.

[268]deMause, Foundations of Psychohistory, 253.

[269]F. Caplan, The First Twelve Months of Life (New York: Grosset & Dunlap, 1973), 20.

[270]Chamberlain, Consciousness at Birth 6.

these capabilities.[271] The same can be said of the fetus, with motor movement coordinated with the tactile, visual, auditory,

gustatory, and olfactory sense modes.

Research on premature and full-term newborns specifically illustrates the capabilities that exist at birth, thus allowing for the tentative assumption that these capacities existed in some approximate form prior to birth. Many of the findings of the research studies cited above require motor and sense coordination. For instance, the ability to both horizontally and vertically track movement with the coordination of the visual and motor spheres in preterm babies between 31-32 weeks[272] indicates this ability so that at birth, vision, movement and object perception are "coordinated, cross-modal and meaningful."[273] Sander's research[274] between newborns and their fathers showed, utilizing slow motion film, that motor synchrony with the visual sense mode took place to allow for anticipation of movement. As fathers moved their heads to look down at the neonate, the babies head and eyes began to look up. This occurred repeatedly, as did the synchrony of the father's and infant's hands. When the father's right hand moved up, the neonates left hand moved up and grabbed the father's finger. Using frame-by-frame microanalysis of the body movements of newborns as they relate to adult speech patterns shows that infant movement became synchronized with adult speech, whether live or recorded, whether English or Chinese. Newborns did not react in the same way either to the broadcast of pure tones in a simulation of the rate of human speech or to a babble of disconnected vowel sounds.[275]

All 16 newborns in the study acted similarly, continuing to move through speeches of up to 125 words in length. Given the sophistication of this behavior, Condon has concluded that at birth the neonate has "an ability to steadily track auditory speech variations with almost as great an ability as that of an adult."[276]

In an experiment using smooth and nubby pacifiers, Meltzoff and Borton[277] illustrated the transfer of information from one modality (tactile) to another (visual). A pacifier of the smooth or nubby variety was placed in the mouth of blindfolded newborns who were later able to identify by sight the type of pacifier which had been in their mouths. Other research[278] on newborn operant learning has connected head movement with the delivery of a squirt of milk if a bell sounded, thus linking the interoceptive, gustatory and auditory modalities.

These researchers have concluded that learning and other such "conceptualizations"[279] by their very nature are cross-modal and have stated that "in natural situations, stimulations effecting the newborn are almost by principle 'plurimodal', not only visual and auditory, but also tactual, thermal, olfactory, vestibular, and kinesthetic."[280]

Thus the conclusion is that the qualities of perception, learning, and memory are implied . . . (which infer] such integrative processes [as] sensory awareness, information processing, the organization of adaptive, behavioral responses, cognition, affect and memory--an integration basic to all interactions with the environment."[281]

Beyond the evidence for the existence of the morphological "hardware" for movement and sense perception is the evidence

that these capabilities allow for the - processes of learning, habituation, conditioning, memory, affect, dreaming, cognition, and self- expression. And indeed, the existence of these capabilities in the fetal period allows for the inference of a still "higher-level" organization of them into what might tentatively be called "consciousness", or even a "psychology".

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[271]Bower, Development in Infancy.

[272]Dubowtiz, Dubowtiz, Morante and Verghote, "Visual Function in the Preterm and Fullterm Newborn Infant," 465-75.

[273]Von Hofsten, "Foundations of Perceptual Development," 241-264.

[274]L. Sander, "New Knowledge About the Infant From Current Research: Implications for Psychoanalysis," Journal of the American Psychoanalytic Association28 (1980): 181-198.

[275]William Condon, "A Primary Phase in the Organization of Infant Responding," in Studies in Mother-Infant Interaction, ed. H.R. Schaffer (New York: Academic Press, 1977), 153-176; William Condon and Louis Sander, "Neonate Movement is Synchronized with Adult Speech: Interactional Participation and Language Acquisition," Science 183 (1974): 99-101.

[276]Condon, "A Primary Phase in the Organization of Infant Responding," 187.

[277]A. Meltzoff and W. Borton, "Intermodal Matching by Human Neonates," Nature 282 (1979): 403-404.

[278]H. Papousek, "Experimental Studies of Appetitional Behavior in Human Newborns and Infants," in iEarly Behavior: Comparative and Developmental Approaches, eds. H.W. , eds. H.W. Stevenson, E.H. Hess, and Rheingold (New York: John Wiley, 1967), 249-277; H. Papousek, "Individual Variability in Learned Responses in Human Infants," in Brain and Early Behavior, ed. R.J. Robinson (London: Academic Press, 1969); H. Papousek and M.Papousek, "Mothering and the Cognitive Head-Start: Psychobiological Considerations," in Studies in Mother-Infant Interaction, ed. H.R. Schaffer (London: Academic Press, 1977): Chapter 4.

[279]For instance, Liley writes regarding the concept of sensory space: "The subject has received some much-needed simplification by the evidence that the various sensory modalities all feed and share a common space, and that this space in fact is the effective motor space. . . . When does such a concept of space begin? Refined experiment on the neonate suggests that his sensory space is a little ball, that although he may receive visual and auditory signals from more distant sources he is not much interested in anything outside the sphere which extends just beyond his toes - a restriction which very neatly corresponds to his recently vacated home." (Liley, "The Foetus as Personality," 200).

[280]H. Papousek and M. Papousek, "Integration into the Social World: Survey of Research," in Psychobiology of the Human Newborn, ed. P.M. Stratton (New York: John Wiley, 1982), 367-390.

[281]H. Papousek and M. Papousek. "Intuitive Parenting: A Didactic Counterpart to the Infant's Precocity in Integrative Capacities." Handbook of Infant Development, 2nd ed. ed. J. Osofsky (New York: John Wiley, 1987); cited in Chamberlain, "Consciousness at Birth," 42.

CHAPTER 3

B. Morphological and Psychological Evidence for Lake's M-FDS

Fetal Development

1. Embryonal Development

2. Fetal Development

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k. Learning

Having presented evidence that a variety of stimuli can be sensed by the fetus and can in turn be responded to, we have the rudiments of what might be termed learning. Since learning requires a rehearsal of what has been learned, we must also assume the rudiments of memory. Thus we could define learning as "a change in behavior that accrues over time as a result of experience."[282] Chamberlain continues and states that "learning and memory are linked, behavior on later occasions being influenced by what happened in the past."[283]

Much research has focused upon the learning capabilities of neonates[284] described by one researcher as having exceptional abilities for "differential responding. discrimination learning, and conditioning, often achieved in a matter of minutes"[285] after birth. These capabilities. by extension, can be inferred in some measure to prenates.[286] at least late-term fetuses.[287] But, as Lipsitt warns, learning and other abilities do not necessarily follow

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[282]Chamberlain, The Cognitive Newborn, 23.

[283]ibid.

[284]Extensive reviews of these studies have been written and Include the following: Y. Brackbill and M.M. Koltsova, "Conditioning and Learning," in Infancy and Early Childhood, ed. Y. Brackbill (New York: Free Press, 1967), 207-288; LP. Upsitt, "Learning Capacities of the Human Infant," in Brain and Earlv Behavior Development in the Fetus and Infant, ed. R.J. Robinson (London: Academic Press, 1969), 227-249; LP. Upsitt and H. Kaye, "The Study of Sensory and Learning Processes of the Newborn," in Clinics in Perinatalogy 4 (1977). 163-186; LP. Upsitt and J.S. Werner, "The Infancy of Human Learning Processes," in Developmental Ptasticity, ed. E.S. Gollin (New York: Academic Press, 1981), 101-133; J. Trowel!, "Effects of Obstetric Management on the Mother-Child Relationship," in The Place of Attachment in Human Behavior, eds. C.M. Parks and J. Stevenson-Hinde (New York: Basic Books, 1982), 79-94.

[285]E.R. Siqueland and L.P. Upsitt, "Conditioned Head-turning in Human Newborns," Journal of Developmental Child Psychology 3 (1966): 356-376.

[286]Gina Kolata, "Studying Learning in the Womb," Science 225 (19M): 302-303.

[287]A typical example of very early learning is described by Liley: "Babies who have has as few as 10 heel punctures for blood samples in the first 72 hours after birth, for weeks or months afterwards will promptly cry if you thoughtlessly grasp their foot." (Liley, "The Foetus as Personality," 201).

an ever-increasing straight line of accumulative skill. Rather, some abilities actually diminish rather than increase with time and he puts forth the thesis that it is "time for someone to present the thesis that the newborn human creature is about as competent a learning organism as he can become."[288]

The same can be said for the fetus at any given developmental stage, and indeed, some research has shown that prenatal intervention[289] "enrichment" programs enhances the post-natal maturation process. Studies examining pre-natal "bonding" done through increased verbal communication from the mother to the fetus, found the positive effects of greater alertness and control at birth, earlier talking, independence and better concentration post-natally.[290] Other research has indicated the positive effect of extra stimulation and attention on preterms even up to one year late[291] and on full-term up to five.

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[288]**Lipsitt, "Learning Capacities of the Human Infant," 228, quoted by Chamberlain, Consciousness At Birth, 23.**

[289]**Brent Logan, "Infant Outcomes of a Prenatal Stimulation Pilot Study," Pre- and Peri-Natal Psychology Journal 6 (1991): 7-31; Brent Logan, "Teaching the Unborn: Precept and Practice," Pre- and Peri-Natal Psychology Journal 2 (1987): 14-17; Brent Logan, "The Ultimate Preventive: Prenatal Stimulation," in Prenatal and Perinatal Psychology and Medicine, eds. P. Fedor-Freybergh and M.LV. Vogel (Park Ridge, NJ: The Parthenon Publishing Group, 1988), 559-582; K. van de Carr, R. van de Carr and M. Lehrer, "Effects of a Prenatal Intervention Program," In Prenatal and Perinatal Psychology and Medicine, eds. P. Fedor-Freybergh and M.L.V. Vogel (Park Ridge, NJ: The Parthenon Publishing Group, 1988), 489-498; R. van de Carr and M. Lehrer, "Enhancing Early Speech, Parental Bonding, and Infant Physical Development Using Prenatal Intervention in Standard Obstetrical Practice," Pre-and Peri-natal Psychology Journal 1(1986): 20~0; R. van de Carr and M. Lehrer, "Prenatal University: Commitment to Fetal-Family Bonding and the Strengthening of the Family Unit as an Educational Institution," Pre- and Peri-Natal Psychology Journal 3 (1988): 87-102.**

[290]**E. Bowen, Pre-Birth Bonding (San Diego: Heartstart/Lovestart. 1983); E. Bowen, "A Program to Facilitate Pre-birth Bonding," in Prenatal Psychology and Medicine, eds. P. Fedor-Freybergh and M.LV. Vogel (Park Ridge NJ: The Parthenon Publishing Group. 1988), 267-271; M. Jernerg, "Promoting Prenatal and Perinatal Mother-Child Bonding: A Psychotherapeutic Assessment of Parental Attitudes," in Prenatal Psychology and Medicine, eds. P. Fedor-Freybergh and M.L.V. Vogel (Park Ridge NJ: The Parthenon Publishing Group, 1988), 253-266; 5. Lundington-Hoe and S.K. Galant, How to Have A Smarter Baby (New York: Collier-Macmillan, 1985); L Thurman, "Parental Singing During Pregnancy and Infancy can Assist in Cultivating Bonding and Later Development," in Prenatal Psychology and Medicine. eds. P. Fedor-Freybergh and M.LV. Vogel (Park Ridge NJ: The Parthenon Publishing Group, 1988), 273-282.**

[291]**H. Bender, "Psychological Aspects of Prematurity and of Neonatal Intensive Care: A Working Report," in Prenatal Psychology and Medicine, eds. P. Fedor-Freybergh and M.LV. Vogel (Park Ridge NJ: The Parthenon Publishing Group, 1988), 235-248; T. Field, "Stroking Dramatically Speeds up Preemies' Growth," Brain/Mind Bulletin (Dec 1985); L.I. Kramer and M.E. Pierpoint, "Rocking Waterbeds and Auditory Stimuli to Enhance Growth of Preterm Infants," Journal of Pediatrics 88 (1976): 297-299; E. Ray and H. Martinez, Rational Handling of the Premature Child (New York: Report to UNICEF, 1984); R. Rice, "Neurophysiological Development in Premature Infants Following Stimulation," Developmental Psychology 13 (1977): 69-76, Trowel, "Effects of Obstetric Management on the Mother-Child Relationship." 79-94.**

years,[292] including improved disposition, language ability and intelligence.

When considering fetal "learning" a distinction perhaps can and should be made between the observation in utero of "normal" foetal learning that might take place and attempts to condition the fetus and thus introduce "non-normal" learning into the intrauterine environment.[293]
Perhaps the first study that attempted to demonstrate fetal "conditioning" or habituation was that of Peiper in 1925.[294] His method involved emitting the sound of a car horn several feet from a mother's abdomen during a late-term pregnancy. He noted that this resulted in marked movement by the fetus which upon repetition gradually diminished. He concluded that the fetus' thus habituated to the noise.
The study of habituation[295] in newborns[296] has found neonatal habituation in response to auditory,[297] olfactory,[298] and visual[299] stimuli. Studies utilizing habituation as

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[292]**"J.H. Kennel and M. Klaus, "Early Events: Later Effects on the Infant," in Frontiers of Infant Psychiatry, eds. J. Call, E. Galenson and R. Tyson (New York: Basic Books, 1983), 7-16; M. Mustaph, "The Importance of Early Skin contact in Emotional Care," in Prenatal Psychology and Medicine, eds. P. Fedor-Freybergh and M.LV. Vogel (Park Ridge NJ: The Parthenon Publishing Group, 1988), 249-252; N.M. Ringler, MA. Trause, M.H. Klaus, and J.H. Kennell, "The Effects of Extra Post-partum Contact and Maternal Speech Patterns on Children's 10's, Speech, and Language Comprehension at Five," Child Development 49 (1978): 882-885; 5. Scarr-Salapatek and M.L Williams, "The Effects of an Early Stimulation Program for Low Birth Weight Infants," Child Development 44 (1973): 94-100.**

[293]**Hepper, "Foetal Learning: Implications for Psychiatry?" 289.**

[294]**A. Peiper, "Sinnesemp findungen des Kindes vor seiner geburt," Monatsschirft fur Kinderheilkunde 29 (1925): 237-241.**

[295]**Defined as "a decrease in response due to the repeated presentation of a specific stimulation." (R.F. Thompson and WA. Spenser. "Habituation: A Model for the Study of Neuronal Substrates of Behavior," Psychological Review 73 (1966): 16~). Another definition includes "a form of adaptive modification of behavior that involves memory, ie. learning." (Chamberlain, "The Cognitive Newborn," 43). One researcher calls habituation "the most fundamental form of learning." (P. Strarton, Psychobiology of the Human Newborn, London, J. Wiley, 1982], 235).**

[296]**Extensive reviews of neonatal and early infant habituation can be found in the following: R.E. Hinde, Behavioral Habituation (New York: Cambridge Univ. Press, 1970); W. Kessen, M.M. Haith, and P. Salapatek, "Human Infancy: A Bibliography and Guide," in Carmichael's Manual of Child Development, ed. P. Mussen (New York: Wiley, 1970) 287-444; H.V.S. Peek and M.J. Hertz, eds., Habituation, vols. 1 and 2 (New York: Academic Press, 1973).**

[297]**Bartoshuk, "Infant Neonatal Cardiac Acceleration to Sound: Habituation and Dishabituation," 15-27.**

[298]**Engen and Upsitt, "Decrement and Recovery of Responses to Olfactory Stimuli in the Human Neonate," 312-316; Engen, Upsitt and Kaye, "Olfactory Responses and Adaptation in the Human Neonate," 73.**

a measure of fetal learning have proven to be the easiest to do because of their lack of any invasive procedures and thus the majority of "fetal learning" research involves habituation. Habituation of fetal heart rate[300] and body movements[301] in response to vibration and auditory tones has been clearly demonstrated in fetuses as early as 23 weeks after fertilization and seems to appear first in females.[302] Mother study found true fetal habituation in fetuses aged 28-37 weeks.[303]

Since true habituation implies abilities for learning such as "a certain level of sensory competence, associative and memory capabilities",[304] then it stands that those fetuses deficient in these qualities should have deficits in habituation. Research on post-natal subjects suffering from schizophrenia,[305] Down's syndrome,[306] and hyperactivie[307] has shown this to be the case as well as studies illustrating that future cognitive abilities and skills are predictable from habituation abilities during both the fetal period[308] and early infancy.[309]

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[299]**S. Friedman, A.N. Nagy and G.C. Carpenter, "Newborn Attention: Differential Response Decrement to Visual Stimuli," Journal of Experimental Child Psychology 10 (1970): 44-51.**

[300]**R.C. Goodlin and E.W. Lowe, "Multiphasic Foetal Monitoring: A Preliminary Evaluation," American Journal of Obstetrics and Gynecology 119 (1974): 341-357: Granier-Deferre, Lecanuet, and Cohen, "Feasibility of Prenatal Hearing Test," 93-101.**

[301]**L.R. Leader, P. Baille, and B. Martin. "The Assessment and Significance of Habituation to a Repeated Stimulus by the Human Foetus," Early Human Development 7 (1982): 211-219: Lynda S. Madison, "Fetal Response Decrement: True Habituation?" Journal of Developmental and Behavioral Pediatrics 7 (1986): 14- 20; LW. Sontag and R.F. Wallace, "Preliminary Report of the Fels Fund: Study of Foetal Reactivity," American Journal of Diseases of Children 48 (1934): 1050-1057.**

[302]**L.R. Leader, P. Baille, and B. Martin, "Foetal Responses to Vibrotactile Stimulation: A Possible Predictor of Foetal and Neonatal Outcome," Australian and New Zealand Journal of Obstetrics and Gynaecology 24 (1984): 251-256.**

[303]**L.S. Madison, SA. Adubato, and J.K. Madison, "Foetal Response Decrement: True Habituation," Developmental and Behavioral Pediatrics 7 (1986): 14-20.** [304]**Hepper, "Foetal Learning: Implications for Psychiatry," 291.**

[305]**J.H. Gruzelier and P.H. Venebles, "Skin Conductance Orienting Activity in a Heterogeneous Sample of Schizophrenics," Journal of Nervous and Mental Disorders 155 (1972): 277-287.**

[306]**Dustman and D.A. Calmer, "Cortical Evoked Response and Response Decrement in Non-Retarded and Down's Syndrome Individuals," American Journal of Mental Deficiency 83 (1979): 391-397.**
[307]**Hutt and C. Hutt, "Hyperactivity in a Group of Epileptic (and some non-Epileptic) Braln Damaged Children," Epilepsia 5 (1964): 334-351.**

[308]**Lynda S. Madison, James K. Madison, and Susan A. Adubato, "Infant Behavior and Development in Relation to Fetal Movement and Habituation," Child Development 57 (1986): 1475-1482.**

Other studies have shown this same predictability using prematurely born neonates[310] during delivery.[311] Habituation deficits have also been shown in fetuses' suffering from brain disorders such as microcephalia and anencephalia.[312]

An alternate methodology seeking to demonstrate fetal learning capabilities has used classical conditioning. Ray,[313] in a study from 1932, paired vibration as a conditioned stimulus with a loud bang as an unconditioned stimulus. While no data were reported by Ray[314] as to the success of his experiment, the study was repeated in 1948 by Spelt[315] who reported that after 15-20 pairings of the CS (conditioned stimulus) and UCS (unconditioned stimulus), the CS alone elicited a response among 16 fetuses in the last two months of pregnancy.
More recently, similar studies have found similar results. In a series of studies by Feibo,[316] fetuses ages 30-37 weeks were classically conditioned with the repeated pairing of music as the UCS with the mother's relaxation as a CS. After 24 pairings, fetuses stopped all movement upon hearing the music alone. Feijoo found that this "learning" was retained following birth for fetuses that had been conditioned between 22 and 36 weeks. These newborns stopped crying, opened their eyes and showed fewer clonic movements upon hearing the same music 6 minutes after birth.

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[309]M.H. Bornstein and M.D. Sigman, "The Onset and Early Development of Behavior," in Manual of Child Psychology, 2d ed., ed. L Carmichael (New York: J. Wiley, 1954), 60-185.

[310]S.A. Rose and l.F. Wallace, "Visual Recognition Memory: A Predictor of Later Cognitive Functioning in Preterms," Child Development 58 (1985): 843-852.

[311]W. Bowes, Y. Brackbill, E. Conway, and A. Steinschneider, "The Effects of Obstetrical Medication on Fetus and Infant," Monographs of the Sodet" for Research in Child Development 35 (1970): 3-25.

[312]L.R. Leader, P. Baille, and B. Martin, "Foetal Habituation in High-Risk Pregnancies," BrItish Journal of Obstetrics and Gynecology 89 (1982): 441-446.

[313]W.S. Ray, "A Preliminary Report on the Study of Foetal Conditioning," Child Development 3 (1932): 175-177.

[314]Ray concluded his report with the observation that the newborn suffered "no ill effects from her prenatal education." Quoted in Hepper, "Foetal Learning: Implications for Psychiatry," 289.

[315]D.K. Spelt, "The Conditioning of a Human Fetus 'in Utero."' Journal of Experimental Psychology 38 (1948): 338-346.

[316]J. Feijoo, "Ut Conscientia Noscatue," Cahier de Sophrologie 13 (1975): 14-20; J. Feijoo, "Le Foetus Pierre et le Loup: Ou Une Approache Originale de l'Audition Prenatale Humaine," in L'Aube des Sens, eds. H. Herbinet and M.C. Busnel (Paris: Stock, 1981).

Studies examining the ability to classically condition preterms and neonates are numerous. An early study of aversive conditioning was done by Aidrich.[317] After twelve pairings of a bell with pricking the sole of a neonate's sole with a pin, the bell alone produced a reflexive response. A more recent study[318] on 2-week old preterms pairing the smell of ammonia with a tone produced the same result. Perhaps taking their cue from Pavlov, numerous studies conditioning neonates related to heart rate, pupillary dilation and constriction, eye blinks and sucking as well as various studies examining fetal conditioning have been done by Russian researchers from the early 1920's.[319]

A second category of "learning" studies has examined more naturally occurring events in the fetus' environment. For instance, several studies have examined a variety of fetal responses in connection with voices,[320] particularly the mother's voice. Using 3-day old newborns as subjects, various researchers have shown that neonates will alter their sucking response (either increasing or decreasing it) in order to hear their mother's voice[321] but will not do the same to hear their father's voice.[322] Presumably, the constant prenatal auditory contact with the mother's voice vs. the father's voice gives rise to these preferences.

Seeking to test the memory of auditory learning from the prenatal period vs. mere familiarity with the mother's voice, DeCasper and Spense[323] had pregnant women read a story repeatedly to their fetuses. Newborns were found to alternate their sucking responses to

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[317]C.A. Aldrich, "A New Test for Hearing in the Newborn: The Conditioned Reflex," American Journal of the Disabled Child 35 (1928): 36.

[318]R.l. Polikanina, "The Relation Between Autonomic and Somatic Components in the Development of the Conditioned Reflex in Premature Infants," Pavlov Journal of Higher Nervous Activity 11(1961): 51.

[319]Brackbill and Koltsova, "Conditioning & Learning," 207-288.

[320]Luke refers to this possibility when he quotes Anna (John the Baptist's mother) as telling Mary (Jesus' mother) the following regarding their initial interaction while both were in the early pregnancies: "For behold, when the voice of your greeting came to my ears, the babe in my womb leaped for joy." (Luke 1:44; NIV)

[321]A.J. DeCasper and W.P. Fefer, "Of Human Bonding: Newborn's Prefer their Mother's Voices," Science 208 (1980): 1174-1176.

[322]A.J. DeCasper and P.A. Prescott, "Human Newborn's Perception of Male Voices: Preference, Discrimination and Reinforcing Value," Developmental Pschobiology 17 (1984): 481-491.

[323]A.J. DeCasper and M.J. Spence, "Prenatal Maternal Speech Influences Newborn's Perception of Speech Sound," Infant Behavior and Development 1(1978): 36-48.

this same story read by another women but did not respond to a novel story read by the same woman. Thus, the conclusion was that "the foetus has learned and remembered something about the acoustic cues that specified the story read to them in the womb, and conclusively demonstrates prenatal learning of acoustic cues in the womb."[324]

One other study[325] found that the newborn children of mothers who watched a particular soap opera during their pregnancy tended to stop crying and became alert when the theme song of the program was played. Infants of women who had not watched the same program showed no response to the music.
Numerous other studies have focused on the abilities of newborns to learn. For instance research has illustrated neonatal abilities to imitate behavior,[326] to change sucking behavior in response to negative and positive pressure on the gums,[327] In response to regular or blunt nipples,[328] and in response to plain and sweet fluids.[329] While these studies were quite simple, newborns have shown quick learning ability even in the mastery mastering of complex and confusing sets of contingencies and even continue to learn when these contingencies were reversed.[330] Associated with these learning tasks, newborns have been found to have good memory associations, including procedural memory,[331] semantic memory[332] episodic memory[333] and emotional are affect memory.

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[324]**Hepper, "Foetal Learning: Implication for Psychiatry?" 290.**

[325]**Peter G. Hepper, "Foetal 'Soap' Addiction," Lancet 1(1988): 1347-1348.**

[326]**T. M. Field, R. Woodson, R. Greenberg and D. Cohen, "Discrimination and Imitation of Facial Expressions by Neonates," Science 218 (1982): 179-181: A. Meltzoff and M.K. Moore, "Imitation of Facial and Manual Gestures by Human Neonates," Science 195 (1977): 75-78: A. Meltzoff and M.K. Moore, "The Origins of Imitation in Infancy: Paradigm, Phenomena, and Theories," in Advances in Infancy Research, Vol.2, eds. L.P. Upsitt and C. Rovee-Collier (Norwood, NJ: AbIex, 1983), 265-301.**

[327]**A.J.Sameroff, "Learning and Adaptation in Infancy: A Comparison of Models," in Advances in Child Development 7 (1972): 170-214.**

[328]**J. Brown, "Instrumental Control of the Sucking Response in Human Newborns," Journal of Experimental Child Psychology 14 (1972): 66-80.**

[329]**K. R. Kobre and L.R. Upsitt, "A Negative Contrast Effect in Newborns," Journal of Experimental Child Psychology 14 (1972): 81-91.**

[330]**Siqueland and Lipsitt, "Conditioned Head-Turning in Human Newborns," 356-376.**

331 Defined as "retention and recall of learned connections between stimuli and responses.' (Chamberlaln, "The Mind of the Newborn," 16, quoting E. Tulving, "How Many Memory Systems are There?" American Psychologist 40 [1985]: 385-398); C. Rovee-Collier, "Baby's Memory," American Psychological Association Monitor (Oct 1985): 25.

[332]**Defined as "internal states of meaning not perceptually present . . . a conscious form of cognition." (Chamberlain, "The Cognitive Newborn," 59.); J.A. Ungerer, LR. Brody, and P.R. Zelazo, "Long-term Memory for Speech in 2-4 Week-old Infants," Infant Behavior and Development 1(1978): 177-186; LR. Brody, P.R. Zelazo, and H. Chalka, "Habituation-Dishabituation to Speech in the Neonate," Developmental Psychology 20 (1984): 114-119.**

[333]**Defined as "various forms of recall of specific episodes in the past." (Chamberlain, "The Cognitive Newborn," 59.); J.S. Werner and E.R. Siqueland, "Visual Recognition Memory in the Preterm Infant," Infant Behavior and Development 1(1978): 79-94; A. Slater, V. Morison, and D. Rose, "Visual Imagery at Birth," British Journal of Psychology 73 (1982): 519-525.**

CHAPTER 3

B. Morphological and Psychological Evidence for Lake's M-FDS

Fetal Development

1. **Embryonal Development**
2. **Fetal Development**

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I. Emotion

Whether fetal or neonatal emotion exists in the same or similar manner of adults is impossible to determine due to its subjectivity. Research with both preborn and newborns, however, has shown clear evidence for at least the external behavior normally associated with internal emotion. For instance, crying, of both the intra-uterine and extra-uterine varieties, has been connected to the internal states of pain, anger and rage.

As stated earlier, audible fetal crying is rare because it requires the presence of air in the fetal trachea. However, Ryder,[334] after a comprehensive review of the literature from 1800-1941, reported 123 cases by 114 different observers. More recent corroboration has presented three instances when fetal crying occurred in response to rupture of a membrane, manual displacement of the head or the attachment of electrodes for internal monitoring.[335] Audible crying has been reported from infants weighing as little as 650 grams [336] and Humphre[337] cites instances of 5 aborted fetuses from age 21-22 weeks audibly crying.

It has been argued that fetal crying is not indicative of any emotional state, but is undifferentiated. The same has been asserted with regard to neonatal crying. However, research has shown that crying of preterm and full-term infants is very differentiated, even from each other.[338] Utilizing spectrography to produce "cryprints"[339] researchers have clearly distinguished various cries as communicating different emotional states,[340] including between birth, pain and hunger.[341] Spectrographic distinctions have been found in the cries of infants who are had been prenatally and perinatally chronically stressed,[342] who have chromosomal aberrations[343] hyperbilirubinemia,[344] and fetal malnutrition.[345]

Other studies have also illustrated the range of communicatory cries possible with newborns. Using sonography and audio tape recording before, during and after circumcision, one study[346] demonstrated that certain distinctions in "cries" were definitely correlated to degrees of pain as measured by the relative degree of the invasiveness of the surgical procedure. Definite differences in pitch, temporal patterning and harmonic structure were discernable with various degrees of pain.

Another study[347] with older infants aged 2-10 months was also able to sonographically distinguish various degrees or pleasure and displeasure. In this study, two month old infants showed emotional expression across the entire continuum of possible affect states, from extreme pleasure to extreme displeasure. Still another study[348] demonstrated easily discernible audible sounds of pleasure in child-parent interactions in infants from 2-4 months of age.

Another category of the external indication of internal affect states includes various facial expressions, particularly smiling. The earliest smiles occur during the REM[349] stages of sleep,[350] perhaps indicating "expressions of private pleasure in dreams."[351] what makes REM sleep so

significant is the correlation of this stage with dreaming activity. One study[352] found that various measurable alterations in specific physiological systems (ie. gross motor movement, raspatory irregularities) was identical for adults as for full-term and premature neonate, leading to the conclusion that even premature infants and fetuses dream.

Whether this activity involves the full visual imagery and the other characteristics of adult dreaming is impossible to determine, but the REMS of neonates and adults is alike in every measurable way. The big difference has to do with the amount of time spent in REM sleep vs non-REM sleep. Those of old age spend less than 1 hour (13% of sleep time) in REM; adolescents 20%; full-term newborns 50%; 36-38 week preemies 58%; 33-35 week preemies 67%; and virtually 100% for 30 week old premature infants. Interesting, this study noted many expressions of emotion on the faces of the various infants during REM sleep: grimaces, smiles, whimpers and even the nuances of affective expression such as perplexity, disdain, skepticism, and amusement.

Smiling has often been observed at birth,[353] but until recently it was thought to be a "physiological artifact" (ie. caused by gas).[354] However, research has identified neonatal smiling in response to specific tasks and also a wide variation in the frequency of smiling.[355]

Other facial expressions indicative of affect states have been clearly identified in newborns, including expressions that seem to indicate sadness, fear, disgust, happiness, surprise, anger, interest,[356] distress, and shame. Using videotape of neonates in the first week of life, Eisenberg and Marmarou[357] revealed of full range of clear-cut expressions of emotion. Another study[358] examined neonatal affect states as perceived by their parents. Ninety-five percent reported seeing joy and interest, 78% saw anger, 68% surprise, 65% distress, 40% sadness, 40% disgust, and 35% fear in their babies during the first week of life. The introduction of new information resulting in the quick appropriate change of affect suggests the dependence of emotion upon cognitive beliefs and cognitive processes.[359]

Key to any verification of Lake's M-FDS[360] as a possible paradigm must be the explanation of how the maternal-fetal affect flow functions. Lake noted early on that the reaction to early emotional stress tended to set up a pattern of similar reacting that is life-long.

Persons who early on reacted "hysterically" tended to react hysterically as adults. Persons who adopted the typical "depressive" defense patterns early on, tended to utilize them as adults.

How does the emotional life of the mother effect the developing fetus? Lake's understanding is essentially that of Mott's, who conceptualized a bi-directional flow of blood from mother to fetus as mediated by the placenta through the umbilical cord, which gives rise to various physical "feelings"[361] that are the basis for subsequent psychological "feelings". Lake picked up on Mott's term "umbilical affect" to designate this exchange, defining it as the "feeling state of the fetus as brought about by blood reaching him through the umbilical vein."[362]

As both Lake and Mott define this exchange, the umbilical vein not only conveys nutritive resources and as such could be experienced as a "life-giving flow, bringing renewal and restoration" but could also "be the bearer of an aggressive thrust of bad feelings into the foetus if the mother herself was distressed and 'feeling bad."' If the mother felt emotionally unsupported, then "this feeling of deficiency, lack of recognition and the failure of looked-for support, would be just as specifically felt by the fetus.

It became distressed by the failure of its immediate environment to provide the expected acceptance and sustenance, not so much at the level of metabolic input . . . but to nourish the earliest beginnings of the person in relationship."[363]

Certainly the biological morphology for this exchange exists very early on, from about the fifth week after fertilization until birth. With the development of the placenta and umbilical cord, the embryo/fetus exchanges $C0_2$, water, urea, hormones and waste products for oxygen, water electrolytes, protein and lipid carbohydrates, vitamins, antibodies and other nutrients. But the morphological structures which allow this "natural" exchange to occur also allow for the passage through the placental barrier of various teratogens,[365] namely drugs[366] and almost all viruses. Much research has been done on the deleterious effects of various teratogens and other prenatal "conditions", including hyperthermia,[367] malnutrition,[368] alcohol,[369] phencyclidine (PCP),[370] heroin,[371] cocaine,[372] codeine,[373] methadone,[374] amphetamines ,[375] antidepressants and sedatives,[376] caffeine,[377] smoking,[378] barbiturates,[379] marijuana,[380] khat,[381] thalidomide, phenobarbital,[382] diethystilbestrol (DES),[383] lead,[384] rubella,[385] infIuenza,[386] diabetes,[387] tuberculosis, syphilis, hepatitis, chicken pox, lead,[388] and radiation.[389]

The idea that the pregnant mother's emotional state during pregnancy might have a positive or deleterious effect on the developing baby within here is certainly not new[390] In an early study from 1941, Sontag[391] found that pregnant women who were anxious, angry and/or afraid tended to have babies with higher heart rates, digestive problems, lower birth weight, and hyperactive. Numerous studies[392] since have confirmed these findings, reinforcing Sontag's original results. For instance, emotionally disturbed women tend to have infants who are irritable,[393] poor sleepers,[394] prone to gastrointestinal difficulties,[395] have higher activity rates,[396]. cry more,[397] are perceived by their parents as having a difficult temperament,[398] and score lower on mental and motor skills tests.[399] Several studies have connected anxiety[400] and/or various psychiatric diagnoses[401]In pregnant women with a much higher incidence of various birth complications.

Another study[402] examined 37 children with severe emotional/behavioral disorders vs. 119 children with severe emotional handicaps vs. 211 "normal" children. Using 26 items from the MPS (Maternal-Perinatal Scale),[403] this study found that the item with the highest correlation as a predictive factor of post-natal emotional and behavioral disorders was cigarette smoking followed closely by matemal stress throughout pregnancy.[404] This study reinforced other studies that have connected maternal stress with general behavior problems,[405] attention deficit disorder,[406] childhood autism,[407] psychosis,[408] schizophrenia,[409] and psychiatric disorders in general.[410]

Various studies have also correlated the likelihood of spontaneous abortions and birth complications with the level of fear, anxiety, and guilt in pregnant women[411] as well as disturbances in attitudes toward the child within them.[412] Research has also shown a connection between various psychological factors and preterm delivery.[413]

For instance, premature delivery is more likely to occur in women who have negative attitudes toward the pregnancy, were emotionally immature, had unresolved conflicts toward their mothers, a history of traumatic experience with a previous pregnancy, a high level of anxiety, feelings of inadequacy in female roles,[414] difficulty in accepting the pregnancy, poor communication with their fetus (or none),[415] lack of a

spouse,[416] husbands who offered little or no support,[417] and an initial negative reaction to their first menses.[418]

Indeed, the sum total of research seems to indicate that potentially any emotional stress to the mother can lead to complications of various types,[419] not only after birth but even before birth. For instance, mothers under severe emotional distress are likely to have hyperactive fetuses[420] and mothers who are anxious[422] or emotionally upset[421] are likely to have fetus's suffering from tachycardia.

One study illustrated the effects on 28 fetuses ages 18 to 36 weeks in response to their mother's reactions to an earthquake.[423] Using ultrasonography, the researchers were able to observe the intense hyperkinesia in all of tile fetuses which lasted from 2 to 8 hours. Other studies[424] have also connected fetal behavior to maternal emotional state.

What allows the affect state of the mother to effect the child she is carrying are the neuroendocrinological interactions of the endocrine system and the nervous system, particularly a group of hormones called catecholamines,[425] including epinephrine, norepinephrine and dopamine. Beginning in 1925, W.B. Cannon[426] found that fear and anxiety could be biochemically induced in animals. His method was simple; he withdrew the blood and thus the catecholamines of already fearful and frightened animals and injected them into calm and relaxed animals. Within seconds and in the absence of any fear or anxiety producing stimuli, these animals began to act fearful and anxious. Cannon discovered that the catecholamines acted like "a circulating fire alarm system,"[427] provoking all the physiological responses to fear and anxiety, particularly those of the sympathetic division of the autonomic nervous system.

This identical process allows the developing embryo and fetus to be affected by the mother's affective processes. When the gravida is anxious or fearful, various hormones, including adrenaline, flood into the blood stream and easily cross the placental barrier, thus provoking, biochemically, the physiological reaction to anxiety and fear in the fetus.[428] The mechanism that allows this process to work begins with the mother's brain, which is sensing and perceiving the environment. External circumstances, actions and thoughts are perceived in the cerebral cortex and subsequently affectively reacted to in the hypothalamus. The hypothalamus, in turn, directs the endocrine system and the autonomic nervous system to produce affect-appropriate physiological changes. For instance, sudden fear in a pregnant women quickly results in the hypothalamus directing the sympathetic division of the autonomic nervous system to make the heart beat faster, the palms to sweat, the blood pressure to rise, the pupils to dilate and the muscles to tense. The hypothalamus also directs the endocrine system to flood the woman's body with hormones,[429] which as noted above, pass through the placenta to the fetus.

What is so important about this process is the effect it can have on the developing embryo and fetus. The various hormones released by the endocrine system, while variously reversible in adults, can be more-or-less irreversible at certain critical periods in development during the embryonic and fetal stages.

Sontag, in an early study titled "War and the Maternal-Fetal Relationship"[430] observed that the babies of women whose husbands were serving in the armed services and thus daily threatened with death tended to be crankier and have an array of physical problems. He theorized that the intra-uterine environment of constantly worrying mothers would have a deleterious effect on a whole generation of infants.

Sontag coined the term "somatopsychics"[431] to describe the way "basic physiological processes affect the personality structure, perception, and performance of an individual."
Thus, the developing fetal morphological apparatus is influenced by the intra-uterine environment in such a way as to predispose certain psychological processes following birth.
Several studies[432] have found what seems to be discriminations of stressors by the maternal-fetal unit. Stott found that no negative effects, either physical or emotional, seemed to be present in the children of mothers who had suffered fairly intense, but brief stressors (ie. witnessing a violent dog fight, suffering a scare at work, having an older child run away for a day).[433] The argument that the brief exposure of the fetus to the "bath of neurohormones" necessarily limits the possibility of negative effect and this was true. But Stott and others[433] have also found that intense, long-term, stress did not always result in post-natal deficiencies.
When prolonged stress did not directly threaten the mother (ie. illness of a close relative) there seemed to be no ill effects while stressors that did effect the potential well-being of the mother[435] seemed to produce problems. Stott found that 10 out of 14 women suffering from personally threatening stressors which were long-term delivered babies with some physical or emotional problem. Two characteristics were deemed to be significant in the problem-causing stressors: "they tended to be continuous or liable to erupt at any time and they were incapable of resolution."[436]

Verny, in commenting on Stott's study, writes:

> **The only way to make sense of the difference [between the two groups subjected to long-term stress] is in terms of perception. In one case, the children were able to sense that while very real, their mother's distress was not threatening to her or them; in the other case, they sense, accurately, that her distress was a threat.[437]**

Thus, some kind of fetal perceptual apparatus is assumed to enable the ability to distinguish between threatening and non-threatening neurohormones. One possible mechanism that might explain this is through a concomitant ongoing exchange between mother and fetus that communicates the positive vs. negative feelings of the mother herself to the child.
Numerous studies have examined the role of maternal attitudes,[438] particularly attachment[439] toward the fetus growing within them. One study[440] examining 2000 pregnant women found that the single greatest factor in neonatal outcome was the attitude of the mother toward her child.[441] The subjects in this study all had the same quality and quantity of prenatal care, were equally educated, and were of the same social and economic class.
Lukesch and others[442] have found that the infants of mothers were accepting of their pregnancies and who looked forward to the arrival of the baby were much more likely to give birth to a emotionally and physically healthy child than mothers who had negative attitudes towards the pregnancy and were "rejecting."[443]
Another study[444] on 141 pregnant women duplicated Lukesche's results. Using various psychological tests, Rottman divided the pregnant women into 4 groups. Results with the two extremes were clear, with "Ideal" mothers (who both consciously and unconsciously wanted their unborn

children) having the easiest pregnancies, the most trouble-free births, and the most physically and emotionally healthy infants. "Catastrophic" mothers (who both consciously and unconsciously were rejecting of their unborn children) "had the most devastating medical problems during pregnancy, and bore the highest rate of premature, low-weight, and emotionally disturbed infants."[445]

Two other groups of mothers emerged, called "Ambivalent" (consciously wanting while unconsciously rejecting) and "Cool" (consciously rejecting while unconsciously wanting) mothers. The former gave birth to an unusually large number of neonates who suffered from behavioral and gastrointestinal problems, while the latter gave birth to babies who tended to be apathetic and lethargic.

Verny hypothesizes that regardless of the various stresses that these women went through, the acceptance or lack of acceptance by the mother is somehow perceived by the fetus and that among those fetuses who felt accepted, a measure of maternal "support' and "acceptance" was evident enough which somehow enabled them to better cope with the stresses that emerge.

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[426]Verny, The Secret Life of the Unborn Child, 44.

[427]ibid.

[428]Fredenck Kruse, "Nos Souvenirs du Corps Maternal," Psychologie Heute (June 1978): 56; David A. Peters. "Effects of Maternal Stress During Different Gestational Periods on the Serotonergic System in Adult Rat Offspring," Pharmacology Biochemistry and Behavior 31 (1988): 839-843.

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[431]This term infers the mirror process of "psychosomatics", which refers to the way in which psychological processes effect physiological ones. Verny, The Secret Life of the Unborn Child, 54).

[432]Dennis Stott, "Follow-up Study from Birth of the Effects of Prenatal Stresses," Developmental Medicine and Child Neurology 15 (1973): 770-787; Dennis Stott and Sandra Latchford, "Prenatal

Antecedents of Child Health, Development, and Behavior: An Epidemiological Report of Incidence and Association," Journal of the American Academy of Child Psychiatry 15 (1976): 161-191.

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[434]Anthony E. Reading, "The Influence of Maternal Anxiety on the Course and Outcome of Pregnancy: A Review," Health Psychology 2 (1983): 187-202. Reading found that the impact of anxiety and stress is often moderated by other factors, such as attitudes toward the pregnancy, psychosocial support and appraisal of the threat of the stressor.

[435]Especially when the source of the stress was a close family member, usually the husband. In another study (Dennis Stott, "Children in the Womb: The Effects of Stress," New Society, [May 1977]: 329-331.) Stott rates a bad marriage or relationship as among the greatest causes of stress. Studying over 1300 children and their families, he estimates that a women trapped by a stormy marriage with an abusive or unsupportive husband runs a 237% greater risk of bearing a emotionally or physically handicapped child as opposed to a woman from a secure, nurturing stable marital environment. Further, Stott found that unhappy marriages tended to produce babies who were on average 5 times more fearful and "jumpy" than offspring from happy marriages. Verny writes that "these youngsters continued to be plagued by problems well into childhood. At four and five, Dr. Stott found them to be undersized, timid, and emotionally dependent on their mothers to an inordinate degree." Verny, The Secret Life of the Unborn Child, 50).

[436]Verny, The Secret Life of the Unborn Child, 48, quoting Stott, "Children in the Womb."

[437]ibid.

[438]Ricoard C. Ainslie, Antal E. Solyom, and Michael E. McManus, "On the Infant's Meaning for the parent: A Study of Four Mother-Daughter Pairs," Child Psychiatry and Human Development 13 (1982): 97-110; John T. Condon, "The Parental-Foetal Relationship: A Comparison of Male and Female Expectant Parents," Journal of Psychosomatic Obstetrics and Gynaecology 4 (1985): 271-284; Sam C. Eggersten and Thomas J. Benedetti, "Fetal Well-Being Assessed by Maternal Daily Fetal-Movement Counting," Journal of Family Practice 18 (1984): 771-781; Anthony E. Reading, David N. Cox, Caroline Sledmere, and Stuart Campbell, "Psychological Changes Over the Course of Pregnancy: A Study in Attitudes Toward the Fetus/Neonate," Health Psychology 3 (1984): 211-221.

[439]Kathleen F. Gaffney, "Maternal-Fetal Attachment in Relation to Self-Concept and Anxiety," Maternal Child Nursing Journal 15 (1986): 91-101; Ramona T. Mercer, Sandra Ferketich, Katharyn May, and Jeanne Dejospeh, "Further Exploration of Maternal and Paternal Fetal Attachment," Research in Nursing and Health 11 (1988): 83-95; Ben Sjogren and Nils Uddenberg, "Prenatal Diagnosis and Maternal Attachment to the Child-to-Be: A Prospective Study of 211 Women Undergoing Prenatal Diagnosis with Amniocentesis or Chronic Villi Biopsy," Journal of Psychosomatic Obstetrics and Gynecology 9 (1988): 73-87; Colleen M. Stainton, "The Fetus: A Growing Member of the Family," Family Relations Journal of Applied Family and Child Studies 34 (1985): 321-326; J. Hana Wu and Mary A. Schmann, "Fetal Sex Identification and Prenatal Bonding," Psychological Reports 63 (1988): 199-202.

[440]Monika Lukesch, "Psychologie Faktoren der Schwangerschaft" (Ph.D. diss., University of Salzburg, 1975).

[441]The second most important variable was that of the quality of a woman's relationship with her spouse.

[442]John T. Condon, "Psychological and Physical Symptoms During Pregnancy: A Comparison of Male and Female Expectant Roles," Journal of Reproductive and Infant Psychology 5 (1987): 207-219.

[443]Verny, The Secret Life of the Unborn Child, 48, quoting Lukesch, "Psychologie Faktoren der Schwangerschaft."

[444]Gerhard Rottman, "Untersuchungen óber Einstellung zór Schwanger schaft und zur fotalen Entwicklung," in Pranatale Psycholopie, ed. Hans Graber (Mónchen: Kindler Verlag, 1974).

[445]Verny, The Secret Life of the Unborn Child, 48.

CHAPTER 5

CONCLUSIONS

A. Critique of the M-FDS as a Scientific Paradigm

1. Introduction and The Old View

Having presented in detail Lake's formulation of the M-FDS in chapters two and four, along with some historical and psychophysiological evidence in chapter three, to what extent can his model be maintained as paradigmatic in the manner previously discussed? Lake's designation of the M-FDS as a "new paradigm"[1] in two somewhat overlapping senses corresponds with the two main lines of inquiry addressed by this dissertation, those of chapter two and chapter four.

As a scientific paradigm connoting "a generally accepted system of ideas which defines the legitimate problems and methods of a research field"[2] does Lake's M-FDS pass muster? Based on the existing data, do Lake's formulations allow for the MFDS to be "generally accepted as a system of ideas?" In response to these queries and based upon the evidence presented in chapter three, five major questions seem to emerge. The first addresses the issue as to why the ideas contained in Lake's M-FDS have not in the recent past and present been "generally accepted as a system of ideas".

Secondly, how is the "evidence" that Lake based his theory upon to be evaluated? Specifically, given the problems regarding the fallibility of human memory and the potential suggestibility of clients, how can the data regarding prenatal and primal integration be evaluated with regard to it's veracity?

Thirdly, does the existing evidence reasonably allow for the affirmation of the M-FDS as a paradigm in terms of the fetal period generally, particularly the second and third trimesters. The fourth question relates to Lake's stress upon the paramount importance of the first trimester, or embryonic period, in particular. Lastly, much of Lake's "evidence" is based upon the assumption that the "memories" recalled by his subjects by means of deep-breathing or LSD abreaction are substantially accurate and represent real biographical events that transpired. This assumption is examined in light of the current evidence.

The second manner in which Lake affirmed the M-FDS to be paradigmatic was in a

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[1]Moss, "Frank Lake's Maternal-Fetal Distress Syndrome and Primal Integration Workshops." 52.

[2]Ibid., 53.

comparative sense in which the scientific paradigm was paralleled to certain theological considerations. In this sense, "paradigm" was utilized more broadly as "a pattern, something shown side by side with something else, inviting comparison of the correspondences."[3] Based upon the evidence presented in chapter four regarding Lake's utilization of the M-FDS as a paradigm of comparison with the theological realm, the major question that arises touches on the M-FDS as a theodicy and the relationship between this theodicy and the "other" great work of the cross, atonement.

Thirdly, Lake's whole project was devoted to an integration of the biblical and theological on the one hand with the psychiatric and psychological on the other. To what extent does he achieve this with the M-FDS, and achieve it legitimately? What are the implications of the convergence of these two lines of inquiry?
Lastly, to what extent does Lake's thinking and the research evidence that presently exists allow, however tentatively, for the discussion of a "prenatal psychology"?

A. Critique of the M-FDS as a Scientific Paradigm

1. The "Old" View

At its very simplest, the M-FDS can be viewed as a simple extension of commonly held and accepted developmental psychological principles[4] into the realm of the prenatal period. In a similar manner, it can be affirmed that this process of "extension" has occurred over the last several centuries into first the period of early childhood, then infancy, then the neonatal, and subsequently the perinatal periods. Each "extension" was initially resisted and only gradually accepted as the research evidence accumulated supporting the affirmations of the significance of each period for later psychological functioning.
A clear example of this can be seen regarding the changes in the perception of neonatal capabilities. Prior to the 1960's, the neonate was regarded as a purely physiological being.[5] The introduction of Brazelton's "Neonatal Behavioral Assessment Scale" in 1970 for

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[3]Lake, "Report from the Research Department #2." 2.

[4]The most basic is the observation that the environment of an organism seems to have a hand in somehow shaping and molding that organism. The developmental Interaction between nature and nurture, between the organism itself and the immediate environment produces a particular individual with particular characteristics.

[5]H Rau, "Fróhe Kindheit." in Entwicklungpsychologie eds. R. Oerter and L. Montada (Mónchen: Urban & Schwarzenberg, 1982), 131.

the purpose of "better understanding the child's 'interactive behavior"[6] had a profound effect of changing attitudes toward's the newbom. By 1973, William Jame's description of the neonatal world as "blooming, buzzing confusion"[7] were being replaced by the concept of the "competent newborn."[8] This notion is now fairly widely accepted. Rau, writing in 1983, described the change:

And so arose the picture of a baby that incorporates the essential and psychologically important characteristics-- even if they are still only rudimentary-- which also form the older child and adult, respectively. It is the picture of an active organism, one which contributes to its own development in interaction with the world around it. As a result, it can now even be described in terms of subject, not only in objective terms which are already well-known.[9]

It can be noted that the acceptance of the criticality of each developmental period is greatest for the later stages, with acceptance gradually lessening for each subsequent earlier period. Thus, hardly any resistance presently exists regarding the crucial impact of early childhood on later functioning; but resistance increases respectively for the affirmation of the impact of the infant period, the neonatal interval, the perinatal experience, and finally, intrauterine life on subsequent psychological functioning. Because of the difficulty in accumulating "evidence" for the earlier as opposed to the latter stages, more "evidence" exists regarding the critical importance of the later periods and thus, a greater acceptance of the "evidence". Because of this, the dominant prevailing view of prenatal life continues to be one of viewing the fetus as relatively passive and inert physiologically and devoid of meaning psychologically and psychodynamically.[10] As stated earlier, Freud would be typical of this

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[6]S. Schindler, "A New view of the Unborn: Toward a Developmental Psychology of the Prenatal Period," in Prenatal and Peri-natal Psychology and Medicine, eds. P.G. Fedor-Freybergh and M.LV. Vogel (Park Ridge, NJ: The Parthenon Publishing Group, 1988), 24. [7]lbid.

[8]L.J. Stone, H.T. Smith and L.B. Murphy, The Competent Infant (New York: Basic Books, 1973).

[9]H. Rau, "Fróhkindliche Entwicklung," in Entwinklungspsychologie, eds. R.K Silberseisen and L. Montada (Mónchen: Urban & Schwarzenberg, 1983), 83, quoted and translated by S. Schindler, "A New View of the Unborn: Toward a Developmental Psychology of the Prenatal Period," 24.

[10]deMause cites Peterfreund as writing "psychoanalysis does not really ask 'When did it begin?' Instead, it asks a rather different question, "When after birth did it begin?" (Emanuel Peterlreund, Information Systems and Psychoanysis [New York: International Universities Press, 1971] , 74).

view. For instance, he envisioned intrauterine life as similar to sleep, a condition of "absence of stimulation and avoidance of objects."[11] With this underlying attitude widely accepted, the physiological and psychological capabilities of the fetus have been unknown, minimized or disregarded. A similar disregard and gross underestimation for the capabilities of newboms and infants has also existed, although, as mentioned above, research has gradually illustrated the amazing capabilities of infants and neonates. Even despite the evidence, many still regard infancy as somewhat devoid of psychological significance.[12]

This faulty understanding of fetal life continues to exist, and has existed, for a variety of reasons, including the fact that interest in embryology extending as far back as the Middle Ages and before, has been primarily oriented towards anatomy and the "mechanics" of pregnancy and birth and not towards a fetal perspective. Thus, the legacy of this outlook has been to view the fetus, "apart from some aimless kicking which began in the fifth month. . . . [as] as placid, fragile vegetable who developed quietly in preparation for a life which started at birth."[13] Although interest in the intrauterine life has greatly expanded, there is still the tendency to begin with adult functioning and work backwards, eventually arriving at the prenatal period. Intentional or not, this "comparative" mentality has contributed toward the regard of the preborn and neonates as inadequately functioning adults rather than well functioning fetuses and babies.
Another reason why a false understanding of fetal life continues is suggested by deMause who has pointed out that many of those who subscribe to the "older view" of fetal

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[11]Ridgeway, The Unborn Child, 17, quoting Freud.

[12]Stone, Smith and Murphy list a series of statements from published books regarding infant capabilities. All have since been shown to be in error. A partial list follows: "Visual pursuit is absent for the first two weeks of life." (1930); "Until [cortical] development occurs [at almost a year] the motor behavior of the infant resembles that of the precordate animal." (1942); "It is even incorrect to say that the child sees, hears, feels unspecifically at birth. . . . The greatest part of everything which is going on does not reach the delicate system of the newborn. Only a few and very strong stimuli reach the infant's psyche at birth." (1948): "Behavior observable during the first two weeks of life [consists wholly of] different types of reflexes." (1952); "Newborn infants do not show sensory discrimination in any modality." (1961); "Consciousness, as we think of it, probably does not exist in the newborn. . . . The newborn child in unable to fix his eyes on objects." (1964); "The newborn has been considered largely a reflex organism, primarily controlled by his internal environment and organic processes, but responsive to a number of external impacts." (1966). (L. Joseph Stone, Henrietta T. Smith and Lois B. Murphy, "The Competence of Infants," in The Competent Infant Research and Commentary. eds. L. Joseph Stone, Henrietta T. Smith and Lois B. Murphy [New York: Basic Books, 1973], 3-4).

[13]Liley, "The Foetus as a Personality," 192.

life very often cite one study by Langeworthy in 1933 as evidence.[14] This study made the assertion that "incomplete myelinization of sensory tracts" resulted in the inability of the fetus to receive neural messages from it's specialized sense receptors. However, research subsequent to Langeworthy's study has clearly shown that full myelinization, which occurs only after birth, is not essential for sensory functioning. While full myelinization does increase the rapidity of conduction, well-organized neural activity and sense receptivity is possible long before the nerve fibers are completely myelinated.[15] DeMause writes that Langeworthy's "incomplete myelinization" misstatement "continues to be used to deny the ability of the fetus and the newborn to feel pain in many areas of medicine, from the use of aborted fetuses as subjects in painful medical experiments to the denial of anesthesia during circumcision and surgery of the newborn."[16]

Further, the modern discussion of the notion of "consciousness" as it relates to adults, and the difficulty in defining the term adequately, has lead to the view that the term itself is taboo. As Chamberlain points out:

It is unfortunate that for all concerned that these specialties [obstetrics and pediatrics] came to prominence in during as era of psychology when the subject of consciousness was taboo and neonates were considered essentially decorticate. Therefore, virtually all the routines of modem obstetrics and pediatrics presuppose an infant who is without personal thought, feeling, or memory -- a position which, I think, can no longer be reconciled with the facts.[17]

Fourthly, various ethical issues related to human embryological and fetal research have been raised which prevented certain types of investigations and thus certain data was simply unavailable. This lead to a reliance on comparative animal studies, which, although somewhat applicable, proved ultimately to be wanting due to the great variation between human and animal, and even human and mammalian, reproductive physiology, psychology and embryology. While still important, especially as it relates to research on various teratogens, animal studies obviously prove less than satisfactory when seeking data on

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[14]Langeworthy, "Development of Behavior Patterns and Myelinization of the Nervous System in the Human Fetus and Infant."

[15]Bekoft and Fox, "Postnatal Neural Ontology," 323-341.

[16]DeMause, Origins of Psychohistory, 253.

[17]Chamberlaln, Consciousness at Birth, 3.

specifically and uniquely human characteristics. The lack of technology which would have allowed better observation and monitoring of the fetus "in utero" has also contributed toward a faulty understanding of fetal functioning. As technology, including intrauterine sonography, photography, sound spectrography, electroencephalography, x-ray and other forms of fetal monitoring, have become more and more sophisticated, they have opened up a window on the embryological and fetal life of human beings heretofore unavailable. In addition, various forms of medical technology has pushed the threshold of "viability" earlier and earlier, in a sense allowing external observation of the entire "third trimester."

Commenting on the confluence of these variables, Davies has written that perhaps study of fetal life has been lacking due to the fact that the fetus itself was so "inconveniently tucked away in a most inaccessible situation. This area of medicine offered little opportunity for discovery, and did not attract much talent. why study a creature so passive, so dull, so small, and technically so difficult?"[18]

Sixthly, very often those who have made claims regarding the importance of the prenatal period have been on the fringes of scientific credibility. Many of the important early modern thinker's reliance on what many have considered suspect procedures and methodology have been generalized to their results. For instance, Francis Mott's heavy reliance on the analysis of dreams and Stanislaf Grof's utilization of LSD both introduce a certain amount of doubt into the credibility of their claims regarding intra-uterine life. Furthermore, the association of descriptions of the prenatal period and affirmations of its cruciality with extensive use of hypnosis, age-regression, birth-reenactment, and primal techniques also constitutes a perceived credibility gap.

Lake himself, while aware of the problems of perception, was not immune to such speculations. In a paper written near the end of his life, he relates that initially he did not expect any memories of the first trimester stage to extend any earlier than the blastocystic phase, around 4 to 10 days after implantation. And yet, to his astonishment, when, in the process of primal integration, people were given the opportunity to "become and ovum"[19] or

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[18]G. S. Davies, "Revolutions and Cydical Rhythms in Prenatal Life: Fetal Respiratory Movements Rediscovered," Pediatrics 51 (1973): 965, quoted in deMause, Foundations of Psychohistory, 251-252.

[19]"When offered the opportunity to 'become the ovum many do 'come upon' an astonishingly clear and -- what is more important -- to them powerfully significant and meaningful 'recall' of their existence as ovum. For some it is a life-affirming structure, eager for more life, and in that sense 'eager' for the entry of the sperm. For others. their ovum is a life-hating thing, negative to the experience' of being surrounded by eager sperms, appalled when one of them 'gets in.' There is a strong horror experienced at getting involved with cell division for this is dragging an unwilling zygote into further growth and development. They protest at times with violent movements, against each stage, The first mitosis is felt to be a disaster and each successive one is resisted. some can feel the origins of a depressive cosmos, in which a life-hating mood feels hostile especially to offers of goodness and growth promoting care from the environment." (Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 4).

"become a sperm"[20] many did express a strong identification with a memory of this time.

In light of these findings, Lake wrote:

I am painfully aware this openness to change, in the wake of the evidence derived from the same sort of 'therapeutic regression' as enabled us to discover the Maternal-Foetal distress Syndrome in the first place, comes to look more like a 'reductio ad absurdum'.[21]

Lake continues and states that to ask people to accept first the reality and importance of pre-natal events, then first trimester events is hard enough for some to countenance. He proceeds:

But to push the matter earlier is to risk being laughed out of court. The temptation to suppress the indications of 'transmissions' from pre-zygote states can also be picked up, so as to limit the required paradigm change to embryonic and foetal life, and hope to have that accepted as a first stage, has not gone beyond the temptation. Having determined to proceed in the wake of the evidence, one might as well be hung for a sheep as a lamb.[22]

What has perhaps compounded this perception has been the very broad manner in which the two major organizations[23] devoted to prenatal "psychological" research have defined the scope of their agenda. For instance, the Pre- and Pen-Natal Psychology Association of North America (PPPANA) sponsored the publication of a book of collected papers presented at the First International Conference of Pre-and Perinatal Psychology held

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[20]"Other subjects 'pick up' a strong, vigorous identification with the successful sperm. They identify with it as expressing a totally different 'spirit' from that of themselves as ovum. In the same work-room responding to the same opportunity for regressive identification, others 'pick up' quite a different "spirit or 'mood' in themselves as sperm. It is not always vigorous. At times it is slow, lazy, dilatory and unwilling to get involved in the task of penetrating, and being swallowed up by the huge ovum -- felt to be unpleasant, at times dangerous, at times 'smothering' experience." (ibid.)

[21]Ibid.

[22]Ibid., 4-5.

[23]The International Society of Prenatal and Perinatal Psychology and Medicine (ISPPM) is composed mainly of European researchers while the Pre- and Pen-Natal Psychology Association of North America (PPPANA) is obviously composed mainly of North Americans. The former organization has over 700 members while the latter is in the 400 range.

in Toronto in 1983. while most of the papers are scientifically rigorous, some with titles such as "Perinatal Imagery in UFO Abduction Reports"[24] and "The Fetal Origins of History"[25] easily lend the impression that the entire pre-natal psychology enterprise is less than scientific.[26]

Another illustration of both the widely defined subject area and the perceived credibility gap of the field of prenatal psychology is provided by Roy Ridgeway's book, The Unborn Child. He writes that his book "is about pre- and pen-natal psychology, which is a wide and fascinating area of study. It is concerned with pre-conceptual and ante-natal care, with the health and happiness of the pregnant woman as well as her unborn child. The facts and theories have been gathered from many disciplines: gynaecology, obstetrics, paediatrics, classical Freudian, behavioristic, humanistic and transpersonal psychology, mythology, anthropology, philosophy and the religions of the East and West."[27] Earlier, in his prelude to the book, Ridgeway writes that his interaction with Frank Lake "was the beginning of a fascinating journey. . . . who knows where it will lead? In recent years we have learnt a great deal about how the child develops in the womb, not only physically but psychically. Could the next step be to follow this journey back before conception? Or even to previous lives, perhaps?[28]
Given all of the above, it is not surprising that some of the claims made by Lake with regard to his M-FDS were greeted and continue to be greeted, with incredulity and skepticism. This was and continues to be the case even among some of the members of the Clinical Theology Association which Lake himself founded in 1966 and directed up to his death in 1983. Many have made criticisms as to the reliability of the "data" which Lake used to formulate the M-FDS.

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[24]Alvin H. Lawson, Perinatal Imagery in UFO Abduction Reports, in Pre- and Peri-Natal Psychology, An Introduction, ed. Thomas R. Verny (New York: Human Sciences Press, 1987), 260-291.

[25]Lloyd deMause, "The Fetal Origins of History" in Pre- and Peri-Natal Psychology, An Introduction, ed. Thomas R. Vemy (New York: Human Sciences Press, 1987), 243-259.

[26]A further example of this would be to cite a recent issue of the quarterly journal of the PPPANA Pre- and Peri-Natal Psychology Journal, which has been published since 1987. Included in the Winter 1990 issue were articles with titles such as "The Role of Sex and Pregnancy in Satanic Cults" and "Womb = Woman = World: Gender Transcendence in Tibetan Tantric Buddhism."

[27]Ridgeway, The Unborn Child, 8-9.

[28]Ibid., vii-viii.

CONCLUSIONS

A. Critique of the M-FDS as a Scientific Paradigm

1. The Old View

2. Methodology

Part of the problem with the "data" that Lake's sets forth as foundational for the entire M-FDS is that it is riddled with difficulty as to how it was obtained and how it should be interpreted. While Lake wants his theories to be accepted as "scientific" and towards that end uses the "terminology of science -- evidence, hypothesis, syndrome," he seems to gloss over the necessary distinction that the M-FDS is, at its very root. incapable of being tested experimentally in the sense of being able to relate cause and effect.[30] The M-FDS is a theory which Lake has formulated which attempts to make sense of the data[31] collected through the residential primal workshops.

When Lake writes that the hypothesis of the M-FDS "continues to resist attempts to nullify it"[32] the question inevitably arises: "How could one nullify it?" The M-FDS is a theory partially made up of impossible-to-substantiate or refute tenets. For example, Lake infers a perceptual capability to the first trimester fetus that is sophisticated enough to be able to

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[29]Campbell, "Review of Tight Corners in Pastoral Counseling" 25.

[30]Lake addresses the issue of replicability in "Mutual Caring": "The immediate "scientific" question is, "Is it replicable elsewhere?" The answer is, "Yes, so long as you don't try to cut any corners". It would be fatal to replication to omit, for instance, the deep togetherness that happens in the group, as a result of the two days of leisured introductions, in which each person has had opportunity to speak of the life-problem that brought them here, with total freedom to be emotionally honest, and then to recollect and speak of the bodily sensation patterns and specific feelings which take hold of them when the ancient affliction strikes. . . .

To say to a group of scientific workers, totally unused to having that quality of intimacy and mutual openness with the subjects of their highly "controlled" experiments, "you cannot cut this corner or you are falling to replicate the ground rules of the workshop," is to state firmly a limitation they probably would find difficult to overcome. . . . .
. . . . . .
If there are serious investigators, honestly concerned to know whether these things are as we have reported, I would advise against trying to replicate this in a "scientific establishment." It simply would not be a replication of the experiment, but something totally lacking in too many respects, But there is nothing to prevent their joining, as an unpretentious member of a workshop, open to the same constraints on loose criticism, and fully ready to share themselves and grow through the basis of this, coming to a scientifically reliable validation or refutation. To be scientific in these fields requires a stringency which the "Scientific method", as practiced in laboratories, has always strenuously evaded. I would guess that 'unconscious' roots to do with foetal experiences that have made 'knowing-by-emotional commitment' too painful and hazardous, and ~ the only tolerable stance, have a decisive part In determining that deliberate subjective impoverishment that calls itself 'scientific', but is not. [emphasis mine] (Lake, "Mutual Caring," 73-75.)

[31]David Macinnes,"Response to 'The Work of Christ in the Healing of Primal Pain','Theological Rewal 71 (Oct/Nov 1977): 12.

[32]Lake, Tight Corners in Pastoral Counselling, 38.

distinguish his mother's recognition or lack of it, regard or disregard, notice or lack of it.[33] Lake writes elsewhere: "Before she knows that she is pregnant, the foetus knows what sort of person this is."[34]

> This cannot be "proved" or ''disproved''. The fact that some persons "relive" these subtle perceptions as adults in a simulated primal experience of sorts is not "proof." Too many other variables potentially intervene, including fantasy, imagination, projection, and suggestion.

Thus, Lake states as "scientific fact" what cannot be verified as such. He writes, regarding the M-FDS, "These are not theories, they are facts."[35] Lake seems to shade the difference between an observable verifiable "fact" which can be corroborated by others with an assumption based upon such a "fact." This is the difference between a statement such as "the fetus responds with increased movement to music" and the statement "the fetus attributes a badness of the unbearable situation to some inexplicable but indelible badness in his own very being."[36] Many of Lake's "scientific facts" are in fact unsubstantiable assertions such as these.

Thus, Lake's M-FDS ends up being somewhat of a self-authenticating system[37] not unlike Freud's, whereby the theories set forth to explain behavior are buttressed with "evidence" of whatever sort available. Speaking of Freud but also applicable to Lake, F.V. Smith describes this fundamental flaw:

> **The picture is one of continued searching for an explanation of behaviour and any field of subject matter or analogical device which rendered the behaviour**

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[33]**Lake, "Studies in Constricted Confusion," C41.**

[34]**Lake, Tight Corners in Pastoral Counselling, 15.**

[35]**Lake, "The Work of Christ in the Healing of Primal Pain,"' 232.**

[36]**Peter Hutchinson, "Response to "The Work of Christ in the Healing of Primal Pain," Theological Renewal 71 (Oct/Nov 1977): 18.**

Lake writes regarding the newborn: "The newborn may be left alone long enough to be nudged to the edge of the abyss of non-being, trembling through the phase of separation anxiety, eventually to fall, in a moment of horror, over the edge into nothingness which is the abandonment of hope, love, desire for life, and expectation of access to humanity. . . .
These are not theories, they are facts." (Lake, "The Work of Christ in the Healing of Primal Pain," 232).

[37] **Hutchinson, "Response to 'The Work of Christ in the Healing of Primal Pain," 17.**

comprehensible could be used.[38]

Those who question or refuse to accept the "evidence" are categorized as deluded. Lake writes that many, "particularly among the members of the helping professions, do experience deep, emotionally charged resistances even to considering this as a possibility, for themselves or others."[39] One critic of Lake makes the point that the problem with such untestable "grand theories" is that "they can easily become a kind of religion or metaphysic which positively inhibits the practitioners openness to re-examine them."[40] Certainly this could be said of Lake.

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[38]F. V. Smith, Explanation of Human Behavior, quoted by Hutchinson, "Response to 'The Work of Christ in the Healing of Primal Pain,"' 18.

[39]Lake, "The Work of Christ in the Healing of Primal Pain," 12.

[40]David Macinnes, "Response to 'The Work of Christ in the Healing of Primal Pain,"' 12.

Conclusions

A. Critique of the M-FDS as a Scientific Paradigm

1. The Old View

2. Methodology

3. Birth and Pre-natal Memories

a. Birth and the Fetal Period

Given the concerns regarding Lake's "evidence", the question of the veracity of the "evidence" which first gave rise to the M-FDS in Lake's mind remains. As was previously stated, the originating phenomena which subsequently resulted in the M-FDS as a theoretical paradigm consisted of birth and pre-birth "memories" in many of Lake's patients as a consequence of the abreactive use of LSD. Lake writes that starting in 1954 he was given full time for two years, no other [jobs] but to pick out patients, [give them LSD,] and sit with them for four hours, six hours, as long as was necessary."[41] He seemed to discover that when used in the presence of a trustworthy therapist, LSD-25 seemed to serve effectively to de-repress the "forgotten" memories of the patient,[42] which he later noted, quite frequently

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[41]Lake, "Perinatal Events and Origins of Religious Symbols, of Symptoms and Character Problems: The Possibility of Reliving Birth and Its Effects," 2-3.

[42]Towards the end of his research with LSD in 1969, Lake did a follow-up study on 68 patients, 57 of whom responded. Half of these persons claimed to have experienced events of early childhood or birth as if they were reliving them. Of the 57,37 reported that they remembered experiencing being born and 21 that they had relived some aspect of intra-uterine life. Each patient averaged 6.2 four-hour sessions of LSDassisted abreaction. (Lake, Treating Psychosomatic Disorders Relating to Birth Trauma," 231).

included memories of birth traumas of various types.[43] Following a switch in abreactive technique from LSD to Reichian deep-breathing in 1969,[44] he continued to find similar results, particularly in the context of the small group residential seminars[45] that the Clinical Theology Association was running. During the period between 1979 and 1982, over 500 persons attended these seminars at Lingdale,[46] some lasting as long as 7 days.[47] The recorded tapes and written transcripts of these sessions provided much of the hard "evidence" for Lakes' formulations of the M-FDS. In addition, Roger Moss,[48] a co-researcher of Lake's during this period, completed a follow-up survey of those who had attended the residential workshops at Lingdale between October 1979 and April 1982. The survey, consisting of 52 main sections

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[43]Lake described his initial reaction to these birth "memories": "I was assured by neurologists that the nervous system of the baby was such that it was out of the question that any memory to do with birth could be reliably recorded as fact. I relayed my incredulity to my patients, and, as always happens in such cases, they tended thereafter to suppress what I was evidently unprepared, for so-called scientific reasons, to believe. But then a number of cases emerged in which the reliving of specific birth injuries, of forceps delivery, of the cord round the neck, of the stretched brachial plexus, and various other dramatic episodes were so vivid, so unmistakable in their origin, and afterwards confirmed by the mother or other reliable informants, that my suspicion was shaken." (Lake, Clinical Theology, xx).

[44]Lake wrote: "At the same time [ie. 1969] the value of Reichian and bio-energetic techniques broke upon us, and we discovered that deeper breathing alone was a sufficient catalyst for primal recapitulation and assimilation. Nothing more 'chemical' than that was necessary, so we stopped using LSD." (Lake, Tight Corners in Pastoral Counselling 7).

[45]It was in these seminars that most of the "evidence" for the M-FDS emerged. Later, referring to the gradual emergence of this "evidence", he wrote that an "entirely unexpected understanding of the origins of 'affliction"' came about which lead to the conclusion that the "first trimester after conception held the key to understanding psychopathology." Although still affirming the importance of perinatal and early childhood experiences, it was in the first trimester that the main roots of personality disorders and psychosomatic reactions could be found. Lake stated that "these first three months after conception hold more ups and downs, more ecstasies and devastations than we had ever imagined."

[46]This number includes only those who participated at Lingdale in Nottingham. Lake reports that during the same period, 1200 people went through the workshops (Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 8), thus indicating that approximately 700 attended these workshops elsewhere. Indeed, Lake states that during this time he lead "pre-natal integration sessions" in Brazil, Australia, India and Finland (Lake, "Research into the Pre-natal Aetiology of Mental Illness, Personality, and Psychosomatic Disorders," 11; Lake, "Reflections on the work in Australia and India").

[47]Moss, "In the Beginning," 3:1.

[48]ibid., chapter 3, 16-19 and chapter 6, 1-24; Moss, "C.T.A. Occasional Paper #1: Primal Integration, A First Report from the Workshops"; Moss, "C .T.A. Occasional Paper #2: Frank Lake's Maternal-Fetal Distress Syndrome and Primal Integration Workshops"; Moss, "Review of Research: Frank Lake '5 Primal Integration Workshops."

covering 11 sides of paper, was sent out to 500 of the total of 516. A return rate of 56.2% (N=281) was achieved and these were analyzed in light of the data and evidence already at hand, 50 which included abundant anecdotal evidence consistent with Lake's previous work[51] indicating a strong connection between the primal experience and the actual facts of the pregnancy.[52]

As far as "primal experiences" go, almost three-fourths (71.2%; N=200) were judged to have had a valid primal experience of some sort. Further, 12.8% recounted being in touch with some deep feelings which they couldn't clearly identify as definitively "primal" in nature.[53] Of the 200 who did report a "primal" experience of some sort, almost half (47%; N=94) stated that in subsequent sessions of primal work they uncovered further information regarding their early life. Some 89 (31.6%) participants discovered confirmation of components of their primal experience when checking with their parents or relatives regarding the facts of their prenatal and antenatal life. How is this "evidence" to be understood, particularly in light of the very real problems

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[49]"The respondents were almost evenly divided between males (47.3%; N=133) and females (52.7%; N=148), with the bulk between the ages of 30 and 59 (77.9%; N=219). Almost half (45.2%; N=127) could be characterized as in the "caring professions" (ie. medical personnel, clergy, social workers, counsellors), while 77.6% (N =218) reported said that they had suffered from some form of psychological illness at some time prior to the seminar. The religious commitment of the participants was generally strong with 65.8% (N=1 85) described themselves as "committed with an active Christian faith." In response to the question, "Overall, would you say that you derived benefit from participation in one or more workshops at Lyndale?" 94% (N=264) answered either "definitely" (60.9%; N=171) or "in some respects" (33.1%; N=93).

[50]Moss reports that precis of 123 selected scripts were prepared for him by Jill Holcraft (Moss, Occasional Paper #1: Primal Integration, A First Report from the Workshops," 7), another co-worker and researcher of the Research Division of the CTA. Moss wrote concerning Ms. Holcraft that "her contribution has been precise and methodical. The main aim has been to find ways of classifying and presenting the data accumulated during the Workshops, so that it can be made available to a wider audience." (ibid., 8).

[51]Moss' survey of the Lingdale Workshops certainly is consistent with Lake's formulations of the M-FDS as well as the research that Lake himself had access to, namely the written and audio records of the hundreds of "primals" during this period.

[52]Moss relates quite a number of these in "In the Beginning: A Handbook on Primal Integration," under specific topical headings such as conception (6:13-14), threatened abortion (6:14), deaths (6:14-15), good feelings (6:15), mothers's depression (6:15-16),. traumatic birth (6:16), incubator (6:16-17), removal from mother after birth (6:17), and various other details (6:17-19).

[53]Moss, "Review of Research: Frank Lake's Primal Integration Workshops," 7.

related to the fallibility of human memory[54] and the suggestibility[55] of subjects both in terms of the recall of "eyewitness" memories[56] and in hypnosis?[57] Research has shown, for instance, that the "memories" of adults for events which transpired only short periods of time previously can be altered by time, new information,[58] and leading questions,[59] so long as the "memory" remains plausible.[60] while there is not universal agreement with the specifics of these research results,[61] there is general agreement that "memory" is subject to error. Given the difficulties that exist with adult memories of events in adulthood, any conclusions regarding the M-FDS which are based on the veracity of fetal memories recalled in adulthood must be made very tentatively.

However, it is interesting to note that Lake is far from unique in the recounting and

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[54]E.R. Hilgard, "Consciousness in Contemporary Psychology," Annual Review of Psychology 31 (1980): 1-26; E.F. Loftus and G.R. Loftus, "On the Permanence of Stored Information in the Human Brain," American Psychologist 35 (1980): 409-420.

[55]"There is . . . an ever-present danger of seducing clients into making their perceptions and experience fit with the therapists predilections and then using them to prove such predilections." (Macinnes, "Response to 'The Work of Christ in the Healing of Primal Pain,"' 4).

[56]F. Brewer and J.C. Treyens, "Role of Schemata in Memory for Places." Cognitive Psychology 13 (1981): 207-230; JA. Ust. "Age and Schematic Differences in the Reliability of Eyewitness Testimony," Developmental Psychology 22 (1986): 50-57; E.F. Loftus, Eyewitness Testimony (Cambridge, Mass.: Harvard Univ. Press, 1979; E.F. Loftus, Memory (Reading, Mass.: Addison-Wesley, 1980).

[57]T.X. Barber, "Hypnotic Age Regression: A Critical Review," Psychosomatic Medicine 24(1962): 286-299; F.J. Evans and J.F. Kihlstrom, "Contextual and Temporal Disorganization During Posthypnotic Amnesia," Paper presented at the Meeting of the American Psychological Association, Chicago, September 1975; M.T. Orne, "Hypnotically Induced Hallucinations," in Hallucinations, ed. L.J. West (New York: Grune & Stratton, 1962); M.T. Orne, "The Use and Misuse of Hypnosis in Court," International Journal of clinical and Experimental Hypnosis 27 (1979): 311-341; W.H. Putnam, "Hypnosis and Distortions in Eyewitness Testimony," International Journal of Clinical and Experimental Hypnosis 27 (1979): 437-448; T.R. Sarbin, "Contributions to Role-taking Theory: Hypnotic Behavior," Psychological Review 57 (1950): 255-270.

[58]E.F. Loftus, D.G. Miller and H. Burns, "Semantic Integration of Verbal Information into a visual Memory," Journal of Experimental Psychology Human Learning and Memory 4 (1978): 19~1.

[59]E.F. Loftus, "Leading Questions and the Eyewitness Report," Cognitive Psvchology 7 (1975): 560-572; E.F. Loftus and J.C. Palmer, "Reconstruction of Automobile Destruction: An Example of the Interaction Between Language and Memory," Journal of Verbal Learning and Verbal Behavior 13 (1974): 585-589.

[60]E.F. Loftus, "Reactions to Blatantly Contradictory Information," Memory and Cognition 7(1979): 368-374; E.F. Loftus and G.R. Greene, "Warning: Even Memory for Faces may be Contagious," Law And Human Behavior (1980): 323-334.

[61]M. McClosky and M. Zaragoza, "Misleading Postevent Information and Memory for Events: Arguments and Evidence Against Memory Impairment Hypotheses," Journal of Experimental Psychology: General 114 (1985): 1-16.

reports quite reluctantly[70] and only came to accept their basic reliability after correlating many of the reports with hospital records and reports from parents and other observers. For instance, Cheek,[71] in a study using hypnosis with 10 subjects, reported that all ten were able to demonstrate the exact sequential movements of their heads and shoulders during birth.

Cheek reported that none of the individuals involved had any conscious knowledge of the mechanisms and combinations of movement during birth usually known only to those with specialized obstetrical training. Lake himself reports in several places that he only came to the conclusions he did reluctantly.[72] He wrote that the M-FDS has "so far resisted our attempts to nullify it"[73] and that after an initial biased incredulity was overcome, he was determined simply to listen to the evidence. He made several corrections as the evidence revealed that certain assumptions were flawed. He writes that his willingness to countenance changes in the theory shows that "it has been built up in a way that continually invites self-correction, because it is at every point inductive, based on actual findings, not deductions, [not] based on prior intuition, rule,

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[70]Kelsey reports that to his surprise, one client, while under a very casual hypnotic induction, assumed the fetal position and began to reenact his birth replete with gasping and smelling blood. He woke up with an excruciating headache. (Kelsey, "Phantasies of Birth and Prenatal Experience Recovered from Patients Undergoing Hypnoanalysis," 216-223).

[71]D.B. Cheek, "Sequential Head and Shoulder Movements appearing with Age Regression in Hypnosis to Birth," American Journal of ClinicaI Hypnosis 16 (1974): 261-266.

[72]Lake quotes F.N Kerlinger (Foundation of Behavioural Research [London: Holt, Reinhart & Winston, 1973]) when he relates that "the basic aim of science is theory". Lake continues: "It strives to comprehend phenomena by grouping them round an explanatory core, showing their logical links with their core. To use his technical words:

> **A theory is a set of interrelated constructs (concepts), definitions and propositions that present a systematic view of phenomena by specifying relations among the variables, with the purpose of explaining and predicting the phenomena.**

In this sense 'Scientific research is systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomena.' It is hardly possible to be all of these without some statistical method being invoked, but this is not axiomatic if demonstration is satisfactory on grounds of internal and external consistency with many collateral phenomena [emphasis Lake's.

This later virtue is what I would claim for this present theory. Once it is grasped and used, It rapidly tends to rule out alternative, post-natal, explanations of the Syndrome I have found to be associated with maternal distress invading the foetus, mainly during the first trimester. An appropriately critical faculty, necessary for the debunking of presumption, developed over 44 years of varied research, has exercised itself for four years on these data and this theory, without being able to invalidate it." (Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 6-7).

[73]Lake, Tight Corners in Pastoral Counselling, x.

authority or dogmatic assertion. Once the possibility was broached and the technique developed the evidence rolled in and the theory inevitably formed itself."[74]

In a series of studies designed to differentiate true "memory" from suggestion, Raikov[75] examined the ability of adults under hypnosis to exhibit genuine neonatal reflexes. The results proved interesting: 100% of the subjects showed the typical uncoordinated eye movements and sucking reflexes typical of neonates, 60% demonstrated the foot-bending reflex, 50% displayed the Babinski reflex and tearless crying, and 40% manifested the grasping reflex and spontaneous movements of the arms and legs. In a follow-up study,[76] using suggestion alone without hypnosis on highly hypnotizable subjects, only a small number of "neonatal" behaviors could be observed. The same was true when professional actors attempted to duplicate neonatal behaviors, being correct only 15% of the time. Raikov concluded that "neither acting, suggestion nor imagination could account for all the phenomena observed,"[77] and that the information acted out in the original subjects was being recalled from memory.

In a similar study designed to "shed light on the reliability of birth memory retrieved in hypnosis,"[78] David Chamberlain[79] studied 10 mother-child dyads. The children, who ranged in age from 9 to 23, all stated that they had no conscious memories of their births, while the mothers all claimed that they had never shared details of their children's births with them. Chamberlain reported that the "mother and child reports were remarkably detailed and reflected individual interests, experiences, and perceptions. Their two stories interlocked and formed a coherent whole rather than veering off in different directions. Stories matched or

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[74]Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 5.

[75]V.L. Raikov, "Age Regression to Infancy by Adult Subjects in Deep Hypnosis," American Journal of Clinical Hypnosis 22 (1980) 156-163.

[76]V.L. Raikov, "Hypnotic Age-Regression to the Neonatal Period: Comparisons With Role Playing," International Journal of Clinical Experimental Hypnosis 30 (1982): 108-116.

[77]Chamberlain, "The Mind of the Newborn," 61. quoting Raikov. "Hypnotic Age-Regression to the Neonatal Period: Comparisons With Role Playing," 108-116.

[78]ibid.

[79]David Chamberlain, "Reliability of Birth Memories: Evidence from Mother and Child Pairs in Hypnosis," Journal of the American Academy of Medical Hypnoanalysis 1 (1986): 89-98.

dovetailed at as many as 24 different points[80] while direct contradictions of tact in the separate narratives where quite rare.[81] Children correctly reported many details[82] such as time of day, locale, persons present, instruments used, position of delivery, behavior of nurses and doctors, first feedings of water or formula, room layouts and details of discharge and homecoming. Sequences were usually accurate: moving in and out of cars, rooms, on and off of certain beds or equipment, nursing from the bottle and/or breast in correct order, and the appearance and disappearance of doctors and fathers.[83]

Although Chamberlain did find one case of "a limited pattern of fantasy"[84] he reports that "judging strictly from my sample of ten pairs, it appears that birth memories are quite likely to be real not fantasy, true not false and within reasonable limits, a reliable guide to what actually happened."[85]
However, the fact remains that clear and certain falsehoods regarding early memories do often emerge under hypnosis, thus casting at least a hint of suspicion regarding the truth of such "data". One possible explanation for this was stumbled upon by Hilgard. He found evidence that in some cases, the "facts" about what happened can be known by one segment of "consciousness" but unknown by another, resulting in what Hilgard called "divided consciousness."[86] Thus, lack of memory about a certain event may indicate that the segment of consciousness under hypnotic consideration may be unaware of the memory, while another

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[80]The other numbers of"dovetailing" were 12,12,9,9,16, 19,8, 13, and 15 (Chamberlain, Conscious at Birth 34, Table # 1).

[81]The only exception was in Pair #8. In none of the other 9 cases was there more than 1 contradiction (5 had 1 contradiction; 4 had none). (ibid.)

[82]Two of the daughters gave correct descriptions of their mother's hair styles at the time. Chamberlain writes; "One child said her mother was in the bedroom at home; it was daytime. Contractions start at 1:10pm. she called father and the doctor and was advised to wait. The facts presented in the mother's report were that she was home in bed until 11:30 am. About 1 o'clock she knew she was in labor and called her husband to come home. She also telephoned the doctor and was told to wait." (ibid., 34-5).

[83]Ibid., 34.

[84]In Pair #8 there were 13 "dovetails" in the story and 4 "contradictions." Chamberlain describes the contradictions: "The child in this pair portrayed her mentally ill father as quite normal, and involved her favorite grandparents at several points of action in the narrative when in fact they were 3000 miles away. . . . In spite of these points of fantasy, however, the rest of her report was realistic and actually showed 13 points of correspondence with the report of her mother." (ibid., 34-35).

[85]Chamberlain, "Consciousness at Birth," 62.

[86]E.R. Hilgard, Divided Consciousness Multiple Controls in Human Thought and Action (New York: John Wiley, 1977).

segment may have total recall.

Buttressing this contention was the discovery by Cheek[87] and others[88] that many patients under general anesthesia, who were supposedly unconscious, were indeed perceiving and reacting to comments made by medical staff. Indeed, researchers discovered that patients under general anesthesia were not only sensitive to the words spoken, but also to various nuances, inflections and tones in the voices.
The connection between early birth and pre-birth traumas and adult manifestations of neuroses is one of the main assertions of Lake's M-FDS. Lake is, of course, not alone in the affirmation of this connection. Many of the above cited researchers would concur. Specifically, Leslie Lecron[89] and David Cheek,[90] using an "ideomotor" technique[91] in hypnosis, have connected early birth trauma with peptic ulcers, oesophageal spasms, spastic colon, asthma, emphysema, hyperventilation syndrome, sterility, dysmenorrhoea, failed analgesia in labor, premature labor, toxemia, frigidity and habitual abortion. Bamett,[92] using the ideomotor technique asked a series of questions of 876 different hypnotised patients and found that 28% reported negative birth experiences. He, like Lake, Cheek, and Lecron, found strong connections between these experiences and the presenting problems. Cheek, in his research has gone one step further. Like Lake, he has also discovered that clients under hypnosis.

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[87]D.B. Cheek, "Unconscious Perceptions of Meaningful Sounds During Surgical Anesthesia as Revealed under Hypnosis," American Journal of Clinical Hypnosis 1 (1959): 103-113.

[88]H.L. Bennett, J.A. Giannini, and M.D. Kline, "Consequences of Hearing During Anesthesia," Paper presented at the Annual Meeting of the American Psychological Association, September, 1979; B.W. Levinson, "States of Awareness under General Anesthesia: A Case Report," Medical Proceedings 11(1965): 243-245.

[89]L. Lecron, "A Hypnotic Technique for Uncovering Unconscious Material," International Journal of Clinical & Fxperimental Hypnosis 2 (1954): 1-3; L. Lecron, "Uncovering Early Memories by Ideomotor Responses to Questions," International Journal of Clinical & Experimental Hypnosis 11 (1963): 137-142.

[90]D.B. Cheek, "Maladjustment Patterns Apparently Related to Imprinting at Birth," American Journal of Clinical Hypnosis 18 (Oct 1975): 75-82; D.B. Cheek and L.M. Lecron, Clinical Hypnotherapy (New York: Grune & Stratton, 1968).

[91]The technique attempts to get at memories that have occurred earlier than speech, so as not to present the problem of requiring the verbal description of memories that are essentially preverbal. Chamberlain described the technique is the following way: "The technique utilized unconscious ideomotor signals with the fingers for "Yes," "No," and "I don't want to answer ... [and] proceeded as in a Game of Twenty Questions to locate relevant sequences and narrow the field to the persons and circumstances associated with the onset of symptoms." (Chamberlain, Conscousness at Birth, 30).

[92]E.A. Barnett, "The Negative Birth Experience in Analytical Hypnotherapy," Paper presented at the 22nd annual meeting of the American Society of Clinical Hypnosis, San Francisco, November 1979.

report many prenatal "memories."[93]

Other "evidence" for the credibility of birth and pre-natal memories can be found in the spontaneous memories of children when asked about the circumstances surrounding their birth and pre-birth experiences.[94] Given the limited vocabulary of younger children, many are able to point to parts of the body, act out, and give accurate motions and sounds of early experiences.[95]

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[93]D.B. Cheek, "Prenatal and Perinatal Imprints: Apparent Prenatal Consciousness as Revealed by Hypnosis," Pre and Peri-Natal Psychology Journal 1(1986): 97-110.

[94]D.B. Chamberlain, The Mind of a Newborn Baby Unexpected Thoughts and Memories at Birth (Los Angeles: J.P. Tarcher, 1988); L.A. Mathison, "Does Your Child Remember?" Mothering 21(1981): 103-107; Jeane Rhodes, "Report on Research Project: Interviews with 2 1/2 to 3 1/2 Year Old Children Regarding Their Memories of Birth and the Pre-Natal Period," Pre- and Peri-Natal Psychology Journal 6 (1991): 97-103.

[95]R.E. Laibow, "Birth Recall: A Clinical Report," Pre- and Peri-Natal Psychology Journal 1(1986): 78-81.

Conclusions

A. Critique of the M-FDS as a Scientific Paradigm

1. The Old View

2. Methodology

3. Birth and Pre-natal Memories

a. Birth and the Fetal Period

b. First Trimester

Perhaps the most criticized component of the M-FDS is Lake's contention that memories from the first trimester, indeed from the blastocystic phase and even earlier, exist at all. while Lake initially believed that the blastocystic phase was almost always experienced and remembered as positive,[96] he later came to see this stage, like the ones that followed, as potentially disastrous psychologically. Representative of Lake's descriptions of "blastocystic bliss"[97] include such characterizations as a good experience of non-attachment, even of

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[96]He notes that this conclusion was derived from "about 300 persons who had experienced in this way" (Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 3).

[97]Lake, "Studies in Constricted Confusion," C41. Perhaps the most elaborate description of the blastocystic period is included in a report titled "Reflections on Work in Australia and India": "Using the kind of breathing which tends to evoke brain waves associated with the recovery of deeply encoded remembered experiences, we 'tune in' to the 'wave-length' first of conception, then of cell division to the morula, or berry stage. It is when we come to the blastocystic stage, in the context of time between the fourth and tenth days after conception, that quite spontaneously, yet with striking and unique individual differences, about one-third of those working on their first occasion, will begin to experience a state of unitive bliss. They struggle to find words for a long-lost heightened sense of utterly glorious being, transcendental awareness and incomparable joy. . . . They may be dazzled by their own brilliant white light, or playing with a rich spectrum of rainbow colours. There is no attachment here, hence no risk of anyone's turning against you. None of the later sources of unhappy division are present here. Here is a complete androgyny, no male or female. There are no pulses to mark the separation of time. This state feels to be eternal, outside time. The division of right and left is unknown. Right and wrong are meaningless terms in this transcendent state. There is often a sense of immense God-like potency, of 'having God and the whole universe in here'[,] indeed of being one'with God. The divine impersonal. It is you, and you are It. The 'panenhenic' experience, of containing everything in this one structure, is not uncommon." (Lake, "Reflections on Work in Australia and India," 2).

unitive and quite 'transcendent bliss,"'[98] a "monistic sense of 'union with the Absolute,"'[99] a "delightful dialogue of being and awareness with joy."[100]

But near then the end of his life, Lake modified this initial understanding to include negative memories of the blastocystic period:

> **We now have a significant number of cases in which the moment of conception itself has been registered with horror and recoil, as a total disaster - the beginning and origin of a negative evaluation of the life process and self- identity that has persisted through the blastocystic stage and through it to implantation and beyond.[101]**

Lake's assertion that memories from as early as four days after conception even exist and that they are accessible to the adult provokes credulity. The process of neurulation,[102] where the neural plate begins to develop from the ectodermal cells thereby providing the primitive nerve cells for the brain and spinal cord is not complete until the 18th day. The continued development of the neurons, particularly the process of myelinization, and the synaptic junctions between neurons was thought to be necessary for any type of "memory" to remain.
Lake was quite aware of the neurology of memory. In order to address this seeming paradox, of memories seeming to exist before the morphological structures necessary for the formation and retention of those memories, Lake turned to the work of Karl Pribram. In several works,[103] but particularly in Languages of the Brain[104] Pribram has argued that long-term memory exists due to a two-process mechanism. The first is the neuron itself, while the second is the neural junction. The activity of the neural junction is part of an overall

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[98]Lake, Tight Corners in Pastoral Counselling, 15.

[99]Lake, "Studies in Constricted Confusion," C41. [100]Frank Lake to Father Sebastian Moore, Ungdale Archive #205, 1. [101]Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 2. [102]Tuchmann-Duplessis, David and Haegel, Illustrated Human Embryology Embryology, 31. [103]George A. Miller, Eugene Galanter, and Karl H. Pribram, Plans and the Structure of Behavior (New York: Holt, Rinehart & Winston, 1960); Karl H. Pribram, "The Four R's of Remembering," in On the Biology of Learning, ed. Karl H. Pribram (New York: Harcourt, Brace & World, 1969), 191-225: Karl H. Pribram and Donald E. Broadbent, eds. Biology of Memory (New York: Academic Press, 1970).

[104]Karl H. Pribram, Languages of the Brain: Experimental Paradox and Principles in Neuropsychology (Englewood Cliffs, NJ: Prentice-Hall, 1971).

organization which is not specifically dependent upon any given single neuron. Pribram called this the "slow potential microstructure."[105] This microstructure is composed of the "aggregate of slow potentials present over an extended location at any moment."[106] Thus, the neural junctions are more than just merely transmitters of neural impulses, they can also serve as functional retainers of memory traces. Pribram writes:

> **It is in the junctional mechanism that the long lasting modifications of brain tissue must take place. ... Long-term memory therefore becomes more a function of junctional structure than of strictly neural (nerve impulse generating) processes.[107]**

The reason this is true is that the neurons themselves do not replicate, rather it is the neural junctions or synapses which "not only multiply but are also replete with active chemical processes, any or many of which are candidates for the evanescent, temporary, and long term modification upon which memory must be based."[108]
What is significant to Lake is that the neural junctions or synapses can store hologram-like patterns which could provide the basis of a distributed memory system independent of particular neurons.[109] It is said to be holographic due to the way optical holograms produced by laser light work. When a camera records a visual picture of an object, each point on the film records information which arrived from the corresponding point in the visual field and thus produces an image that "looks like" the object. But when properly exposed by a coherent light source, a holographic record results when an image is taken and information from each point of the visual field is stored throughout a filter. The information stored on this filter does not resemble the visual image at all since the information does not correspond directly to the various points in the image. Rather, "the optical filter is a record of

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[105]ibid., 25. The name slow potential microstructure is in contrast to the gross potential nerve impulse. Two types of neuroelectric activity exist: nerve impulse discharges and graded slow potential charges. According to Bishop, the cerebral cortex in all likelihood operates largely by means of a continuous or steady state, rather than nerve impulse discharges of the axon. The dendrites of the neuron, rather than the axon are more effective as graded response elements. (George Bishop, "Natural History of the Nerve Impulse," Physiological Review 36 [1956]: 376-399). Thus the dendrites and/or synapses are crucial to the slow potential microstructure.

[106]Pribram, Languages of the Brain, 19.

[107]ibid., 47.

[108]Lake, Tight Corners in Pastoral Counselling, xv, quoting Pribram, The Languages of the Brain.

[109]Pribram, Languages of the Brain, 143.

the wave patterns emitted or reflected from an object". Thus, the filter serves to "freeze" the wave pattern, and it remains so "frozen" until the process is reactivated, and the waves are "read out of the recording medium."[110]

The properties of holograms make them "potentially important in understanding brain function. Pribram cites Leith and Upatnicks when he writes:

> **First . . . the information about a point in the original image is distributed throughout the hologram, making the record resistant to damage. Each small part of the hologram contains information from the entire image and therefore can reproduce it.[111]**

The same would be true for a neural holographic process. Perceptions and memories can be stored as "spatial interactions among phase relationships of neighboring junctional patterns,"[112] thus allowing for the possibility of memory traces as early as synaptic junctions exist. Thus, there could be chemical storage of memory traces within the spatial junctions.

That this hypothesis may be true, according to Lake, might account for "memories" in the first trimester. These memories, stored holographically, are said by Lake to be "unfrozen" by the process of primal integration, or earlier in his research, by LSD. But this still does not account for memories of the zygotic and blastocystic phases because synaptic junctions do not exist. Lake here takes Pribram's principles and extends them earlier in what he calls the "holographic principle". While he realizes that the synaptic junction is required for holographic memory, he states that perhaps "similar but simpler recording is feasible on the basis of properties resident in the protein molecule."[113] Regarding this, he writes:

> **The hologram principle means that the whole is somehow present in every part, that is to say, in the single cell. We are familiar enough with this in so far as the nucleus which contains the genetic recipe for each individual is repeated identically in every cell. The same seems to be true in the case of certain protein molecules in the cell, which are now regarded as the probable basis for long-term memory.[114]**

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[110]E.N. Leith and J. Upatnicks, "Photography by Laser," Scientific American 212 (1965): 24-35, cited by Pribram, Languages of the Brain, 145-146.

[111]ibid., 150.

[112]Pribram, Languages of the Brain, 166.

[113]Lake, Tight Corners in Pastoral Counselling, xv

[114]Lake, "Reflections on Work in Australia and India," 2.

The principle that Lake is referring to is "multilevel redundancy", wherein the reduplication of the genetic and chromosomal information[115] contained in the original germ-cell or zygote occurs in every single one of its descendants.[116] Lake then asks the question, "Could there be reduplication and transfer of memory in the cytoplasm?" In answer to his question he quotes Richard Dryden's Before Birth:

> **It is possible that the zygote contains information in addition to that stored in the nucleus. There is indeed evidence that the cytoplasm of the fertilized egg contains information that is essential to at least the early stages of development. . . There are several sites where cytoplasmic information may be stored. The abundant free ribosomes may carry developmental information. The mechanism of protein synthesis lends it self to analysis by information theory, with . . . the ribosomes helping to convert the coded message into a protein molecule.[117]**

Lake would see here the possibility of micro-storage of early memories. Elsewhere he describes how this memory would originate and then how it's residue might remain:

> **If, at any stage, a restricted group of cells is delightfully excited or terribly traumatized, it is the descendants of that groups of cells which will, according to the holographic principle, continue to store and resonate to similar experiences. The psychological and physiological basis of long-term memory is in the hologram which exist, at infinitesimally small potentials, in the protein molecular substance of every cell that is a descendent of the ones that were excited or distressed in the first place.[118]**

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[115]Another possibility is that memory is stored in RNA. Although there seems to be considerable evidence against it, some continue to hold this hypothesis, which was based on a series of studies with flatworms, rats, and monkeys, in which RNA was taken from animals that had "learned a task" and given to subjects which had not learned the task. Those who were injected with the "experienced" RNA sometimes learned the task faster than those who didn't. This effect, when it was found, could also be countered by destroying the RNA before it was injected into the naive subjects, who did not perform any better on the task than controls, thus leaning credence to RNA as the mechanism of storage. (Pribram, Languages of the Brain, 39-40).

[116]Lake writes: "Even if, by mitotic division, that one cell has now increased numerically to the 10^{62} cells of the adult human body, each of those cells carries a nucleus identical 'with that of the first cell." (Lake to Father Sebastian Moore, 2).

[117]Richard Dryden Before Birth (London: Heinemann, 1978) quoted by Lake, Tight Corners in Pastoral Counseling, xvi.

[118]Lake to Sebastian Moore, 2.

There is, then, according to Lake, a compulsion of sorts, to repeat the experience in adulthood "so as to be able to feel it again, enjoy it again, or ward it off again more successfully, or suffer it again in order to replenish the rationale for bitterness."[119] This is especially true if the experience was a positive one. The compulsion to regress back to an ideal state in light of the present pain is strong. Thus to recover this sense of participating again in a state of unitive bliss can be a resource in therapy, because it promotes an original sense of oneness which the person can strive for. Lake writes that "as a find on an archeological dig it is a great treasure."[120]

Thus, while there seems to be a limited amount of evidence for at least the possibility of birth and pre-birth "memories" of some sort, the questions of their veracity and indeed, their access years later is problematic. Lake is not ignorant of the problems inherent in the report of these "memories" and he attempts to control for such variables as "suggestablity" and a selective culling out of supportive evidence while ignoring opposing evidence.[121] For instance, on the topic of holographic memory storage Lake is somewhat tentative:

> **My interest in the biological existence of pre-verbal memories is not to demonstrate the legitimate existence of our findings but to indicate their biological feasibility, and to guard against dismissive criticism based on an antiquated neurology when they are reviewed.[122]**

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[119]ibid.

[120]Lake, "Reflections on Work in Australia and India," 2.

[121]Regarding the primal integration process and the evidence gathered by it, Lake answers this question: "How do I guard against selecting evidence that supports the hypothesis and 'selecting-out' what opposes it? By including in the same series, undergoing the same controlled experience of primal integration, a significant number of subjects who are free of the M-FDS together with those who manifest the syndrome. We have no control -- such as could distort the outcome in favour of the hypothesis -- over the dependent variable, that is, the effect on observable behavior and reported experiences when the subject is re-experiencing the exigencies of first-trimester existence. With quantifiable regularity, those who are free of the M-FDS in any form in adult life, are found to be free of the equivalent distress syndrome when re-living the first trimester. Whereas those who suffer from the syndrome suffer equivalent pains, distresses, sensations, movements, images and colouring and in the utterances that issue from them during the re-experiencing. 'Suggestion' or 'selectivity' are ruled out as falsifying factors.

The regular practice of conducting the integrative work with six subjects in one large room or two smaller rooms at the same time, some of whom complain of the M-FDS and others not, constitutes the most effective control we can devise. The independent variable can be judged to arise out of the different experiences of the subject, at different levels of development and under different environmental pressures, not from invalidating variable in the experimental situation itself. If, as is usual, each subject takes part in this three-hour re-integration process twice in the 6-day workshop, on the second occasion he will be one of a freshly-volunteering group of six. Yet for each person there is an internal consistency between both occasions though they are by no means identical. New 'memories' emerge. This is a further control factor." (Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 2).

[122]Lake, Tight Corners in Pastoral Counselling, xiv.

Conclusions

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c. The M-FDS as a Paradigm: The Fetal Period

The huge wealth of research regarding the importance of prenatal life on subsequent functioning has accumulated mostly in the past 20-30 years. Based upon the evidence presented in chapter three, it seems quite clear that the previously accepted conventional understanding of fetal life as inert, hypoxic, and pain-insensitive is incorrect. Far from this view, fetal life is intensely active and reactive; far from being an inert dependant passenger in pregnancy, the fetus is, to a great degree, actually in control. As Liley has clearly stated:

> **It is the foetus who guarantees the endocrine success of pregnancy and induces all manner of changes in maternal physiology to make her a suitable host. It is the foetus who, singlehandedly, solves the homograft problem -- no mean feat when we reflect that, biologically, it is quite possible for a woman to bear more than her own body weight of babies, all immunological foreigners, during her reproductive career. It is the foetus who determines the duration of the pregnancy. It is the foetus who decides which way he will lie in pregnancy and which way he will present for labour. Even in labour the foetus is not entirely passive.[123]**

Indeed, one researcher in the area has stated that "present available data would suggest that the mature human being in utero is neither in a stupor nor in an hypoxic coma[124] and that it will respond to various extra-uterine stimuli and to maternal emotions."[125]
The pivotal assertion of Lake's M-FDS was that "powerfully impressive experiences from the mother and her inner and outer world . . . reach the foetus, defining its relation to the intra-uterine reality in ways that persist into adult life."[126] Confining for the moment our discussion to the second and third trimesters, roughly corresponding to the fetal period, does the evidence allow for an affirmation of this assertion? Based upon the evidence presented in chapter three, the answer is a qualified yes.

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[123]**Liley, 'The Foetus as Personality," 192-193.**

[124]**This term is from R.W. Preyer Spezielle Physiologic des Embryo (Leipzig, 1885).**

[125]**Goodlin, Care of the Fetus, 1.**

[126]**Lake, "Research into the Pre-Natal Aetiology of Mental Illness, Personality and Psychosomatic Disorders", 5.**

The qualifications necessary for answering in the affirmative result from several important points. The first is the gradual morphological and psychological development that results over the span of the fetal period. The increasing sophistication and complexity of the central nervous system in conjunction with the specialized sense receptors is concomitant with an ever-increasing complexity in fetal behavior.[127] Thus, morphologically and psychologically speaking, what might be manifestly obvious and observable at 32 weeks after gestation is less obvious and observable early on. Thus, our conclusions regarding the viability of Lake's M-FDS as a paradigm must be more tentative for earlier dates and can be less tentative for later ones.

Nevertheless, speaking generally regarding the fetal period, one can affirm that the requisite structures and capabilities are present which allow for a profound influence upon the developing fetus by the immediate environment of the womb. That this environment, to a great degree, is dependant upon the mother and her immediate environment is the essence of what Lake was saying.

What are these requisite structures that allow for influence of this sort? Regarding the fetal period, they are the similar to the structures and capabilities necessary for environmental effects that are post-natally influential. Of primary importance are the various morphological components of the nervous system: the cerebral cortex, the spinal cord, the tactile, visual, auditory, gustatory, vestibular, and gustatory sense receptors and their corresponding areas of the brain. The capabilities stemming from these structures and often promoting their further development are also present: movement, tactile sensitivity, REM sleep, crying, vision, hearing, tasting and hearing. Further, the intermodal fluency between senses and the "higher- level" processes of learning, habituation, conditioning, imitation, memory, cognition, however rudimentary, are all indications of the ability of the fetus to apprehend "powerfully impressive experiences from the mother and her inner and outer world."[128]

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[127]Richmond and Herzog, "From Conception to Delivery," 15.

[128]Lake, "Research into the Pre-Natal Aetiology of Mental Illness, Personality and Psychosomatic Disorders", 5.

The second qualification necessary within the general framework of affirmation of the M-FDS for the fetal period relates to affect. whether fetal or even neonatal emotion exists in the same or similar manner of infants or adults is impossible to determine due to its subjectivity. Research with both preborn and newborns, however, has shown clear evidence for at least the external behavior normally associated with internal emotion. For instance, crying and smiling, of both the intra-uterine and extra-uterine varieties have been connected to the internal states of pain and satiation respectively. Research with prematurely born and neonates seems to find that certain facial expressions are indicative of affect states such as sadness, fear, disgust, happiness, surprise, anger, interest, distress, and shame. Using videotape of neonates in the first week of life, Eisenberg and Marmarou[129] revealed of full range of clear-cut expressions of emotion. Thus, the research again seems to indicate that if "powerfully impressive experiences from the mother and her inner and outer world" do "reach the foetus,"[130] that the fetus can, at least in a rudimentary manner, respond emotionally to these experiences. Absolutely key to the affirmation of Lake's M-FDS is the concept of "umbilical affect."[131] Certainly the biological morphology for this exchange is present at the very beginning of the fetal period.[132] The morphological structures which allow for "natural" exchanges to occur also allow for the passage through the placental barrier of various teratogens, including drugs, viruses, and significantly neurohormones.

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[129]Eisenberg and Marmarou, "Behavioral Reactions of newborns to Speech-like Sounds and Their Implications for Developmental Studies," 129-138.

[130]Lake, "Research into the Pre-Natal Aetiology of Mental Illness, Personality and Psychosomatic Disorders", 5.

[131] Lake's understanding is essentially that of Mott's, who conceptualized a bi-directional flow of blood from mother to fetus as mediated by the placenta through the umbilical cord, which gives rise to various physical "feelings" such as aggression, submission, emptiness, fullness, giving and taking. that are the basis for subsequent psychological "feelings". Lake picked up on Mott's term "umbilical affect" to designate this exchange, defining it as the "feeling state of the fetus as brought about by blood reaching him through the umbilical vein." (Moss, "Frank Lake's Maternal-Fetal Distress Syndrome: Clinical and Theoretical Considerations," 203). As both Lake and Mott define this exchange, the umbilical vein not only conveys nutritive resources and as such could be experienced as a "life-giving flow, bringing . . . renewal and restoration" but could also "be the bearer of an aggressive thrust of bad feelings into the foetus if the mother herself was distressed and 'feeling bad.'" If the mother felt emotionally unsupported, then "this feeling of deficiency, lack of recognition and the failure of looked-for support, would be just as specifically felt by the fetus. It became distressed by the fallure of its immediate environment to provide the expected acceptance and sustenance, not so much at the level of metabolic input . . . but to nourish the earliest beginnings of the person in relationship." (Lake, "The Significance of Birth and Prenatal Events in Individual, Family and Social Life," 51).

[132]From about the fifth week after fertilization.

As previously noted, a large body of research evidence exists which has clearly shown the impact, both positive and negative, of a mother's environment on her fetus. Numerous studies have correlated various maternal affect states such as anxiety during the fetal period with newborns who suffer from higher heart rates, lower birth weight, irritability, poor sleep patterns, gastrointestinal difficulties, hyperactivity, excessive crying, and who are perceived by their parents as having a difficult temperament, score lower on mental and motor skills tests, and have a much higher incidence of birth complications of all types. Various studies have also connected higher rates of spontaneous abortion, birth complications and preterm delivery with fear, anxiety, guilt, negative attitudes toward the pregnancy, emotional immaturity, difficulty in accepting the pregnancy, and husbands who offered little or no support. Neuroendocrinological studies done over the last decade are illustrating more and more why and how the above results occur, namely, the physiological mechanisms which allow "umbilical affect" to occur. The neuroendocrinological interactions of the mother's endocrine and nervous systems in response to the environment profoundly affect the fetus within her.[133]

But what of Lake's contention that the "umbilical affect" flow sets up reaction patterns that persist into adulthood? For instance, persons who early on reacted "hysterically" tended to react hysterically as adults. Persons who adopted the typical "depressive" defense patterns early on, tended to utilize them as adults. Is there evidence that the reaction to early emotional stress tended to set up a pattern of similar reacting that is life-long?

As previously cited, numerous correlational studies have found a strong connection between fetal "stresses" and later dysfunctional behavior. Research studies have associated maternal anxiety during pregnancy with offspring who have much higher rates of childhood autism, psychosis, schizophrenia, emotional and behavioral disorders, and psychiatric disorders in general.

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[133]For instance, when the mother is anxious or fearful, various hormones, including adrenaline, flood into the blood stream and easily cross the placental barrier, thus provoking, biochemically, the physiological reaction to anxiety and fear in the fetus. The mechanism that allows this process to work begins with the mother's brain, which is sensing and perceiving the environment. External circumstances, actions and thoughts are perceived in the cerebral cortex and subsequently affectively reacted to in the hypothalamus. The hypothalamus, in turn, directs the endocrine system and the autonomic nervous system to produce affectappropriate physiological changes. For instance, sudden fear in a pregnant women quickly results in the hypothalamus directing the sympathetic division of the autonomic nervous system to make the heart beat faster, the palms to sweat, the blood pressure to rise, the pupils to dilate and the muscles to tense. The hypothalamus also directs the endocrine system to flood the woman's body with hormones, which, of course, pass through the placenta to the fetus.

What appears to be causing these long-term dysfunctions is nothing other than "umbilical affect". While the effect of the various neurohormones released by the endocrine system seem to be reversible in infants and adults, they seem to be less reversible in the fetal period; indeed, they appear to be more-or-less irreversible at certain critical periods in development during the embryonic and fetal stages. what seems to be produced is a psychophysiological predisposition to respond that some researchers have traced into adulthood. while there is not yet a precise understanding as to how the psychological and physiological dimensions interact to cause long-term psycho-physiological behavior changes, it is clear that something is going on. Recent evidence seems to indicate that the hypothalamus, as the "emotional regulator" of the body is key in this transaction.

Lake described the fetus' response to these experiences as follows: "The tendency is to feel identified with all of these invading maternal emotions in turn and to react to each."[134] It is this response, according to Lake, that is so determinative for subsequent functioning, especially when the fetus is responding to an emotive flow of severe distress. The result, depending upon the specific intrapsychic dynamics, is an emotional "colouring of a person's life";[135] the appearance of a particular group of symptoms and signs that characterize a particular psychopathology. Thus, "this intra-uterine interaction is the source of images, perceptions, meanings, values and personality defenses to cope with them."[136]

In addition to Lake and other early researchers such as Mott and Lietaert Peerbolte,[137] others have more recently also broached the notion of predispositions to respond stemming from the fetal period, terming them engrammes,[138] imprints,[139] or patterns.[140] Ployı suggests that three categories of engrammes or imprints exist: imprints of

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[134]Lake, Tight Corners in Pastoral CounselIing, 21.

[135]Lake, "Report from the Research Department #1," 3.

[136]Lake, "Theology and Personality," 65.

[137]Lietaert Peerbolte, "Psychotherapeutic Evaluations of Birth-Trauma Analysis," Psychi~ric Ouarterly 25 (1951): 596-600.

[138]Ployı, "Existe-t-il Un Psychisme Prı-natal?" 667.

[139]Lake, Tight Corners in Pastoral Counselling, 16. He writes that "any severe maternal distress, whatever its cause, imprints itself on the foetus."

[140]J.R. Turner, "Birth, Life and More Life: Reactive Patterning Based on Prebirth Events," in Prenatal Psychology arid Medicine, ed. P. Fedor-Freybergh and M.L.V. Vogel (Park Ridge NJ: The Parthenon Publishing Group, 1988), 309-316.

early threats to the pregnancy such as attempted abortion, etc.; imprints related to toxemia or poisoning, and imprints related to later threats to the pregnancy. Interestingly, Lake's formulations and language would correspond quite exactly to Ployι's suggestions.[141] For instance, the idea of the imprinting effect of an experience akin to being poisoned can be readily found in Lake's writing. In Tight Corners in Pastoral Counselling he describes a negative experience of umbilical affect flow as an "invasion of the fetus in the form of a bitter, black flood . . . of incompatible . . . and alien emotions"[142] or as the "foetus being 'marinated' in his mother's miseries."[143]

An intriguing suggestion to explain imprints or predispositions has been proposed by Hepper as similar to "learned helplessness." According to Hepper: The foetus has little control over the stimulation it receives and it is unable to escape from it. A number of stimuli may be aversive, for example, loud noises, nicotine, or perhaps most interesting, stress. The foetus responds to maternal emotions, including stress, reactions which may be mediated by substances (e.g., hormones, catecholomines) crossing the placenta, by increased maternal arterial pressure, or by increased maternal muscle tone reducing the available space for movement in the womb . . . It may be that the fetus in highly stressed mothers experience a situation very similar to that of animals in learned helplessness experiments. Such experiences may contribute specifically to the onset of particular disorders, for example depression. or, perhaps most likely, will predispose the individual to respond in certain ways that increase the likelihood of suffering from psychiatric disorders in later life. [144]

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[141]Ployι describes how a possible "biological imprint" of the first trimester may manifest itself later as a dream: "Comme type d'engramme possible, on pourrait cite l'exemple hypothιque suivant: Un enfant rκve qu'il escalade Ia berge abrupte d'une riviιre et a trιs peur dans le reve quand il se sent en danger de Iβcher prise et de tomber ὐ l'eau. Les rκves de chute, surtout quand Ia prιsence d'eau aggrave le danger, sont souvent interprιtιs comme ιtant des rκves de naissance. Si cepedant Ia mκre de notre enfant hypothιtique prιsentait nettement une histoire de menace de fausse--couche pendent les deus premiers mois, et si par allieurs Ia naissance eIIe-mκme s'ιtait pratiquement passι sans incident, ne pourrait-on pas considιrer ce genre de rκve comme l'engramme possible de I'anxiιtι biologique ιprouvιe par l'embryon en face de cette menace ὐ son existence? Je suggθrais qu'iI pourait y avoir grand intιrκt ὐ suivre ces rκves d'enfants quand ils presentent le thθme de quelqu'un qui se cramponne des pieds et des mains ὐ une paroi verticale sans attachement ὐ aucune corde, ou qui se falt dιloger de quelque niche ou cravasse ou il avait pris refuge. On pourralt alors, s'enquθrir, par exemple, au sujet d'une menace possible de fausse-couche ou d'une tentative d'avortement pendent les premiθres semaines. pιriode ou' I'embryon est implantι dans Ia muqueuse utenne et s'accroche ensuite ὐ Ia paroi utιrine, sans I'intermιdiaire d'un cordon ombilical non encore dιveIopι." Ployι. "Existe-t-iI un Psychisme Prι-natal?"668.

[142]Lake, Tight Corners in Pastoral Counselling, x.

[143]Ibid., 141.

[144]Hepper, "Foetal Learning: Implications for Psychiatry?" 292.

Based upon the broad evidence presented regarding the physiological and psychological capabilities of the second and third trimester fetus, Lake's M-FDS could be commended as a paradigm, a "generally accepted system of ideas which defines the legitimate problems and methods of a research field." The one important qualification would relate to memory. If "umbilical affect" causes some type of "proto-memory" or physiological alteration in the nervous system, which sets up later predispositions to respond to stress, the M-FDS can be legitimately utilized as a conceptual scheme, "a set of concepts (abstracted by generalization from particular clinical experiences) which is inter-related by hypothetical and theoretical propositions."[145] Thus stated, the M-FDS does not depend upon the veracity or even the accessibility of early fetal "memories", but rather on the negative effects of maternal stress on the fetus within her and the correlation of that experience with later psychopathology.

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[145]Lake, "The Internal Consistency of a Theory of a Maternal-Foetal Distress Syndrome," 1.

Conclusions

A. Critique of the M-FDS as a Scientific Paradigm
1. The Old View
2. Methodology
3. Birth and Pre-natal Memories
a. Birth and the Fetal Period
b. First Trimester
d. The M-FDS as a Paradigm: The Fetal Period
e. The M-FDS as a Paradigm: The First Trimester

Perhaps the single most controversial aspect of Lake's M-FDS is his strong emphasis upon the first trimester of intrauterine life. He affirmed that the developmental process, not only in the physiological dimension, but also psychological, emotional, cognitive, and spiritual dimensions, begins not in early infancy or at birth or even in the second or third trimesters of fetal life. Rather, Lake asserted that "we must begin at conception, through the blastocystic stage, to implantation and the events of the first trimester. It is here, in the first three months or so in the womb, that we have encountered the origins of the main personality disorders and the psychosomatic stress conditions."[146] In the introduction of Tight Corners in Pastoral Counselling, Lake wrote the following:

> **We have always known, whether taught by St. Augustine, Soren Kierkegaard or Sigmund Freud, that infants suffered abysmally, and that human beings crawling out of their abysses into life have damaged perceptions, distorted goals and a lifetime bondage of primal fears. What we had not known, and even now are somewhat terrified to know as clearly and rigorously as we in fact do, is the contribution to this soul-destroying pain and heart-breaking suffering that comes from the distress in the womb when the mother herself is distressed. The focus for psychopathology is now, for us, the first trimester of intra-uterine life (emphasis Lake'sI. These first three months after conception hold more ups and downs, more ecstasies and devastations than we had ever imagined.[147]**

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[145]Lake, "The Internal Consistency of a Theory of a Maternal-Foetal Distress Syndrome," 1.

[146]Lake, Tight Corners in Pastoral Counselling, ix.

[147]ibid., vii-viii

Lake was certainly aware of the various problems associated with this claim. In a paper addressed to medical colleagues and researchers titled "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome." He sought to address some of the issues inevitably raised by his propositions. The first issue, and the one for which the paper was named, was to address testability of the central hypothesis of the M-FDS, which he defined as "the derepression of aspects of fixated foetal experience, i.e. to foetal distress of various kinds, incurred as a result of the passage to the foetus of maternal distress-- of the same kinds.[148] The placental-foetal or umbilical circulation is involved in this, though 'telepathic' communication between mother and foetus is not ruled out."[149]

Lake saw the M-FDS as empirically testable by defining two independent variables and one dependent variable.[150] The first independent variable is the "actual nature of

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[148]Perhaps an example of this is Lester Sontag's early study titled "War and the Maternal-Fetal Relationship." (Marriage and Family Living, 1944, 6, 1-5). He observed that the babies of women whose husbands were serving in the armed services and thus daily threatened with death tended to be crankier and have an array of physical problems. He theorized that the intra-uterine environment of constantly worrying mothers would have a deleterious effect on a whole generation of infants. Sontag coined the term "somatopsychics" (inferring the mirror process of "psychosomatics", which refers to the way in which psychological processes effect physiological ones) to describe the way "basic physiological processes affect the personality structure, perception, and performance of an individual." Thus, the developing fetal morphological apparatus is influenced by the intra-uterine environment in such a way as to predispose certain psychological processes following birth.

[149]Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 1.

[150]In this same paper Lake also proposes a factorial analysis of variance to attempt to determine the extent to which six additional independent variables correlate with each other and the two original independent variables and the extent to which they produce variation in the dependent variable, again defined as the presenting complaints and effects. Lake makes the following predictions regarding the these eight variables and the their relationship with the dependent variable:

> **1. first trimester distress (high correlation)**
> **2. second or third trimester distress (positive or negative correlation) for (1) and a positive or negative correlation for (2).**
> **3. difficulty of birth (not of itself negative, but only as following a high correlation for (1) and a positive or negative correlation for (2)**
> **4. post-natal conditions (positive or negative correlation, but low.) 5. pubertal conditions (low correlation)**
> **6. mother's distress level in 1st trimester (very high correlation)**
> **7. mother's distress level after birth (no correlation if distress begins after birth)**
> **8. mother's character now (positive correlation if continuous with (6).**
> **(Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 8).**

content of the mother's distress,"[151] namely, what is transfused into the fetus, and the second is the "nature and content of the foetal response to the distress, as it is being re-lived in deliberate 'therapeutic regression"[152] The dependent variable is the actual symptomolgy which the subject is 'complaining of, or 'reporting' together with those 'signs which can be elicited on questioning.'"[153]

Lake was confident that the data for the two independent variables could be gathered relatively objectively. The data for the first could be gathered by a combination of precise history taking, along with reliable inferential data regarding the mother's personality and stress reactions at the time of the first trimester. The data for the second, Lake believed, was accessible through "pre-natal or primal integration work" of the sort described earlier. These two variables are not independent of each other, since the second, to a great degree, is based on the first.[154]
Lake's prediction that the dependent variable of present functioning is highly correlated with the independent variable of maternal stress is due to his conceptualization of "patterning"[155] or imprints". This notion is central to the M-FDS as a predictive tool relating to aetiology and as a beginning for the therapeutic process. Lake writes:

> **We have consciously and systematically pursued the relations between isomorphic (similar-patterned or same-shaped) elements (1) in the present history of signs and symptoms, (2) the mother's environmental pressures and her reactions, signs and symptoms, during the first trimester when she was carrying this individual, and the signs and symptoms manifested by the subject during the re-experiencing of the events of the first three months in the womb.[156]**

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[151] **Ibid.**

[152] **Ibid.**

[153] **Ibid.**

[154] **This is so because: "what the subject re-experiences from the first trimester is understood to be, in part, due to the direct imprint of the mother's feelings on the feelings of the foetus (as, for instance, the mother's deep sorrow at the recent or still unresolved and unaccepted death of a parent persistently fed into the foetus throughout the first trimester)." (ibid., 1).**

[155] **Lake, "Supplement to Newsletter No.39" 4.**

[156] **Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 2.**

One example of "patterning" that Lake clearly delineated as originating in the first trimester of intra-uterine life was homosexuality. In Tight Corners in Pastoral Counselling, Lake related his views on the psychogenesis of homosexuality:

> **Insofar as we are now looking confidently at the first trimester for the origins of schizoid affliction, it is the same first trimester that we will look to discover the origins of homosexuality in men and possibly also in women The question arises, why, in association with feelings of intense distress and revulsion at being invaded and surrounded by so much female misery, there should also be this heartache for the intimate love of a man. The answer, given at this moment of the reliving of experience early in the womb, by a sufficient number of homosexual men . . . is that this yearning is a result of the transfusion of exactly that sate of mind and emotional longing in the mother, from her to the foetus, through the leto-placental circulation. . . . It is this combination of the mother's emotional distress at their life situation plus her yearning for the intimate love of her man that are transferred into and impressed upon the foetus, early in intra-uterine life.[157]**

Lake continues his discussion by relating his theories regarding the etiological dynamics of lesbianism[158] and then follows with an affirmation, that although he views the origins of homosexuality to be in the first trimester, later environmental determinants also play a part.[159]

> **I conclude that though the psychogenic roots of homosexuality in men and women in the first trimester can now be taken as a workable hypothesis, rooted in and related to the maternal-foetal distress syndrome, the dynamics of each person are quite individual and specific. They will certainly have gathered later determinants in subsequent trimesters, in difficult births and in all the successive stages of psycho-sexual development.[160]**

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[157]Lake, Tight Corners in Pastoral Counselling, 149-150.

[158]Lake begins this section by asking the question "Is it not absurd to posit, in a woman who has just discovered (or not yet discovered) that she is pregnant, a fierce desire to be close, not to her husband, but to some woman or other?" He then answers by stating "It is by no means absurd." He explains this possible reaction as an emotional regression of sorts to her own dependency upon her mother. Thus, the longing for closeness that is absent and pined for is that of a women, and it is this that is transfused to the developing female fetus within her." (ibid., 150-151).

[159]Lake writes that the classic Freudian/Fenichel interpretation of male homosexuality as associated with weak or absent fathers an/or mothers is still germane: "Without denying that childhood conditioning has reinforcing or inhibiting effects, our evidence points to the relevance of the Freud-Fenichel observations about weak and emotionally or actually absent fathers, and mothers also, not in its post-natal but in its pre-natal causality, in fact, as part of the maternal-foetal distress syndrome." (ibid., 149). [160]Ibid. 152. Lake reaffirmed this thinking elsewhere: "We thought initially that the pervasive traumatic influence of maternal distress on the foetus would be spread (if it occurred at all) throughout the nine months of pregnancy. We have now modified our thinking in the wake of the evidence that the first trimester is the locus for most of the catastrophes, for most of the sufferers from the M-FDS. The near approach of the birth and the birth process itself brings with it a new series of distresses, but these produce a different syndrome if there has been no initiating and patterning distress in the first trimester." (Lake, "The Internal Consistency of the Theory of a Maternal-Foetal Distress Syndrome," 3).

Lake was certainly willing to subject this conceptual scheme to investigation. He wrote regarding the two independent variable cited above:

> **The hypothesis is nullified if there should be, over a series of well-investigated cases with reasonably informative parents, no significant correlation between the feelings and background emotional colouring and the sex drive of the subject with that of his mother, overt or suppressed, in the early months of pregnancy.**
>
> **It would also be nullified if pre-natal integration work did not lead to a reliving of the complained-of symptoms . . . when focusing on the first trimester. So far, the hypothesis has not been nullified on either count.**[161]

Some recent research finding have lent support to some of Lake's hypotheses regarding the psychogenesis of homosexuality. Several retrospective studies[162] have found correlations between stressful maternal life events which occurred during pregnancy and the incidence of adult male homosexuality. Dorner and his colleagues found that out of 800 homosexual males, "highly significantly more homosexuals were born during the stressful war (World War II) and early post-war period than in the years before or after this stressful period. This finding suggested that stressful maternal life events, if occurring during pregnancy may represent in fact, an etiogenetic risk factor for the development of sexual variations in the male offspring."[163]
Another study[164] compared the answers of 100 heterosexual men with 100 bi- and homosexual men of the same age to questions relating to maternal stress during their prenatal life. The highest significant correlation was found in homosexual men, followed by bi-sexual men and maternal stress. One-third of the homosexual men reported severe maternal distress while they were in utero (ie. death of someone close, rape, severe anxiety, abandonment by partner), and one-third reported moderate maternal stress. Compared with this data, none of the heterosexual men reported severe stress and only 10% reported moderate stress.

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[161]**ibid.**

[162]**G. Domer, I. Geier, L Ahrens, L. Krell, G. Mónx, H. Sieler, E. Kittner, and H. Móller, "Prenatal Stress as Possible Aetiogenetic Factor of Homosexuality in Human Males," Endokrinologie 75 (1980): 365-368; G. Dorner, W. Rohde, F. Stahl, L Krell and W.G. Masius, "A Neuroendocrine Predisposition for Homosexuality in Men." Archives of Sexual Behavior 4 (1975): 1-8.**

[163]**Dorner, "Significance of Hormone-dependent Brain Development and Pre-and Early Postnatal Psychophysiology for Preventative Medicine." 426.**

[164]**G. Dorner, B. Schenk, B. Schmiedel and L Ahrens, "Stressful Events in Prenatal Ufe of Bi- and Homosexual Men," Experimental Clinical Endocrinology 81 (1983): 83-87.**

What might explain such results is the effect of neurohormones released under the aegis of the hypothalamus on the developing fetus during the first trimester in response to the environmental stresses that the mother experiences. Lake seemed to anticipate that corroboration of his theory of "umbilical affect" and "patterning" might best be done through animal studies. Regarding homosexuality he wrote:

> **I am not well informed as to research in animals. It would be surprising if no studies had been done on the effect of stress applied to pregnant mammals on the behavior and psychological reactions of their offspring. I am open to information on this point.**[165]

Indeed, the emerging field of psychoneuroendocrinology has corroborated some of Lake's ideas regarding the etiology of homosexuality. In a series of studies by Dorner[166] and his colleagues [167] on various animals, permanent alterations in adult sexual behavior were produced by neuroendocrine changes during critical brain organization stages during the embryonic period. Since the same basic neuroendocrinological systems are functional in human beings as in the experimental animals, Dorner made the following hypothesis:

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[165]**Lake, Tight Corners in Pastoral Counselling, 153.**

[166]**G. Dorner, "Tierexperimentelle Untersuchungen zur Frage emer hormonellen Pathogenese der Homosexualitat," Acta Biologicus Medicus Germanica 19(1967): 569-584; G. Dorner, "Hormone Induction and Prevention of Female Homosexuality," Journal of Endocrinology 42 (1968): 163-164; G. Dorner, "Die Bedeutung der sexualhormonabhangigen Hypothalamusdifferenzierung fur die Gonadenfunktion und das Sexualverhalten," Acta Biologicus Medicus Germanica 23 (1989): 709-712; G. Dorner, "The Influence of Sex Hormones during the Hypothalamic Differentiation and Maturation Phases on Gonadal Function and Sexual Behavior during the Hypothalamic Functional Phase," Endokrinologie 56 (1970): 280-291.**

[167]**G. Dorner, F. Docke and G. Hinz, "Entwicklung und Ruckbildung neuroendokrin bedingter mannucher Homosexualitat. Acta Biologicus Medicus Germanica 21 (1968): 577-580; G. Dorner, F. Docke and G. Hinz, "Homo- and Hypersexuality in Rats with Hypothalamic Lesions," Neuroendocrinology 4 (1969): 20-24; G. Dorner, F. Docke and G. Hinz, "Paradoxical Effects of Estrogen on Brain Differentiation," Neuroendocrinology 7 (1971): 146-155; G. Domer, F. Docke and S. Moustafa, "Homosexuality in Female Rats Following Testosterone Implantation in the Anterior Hypothalamus," Journal of Reproductive Fertility 17 (1968): 173-175; G. Domer, F. Docke and S. Moustafa, "Differential Localization of a Male and a Female Hypothalamic Mating Center," Journal of Reproductive Fertility 17(1968): 583-586; G. Dorner and J. Fatschel, "Wirkungen neonatal verabreichter Androgene und Antiandrogene auf Sexualverhalten und Fertilitat von Rattenweibchen," Endokrinologie 56 (1970): 29-48; G. Dorner and G. Hinz, "Induction and Prevention of Male Homosexuality by Androgen," Journal of Endocrinology 40 (1968): 387-8; G. Dorner and G. Hinz, "Mannlicher Hypogonadismus mit sekundarer Hyposexualitat nach hochdosierten Gaben von Ostrogenen wahrend der hypothalamischen Differenzierungsphase, Endokrinologie 58 (1971): 227-33; G. Dorner and G. Hinz, "Apparent Effects of Neurotransmitters on Sexual Differentiation of the Brain without Mediation of Sex Hormones," Endokrinologie 71 (1978): 104-108; G. Dorner and J. Staudt, "Structural Changes in the Preoptic Anterior Hypothalamic Area of the Male Rat, Following Neonatal Castration and Androgen Treatment," Neuroendocrinology 3 (1968): 136-140; G. Dorner and J. Staudt, "Structural Changes in the Hypothalamic Ventromedial Nucleus of the Male Rat, Following Neonatal Castration and Androgen Treatment." Neuroendocrinology 4 (1969): 278-281.**

> **Primary hypo-, bi- or homosexuality produced by androgen deficiency in males and androgen excess in females during sex-specific brain differentiation might correspond etiologically to primary hypo-, bi- or homosexuality in human beings.[168]**

Thus, a neuropsychoendocrinological process occurs, whereby certain psychosocial influences in the mother's environment cause an intra-uterine environment that in turn causes hypothalamic predispositions in the fetal morphology to respond psychologically in particular ways. As this relates to sexuality, Dorner writes that "prenatal psychosocial influences, which are able to affect the levels of systemic hormones and/or neurotransmitters, should . . . be regarded as possible etiologic factors in the development of sexual deviations."[169] Several studies[170] have clearly demonstrated this in rats, finding that prenatal stress tended to demasculinize males rats in terms of testosterone levels and observed behavior. Dorner cites another study that distinguishes the pre-natal stress as crucial:

> **We have observed bi- or even homosexual behavior in prenatally stressed male rats after castration plus estrogen treatment in adulthood, whereas prenatally non-stressed but later equally treated males displayed heterosexual behavior.[171] Hence, prenatal stress can predispose to the development of bior even homosexual behavior in males.[172]**

Research into other environmentally caused hormonal fluctuations in the prenatal period have also shown the deleterious effect of the post-natal predisposition. For instance, research on overnutrition[173] and undernutrition[174] resulting in changes in the insulin and/or

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[168]Dorner, "Significance of Hormone-dependent Brain Development and Pre-and Early Postnatal Psychophysiology for Preventative Medicine," 423.

[169]ibid., 425.

[170]F. Stahl, F. Gotz, I. Poppe, P. Amendt, and G. Dorner, "Pre- and Early Postnatal Testosterone Levels in Rat and Human," in Hormones and Braln Development , Developments in Endocrinology, Vol.3, eds. G. Dorner and M. Kawakami (Amsterdam: Elsevier/North-Holland Biomedial Press, 1978), 99-109.

[171]F. Gotz and G. Dorner, "Homosexual Behavior in Prenatally Stressed Male Rats after Castration and Estrogen Treatment in Adulthood," Endocrinologie 76 (1980): 115-117.

[172]Dorner, "Significance of Hormone-dependent Brain Development and Pre-and Early Postnatal Psychophysiology for Preventative Medicine," 425. [173]S. Frankovα, "Behavioral Responses of Rats to Early Overnutrition," Nutritional Metabolism 12 (1970): 228-239; G. Dorner, H. Grychtolik, and M. JuIit:z, "άberernahrung in den ersten drei Lebensmonaten als entscheidender Riskofaktor fór die Entwicklung von ettsucht und ihrer Folgeerkrankungen," Deutsch Gesundheit Wesen 32 (1977): 6-9; G. Dorner, N. Hagen and W. Witthuhn, "Die fróhpostnatale άberernahrung als atiopathogenetischer Faktor der Erwachsenenfettsucht," Acta Biologica Medicus Germanica 35 (1976): 799-803.

[174]G. P. Ravelli, "Obseity in Young Men after Famine Exposure in utero and Early Infancy," The New England Journal of Medicine, (1976):349-353.

glucose levels during critical periods of fetal brain development have been found to alter irreversibly "the function and tolerance ranges of hypothalamic control centers for glucose metabolism."[175] This has been

cited as a predisposing risk factor in obesity,[176] diabetes mellitus,[177] and atherosclerosis.[178]

Interestingly, the predisposing effects of neurohormones and other endocrinal effects does not end at birth. Rather, the source of the hormones changes from mother to child himself, but the effect can be just as profound. For instance, the postnatal psychosocial effects of extended handling, electric shocks,[179] maternal deprivation[180] overnutrition[181].

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[175]Dorner, "Significance of Hormone-dependent Brain Development and Pre-and Early Postnatal Psychophysiology for Preventative Medicine," 426.

[176]G. Dorner, "Die mogliche Bedeutung der pra und/oder perinatalen Ernahrung fór die Pathogenese der Obesitas," Acta Biologica Medicus Germanica 30 (1973): K19-K22; G. Dorner, "ά́ber den Einfluss der fŕópostnatalen Ernahrung auf die Korpergrosse im Adoleezentenalter," Acta Biologica Medicus Germanica 37 (1978): 1149-1151.

[177]G. Domer and A. Mohnike, "Zur moglichen Bedeutung der pra und/oder fróhposnatalen Ernahrung fur die Pathogenese des Diabetes mellitus," Acta Biologica Medicus Germanica 31 (1973): K7-K10; G. Dorner and A. Mohnike, "Further Evidence for a Predominantly Maternal Transmission of Maturity-onset Diabetes," Endokrinologie 68 (1976): 121-124; G. Dorner and A. Mohnike, "Zur Bedeutung der perinatalen ά́berernahrung fór die Pathogenese der Fettsucht under des Diabetes mellitus," Deutsch Gesundheit Wesen 32 (1977): 2325-2328; G. Dorner, A. Mohnike, D. Honigmann, P. Singer, and H. Padelt, "Zur moglichen Bedeutung eines pranatalen Hyperinsulinismus fór die postnatale Entwicklung Diabetes mellitus," Endokrinologie 61 (1973): 430-432; G. Dorner, A. Mohnike, and E. Steindel, "On Possible Genetic and Epigenetic Modes of Diabetes Transmission," Endokrinologie 66 (1975): 225-227; G. Dorner, A. Mohnike, and H. Thoslke, "Further Evidence for the Dependence of Diabetes Prevalence on Nutrition during Perinatal Life," Experimental Clinical Endocrinology 84 (1984): 129-133.

[178]G. Dorner, H. Hailer and W. Leonhard, "Zur moglichen Bedeutung der pra- un oder fróhpostnatalen Ernahrung fór die Pathogenese der Arteriosklerose," Acta Biologica Medicus Germanica 31 (1973): 1(31-1(35.

[179]H. Denenberg, "Critical Periods, Stimulus Input and Emotional Reactivity: A Theory of Infantile Stimulation," Psychological Review 71 (1964): 335-351.

[180]G. Dorner, R. Bluth and R. Tonjes, "Acetylcholine Concentrations in the Developing Brain Appear to Aflect Emotionality and Mental Capacity in Later Life," Acta Biologica Medicus Germanica 41(1982): 721-723.

[181]G. Dorner and H. Grychtolik, "Long-Lasting Ill-eflects of Neonatal Qualitative and/or Quantitative Dysnutrition in the Human," Endokrinologie 71 (1978): 81-88.

and malnutrition,[182]and the administration of various neurodrugs[183] all resulted in permanent neurochemical changes in the brain and/or permanent alterations of emotionality, exploratory behavior, learning capability and memory capacity. This certainly would correspond to Lake's statements regarding the ongoing pre-natal and post-natal determinants to various behavior states.

Dorner has proposed[184] two ontogenetic organization rules for the neuroendocrine system, the second[185] of which clearly has application to Lake's notions of "patterning":

> **During the pre- and/or early post-natal life, systemic hormones and neurotransmitters are capable of acting as organizers of the brain, which is the controller of the neuro-endocrine-immune system. Thus, the quantity of the systemic hormones and neurotransmitters co-determines during a critical period of brain development, the quality, ie. the responsiveness, of their own central nervous system controllers and hence the functional and tolerance ranges of their own feedback systems throughout life. . . . Abnormal levels of systemic hormones and neurotransmitters, which can be induced by abnormal conditions in the psychosocial and/or natural environment, can act as teratogens and lead to permanent physiological and/or psychological dysfunctions in later life. Thus many malfunctions of reproduction, metabolism, information processing, and immunity called up to now idiopathic, essential, cryptogenic, primary or genuine can be explained by pre- and/or early postnatal psycho- and /or physiological processes. Therefore, 'structural teratology' (teratomorphology) . . . [must be] supplemented by [a] 'functional teratology' teratopsychophysiology).[186]**

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[152]G. Hinz, K. Hecht, W. Rhode, and G. Domer, "Long-term Effects of Early Postnatal Nutrition on Subsequent Body Weight Galn, Emotionality and Learning Behavior in Male Rats," Experimental Clinical Endocrinology 82 (1983): 73-77; B. Rodgers, "Feeding in Infancy and Later Ability and Attainment: A Longitudinal Study," Developmental Medical Child Neurology 20 (1978): 421-426; V.S. Ryan, "Effect of Prenatal and Postnatal Nutrition on Development, Behavior, and Physiology of the Rat" (Ph.D. diss., Wayne State Univ, 1977).

[153]G. Dorner, "Further Evidence of Permanent Behavioral Changes in Rats Treated Neonatally with Neurodrugs," Endokrinologie 68 (1976): 345-348; G. Dorner, K. Hecht, and G. Hinz, "Teratopsychogenetic Effects Apparently Produced by Nonphysiological Neurotransmitter Concentrations during Brain Differentiation," Endokrinologie 68 (1976)1-5; K. Hecht, M. Poppei, T. Schlegel, G. Hinz, R. Tonjes, R. Gotz and G. Dorner, "Long-term Behavioral Effects of Psychotropic Drugs Administered during Brain Development in Rats," in Hormones and Brain Development, vol.3, eds. G. Dorner and M. Kawakami (Amsterdam: Elsevier/North Holland Biomedical Press, 1978), 277-283; G. Hinz, F. Docke and G. Dorner, "Long-term Changes of Sexual Functions in Rats Treated Neonatally with Psychotropic Drugs," Hormones and Brain Development, vol.3, eds. G. Dorner and M. Kawakami (Amsterdam: Elsevier(North Holland Biomedical Press, 1978), 121-127.

[184]Dorner, "Die mogliche Bedeutung der pra- undloder perinatalen Ernahrung fór die Pathogenese der Obesitas," 107-123.

[185]The first is defined as follows: "During a critical period of brain differentiation. an open-loop regulatory system is converted into a feed-back control system." (Dorner, "Significance of Hormone-dependent Brain Development and Pre-and Early Postnatal Psychophysiology for Preventative Medicine," 425)

[186]ibid., 429.

That Lake affirmed this "functional teratology" is obvious. The source of the "abnormal conditions in the psychosocial environment" were, for Lake, variable. He writes that the "influx of maternal distress,"[187] which Dorner refers to as "abnormal levels of systemic hormones and neurotransmitters", may result from her "distress in relation to the world. It may be due to her marriage, to her husband's withdrawal rather than more intimate supporting when he is asked urgently for more than his personality can easily give. It may be due to the family's economic or social distress in a distressed neighborhood. . . . If she is grieving the loss of, or nursing a still dying parent, the sorrow overwhelms her and overwhelms her fetus."[188] Whatever the cause, "the pain of the world, picked up by the family, is funnelled by the mother into the fetus."[189] Included in this dynamic then, is "both the registering of the intrusion of the mother's condition, of yearning, anxiety, fear, anger, disgust, bitterness, jealousy, etc. into the fetus, and its own emotional response to this distressed and distressing invasion."[190] This is exactly what a teratopsychophysiology describes.

The fifth and final question regarding the M-FDS as a scientific paradigm relates to the question of memory. While this issue has already been touched upon briefly, it is important to note that Lake's assumption of the authenticity and verity of fetal memories as they present themselves in recall of whatever type is. certainly open to question.
The term "childhood amnesia" was coined by Freud[191] to account for the paucity of conscious memories of early childhood. Indeed, several researchers have found that the mean age of their earliest memory is between 39[192] and 42 months.[193] This would not present a

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[187]Lake, "Studies in Constricted Confusion" C41

[188]Lake, "Theology and Personality," 66.

[189]Ibid.

[190]Lake, "Studies in Constricted Confusion," C41.

[191]Sigmund Freud. Psychopathology of Everyday Life (New York: Mentor Books, 1951).

[192]Gilliam Cohen, Memory in the Real World (London: Lawrence Erlbaum Associates, 1989)131.

[193]G.J. Dudycha and M.M. Dudycha, "Childhood Memories: A Review of the Literature," Psychological Bulletin 4 (1941): 688-682.

problem for Lake, due to his belief that most of the "memories" of the fetal period, and indeed, birth, are unconscious, and thus need to be elicited by means of hypnosis, LSD, or deep- breathing.

Since much of the "evidence" that Lake uses to buttress the M-FDS consists of reported "memories", the question of the content of these memories remains. Unfortunately, Lake makes no distinctions between the various dimensions of memory, thus confusing the issue. Researchers have suggested that "memory" is divided up into multiple systems, each operating according to separate principles. One early distinction between two types of memory was made by Tulving,[194] who distinguished episodic memory of an experiential nature from semantic memory involving language and information. Memory of a semantic type is dependant upon language and is described by Tulving as follows:

> **It is a mental thesaurus, organized knowledge a person possesses about words and other verbal symbols, their meaning and referents, about relations among them and about rules, formulas, and algorithms for the manipulation of these symbols, concepts and relations.[195]**

Episodic memory, according to Tulving, is autobiographical and involves the particular combinations of sensations, feelings, thoughts and behavior unique to the individual. Included in this memory sub-system would be the further sub-systems of memory related to sensation, perception and affect. Episodic memory thus contains representations of an individual's experiences "according to their temporal and contextual relations to those of other events."[196]
Tulving, following up on Winograd, later added a third memory system, called procedural memory,[191] which consists of connections between stimuli and responses. Also included are various motor memory skills such as turning over, sitting up, and operating equipment.

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[194]E. Tulving, "Episodic and Semantic Memory," in Organization of Memory eds. E. Tulving and W. Donaldson (London: Wiley, 1972).

[195]ibid, 380.

[196]Vernon H. Gregg, Introduction to Human Memory (London: Routledge & Kegan Paul, 1986) 24.

[197]E. Tulving, Elements of Episodic Memory (Oxford: Oxford Univ. Press, 1983); Tulving, "How Many Memory Systems are There?", 385-398.

When we examine the "memories" that Lake reports as evidence, they mostly consist of the episodic type, although procedural memory is also present. For instance, Lake reports that many persons "reliving" their prenatal and perinatal experiences, make various motor movements quite representative of those developmental periods. Very few memories of the semantic type are reported; this being consistent with the fact that the language skills necessary for encoding such memories are not yet present.
The evidence regarding the reliability and verity of autobiographical and episodic memories is mixed. In one study, Field[198] analyzed interviews of individuals carried out on people at age 30, and again at age 47, and lastly, at age 70. Regarding questions about education, family, occupation and relationships, the average correlation for factual questions over the 40-year span was .88, while questions regarding attitudes and emotions were less, .43.
Other studies have shown that episodic memories tend to be grouped together according to similarities, often forming a composite memory[199] and that chronological information is often lacking.[200] Both recency[201] and primacy effects[202] have been observed with episodic memories, and research shows that they tend to get less accurate over time.[203] The major determinants of memorability seem to be the presence of an significant temporal event,[204] the relative emotionality and perceived importance of the event and rehearsal.[205]
Lake's report of "memories" of the fetal and embryonic life are essentially episodic. While it is conceivable that such memories do indeed exist, they must be interpreted through the grid of the difficulties described above. Certainly the retention of such "memories" is consistent with the findings that high emotionality and importance tends to be correlated with retained memories. Perhaps those who do not have such memories did not experience these events as emotionally charged. Thus, Lake's finding that extremely negative fetal experiences seem to be best and most vividly remembered correlates with the evidence.

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[198]D. Field. "Retrospective Reports by Healthy Intelligent Elderly People of Personal Events of their Adult Lives," International Journal of Behavioral Development 4 (1981): 77-97.

[199]Linton, "Transformations of Memory in Everyday Life," in Memory Observed: Remembering in Natural Contexts, ed. U. Neisser (San Francisco: W.H. Freeman & Co., 1982); B. Means, D.J. Mingay, A. Nigam, and M. Zarrow, "A Cognitive Approach to Enhancing Health Survey Reports of Medical Visits," in Practical Aspects of Memory Current Research and Issues, eds. M.M. Gruneberg, P.E. Morris, and R.N. Sykes (Chichester: John Wiley & Sons, 1988).

[200]W. Wagensar, "My Memory: A Study of Autobiographical Memory Over Six Years," Cognitive Psychology 18 (1986): 225-252.

[201]D.C. Rubin, S.E. Wetzler, and R.D. Nebes, "Autobiographical Memory Across the Life Span," in Autobiographical Memory, ed. D.C. Rubin (Cambridge: Cambridge univ. Press, 1986).

[202]D.H. Holding, T.K. Noonan, H.D. Pfau, and C. Holding, "Date Attribution, Age, and the Distribution of Lifetime Memories," Journal of Gerontology," 41 (1958): 461-485.

[203]G. Cohen and D. Faulkner, "Memory for Proper Names: Age Differences in Retrieval," British Journal of Developmental Psychology 4 (1986): 187-197; G. Cohen and D. Faulkner, "Life Span Changes in Autobiographical Memory," in Practical Aspects of Memory Current Research and Issues, eds. M.M. Gruneberg, P.E. Morris, and R.N. Sykes (Chichester, John Wiley & Sons, 1958); G. Cohen and D. Faulkner, "The Effects of Ageing on Perceived and Generated Memories," in Cognition in Adulthood and Later Life, eds. L.W. Poon, D.C. Rubin, and B. Wilson (Cambridge: Cambridge Univ. Press, 1988).

[204]Brown, S.K. Shevell, and U. Rips, "Public Memories and Their Personal Context," in Autobiographical Memory, ed. D.C. Rubin (Cambridge: Cambridge Univ. Press, 1958); E.F. Loftus and W. Marburger. "Since the Eruption of Mount St. Helens Has Anyone Beat You Up? Improving the

Accuracy of Retrospective Reports with Landmark Events." Memory and Cognition 11 (1983): 114-120

[205]D.C. Rubin and M. Kozin. "Vivid Memories," Cognition 16 (1984): 81-95.

Conclusions

a. Theological and Biblical Method

In Frank Lake's issue-long article "The Theology of Pastoral Counseling" published in Contact in 1980, he cites three general theological goals: the thorough theological grounding for everything he does, the communication of a cross-based theodicy, and finally, the development of a theodicy which can even incorporate fetal suffering. As was stated previously, a full analysis of Lake's theological method is beyond the scope of the present work, but a critique of Lake's exegetical and hermeneutical methodology relating to the M-FDS is needed. Secondly, central toward an understanding of the M-FDS as a theological paradigm is Lake's theodicy. Simply put, what are the correlations between Christ's sufferings and ours, and how can these be effectively communicated to sufferers"?[206]

As has previously been noted, Lake's use of the term "paradigm" relating to the theological dimension of the M-FDS was defined as "a pattern, something shown side by side with something else, inviting comparison of the correspondences."[207] What he sought to imply by this was the close parallel between "the agony of the human spirit as it endures

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[206]Lake, "Research and Pre-natal Reconciling," 2.

[207]Lake, "Report from the Research Department #2," 3.

ultimate injuries and the agonies of Christ in his crucifixion."[208] But underlying this paradigmatic relationship were Lake's assumptions regarding the integration of the psychological and theological realms. That a theological understanding of Christ's sufferings could be not only correlated, but also integrated with the psychological trauma of a first trimester fetus is assumed by Lake.[209]

1. Lake's Methodology
a. Theological and Biblical Method

In an article titled "The Work of Christ in the Healing of Primal Pain" Lake described his theological method:

> **My task is to approach the 'work of Christ' from the limited aspect of an inductive, strictly 'clinical' theology. I am not, as I understand my task, required to give a full and rounded account of the whole body of soteriological doctrine as such. I am not here a teacher of theology, responsible to stress this or that aspect in direct proportion to the stress it receives in the scriptures, and argue deductively that what must follow is such and such. Approaching the theological task inductively my concern must be ... to take up 'an issue in the present situation'. .. and then analyze it in depth, to see what is at stake in it and how Christian truth may be related to it.[210]**

He continues by stating that he does not see it as his task to "declare the whole counsel of God" on every occasion. Rather, he says, "the whole pharmacopoeia of the gospel medicine is open to us to use. . . . What we do stands or falls by its faithfulness to the juncture between the particular human need and a particular God-given resource at whatever level."[211] The attempted integration of "God-given resources" and the "pharmacopoeia of the gospel" with the various facets of "human need" is both the strength and weakness of Lake's

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[208]Lake, Clinical Theology, xvii.

[209]In an article on "Clinical Theology" contained in the Dictionary of Pastoral Care, John Gravelle writes "The theological basis of the movement assumes, first, that parents. especially the mother, express on an emotional level the infant's experience of God, and secondly, that Christ's creative encountering of the personal pain of humanity is both a resource we need to claim, and an example of both spiritual and personal growth. It also believes that correlations can be made between, for instance, the biblical understandings of man and psychodynamic analyses of personality." (John Gravelle, "Clinical Theology." in Dictionary of Pastoral Care , ed. Alastalr V. Campbell [New York: Crossroad Books, 1990], 38).

[210]Lake, "The Work of Christ in the Healing of Primal Pain," 226.

[211]ibid., 227.

entire project. The division of the human person into physiological, psychological and spiritual dimensions while often practical, arbitrarily and superficially violates the essential unity of what it means to be a human being. Lake's stated attempt to integrate the various bodies of specialized data into a unity, grounded in a Christian theology informed by the Bible is certainly commendable.[212] But he succeeds only in a superficial manner and often at the expense of seeming to violate the original meaning of various passages.

Also estimable is the distinctly Christian therapy that this attempted integration gave rise to. "Clinical Theology" was defined by Lake as "the theology of pastoral care of a person in trouble, sorrow, weakness, confusion, affliction, anxiety, depression and the like" or "the theology that informs a 'clinical meeting' where actual cases and concrete problems are being presented. analyzed and discussed with a view to 'treatment' or the 'conduct of the case'."[213] Certainly these overlap and from the standpoint of the seeming inadequacies and weaknesses of both traditional Christian pastoral care[214] and traditional psychotherapeutic models,[215] both were needed.
Further, Moss makes the point that Lake's therapeutic system has the advantage of making clearly apparent, up front, its religious undertones.[215] These undertones[216] were, for

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[212]Hugh Melinsky, in an article attempting to evaluate the Clinical Theology Association, wrote that academically speaking, "it had been a brave attempt to marry the diverse disciplines of theology and psychology." Peters adds that Melinsky thought that this integration was both "too selective" and "too uniform". (Hugh Melinsky, Religion and Medicine[London: SCM Press, 1970] quoted in Peters, Frank Lake, 171).

[213]Lake, "The Work of Christ in the Healing of Primal Pain," 226-227.

[214]"Perhaps its [Clinical Theology] greatest contribution remains the challenge presented to others, in that it has forced Christians to look again at emotional suffering, and has demonstrated the inadequacies of many more traditional pastoral practices." ("Clinical Theology," in New Dictionery of Theology, eds. Sinclair B. Ferguson and David F. Wright [Downers Grove, Ill.: Intervarsity Press, 1988]: 150).

[215]Moss writes that "for many Christians, systems and methods are inherently suspect until they can be shown to be derived from Scripture or from authentic doctrine and tradition." (Moss, "In The Beginning," 15:1).

[216]Clare states that many modern psychotherapies are really secular religions that have hidden "religious" agendas. "Many of the people flocking to the growth centres and the ashrams, the encounter groups and the rolfing sessions seem to us to be unhappy, bewildered and disoriented people searching for some philosophical principle, some system of values by which to live. The questions they ask are often the ultimate questions concerning existence, purpose, the meaning of life, happiness, pain and death. Nor is there any doubt that psychotherapists are willing to be cast in the role of 'secular pastoral workers' providing values and meaning of their own. Yet we do feel that the announced agenda of psychotherapy. with its heavily medical. secular and pseudoscientific flavour, insufficiently reflects its frankly religious undertones." (Anthony Clare, Interview by Sally Thompson, 1981, British Broadcasting Corporation, 238, quoted in Moss, "In The Beginning," 15:1).

Lake, not simply implicit in a minor way, but rather foundational. Lake's intention was that psychology and therapy are always to be judged by and answer to a Biblically-informed Christianity.

But the weaknesses of Lake's attempted integration of "God-given resources" and the "pharmacopoeia of the gospel" with the various facets of "human need" are also readily apparent. Lake's so-called inductive theology[217] manifests itself practically as a hermeneutic theory in which both the biblical and theological resources are used in the service of certain psychological observations.[218] Lake's stated theological task of "taking up an issue in the present situation" and then going to the "pharmacopoeia of the gospel" to see what applies to particular human need" is the essence of how he utilizes both the Bible and various theologians.[219]

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[217]Peter van de Kastelle addressed Lake's claim of an inductive theology with the following statement: "It has been suggested that Frank's theological method was inductive, but was it? My suspicion is that it was merely eclectic, more like a series of footnotes. The apparent strength of the Clinical Theology Assn., in my opinion, is the apparent attempt to provide some theological base for those aspects of the human sciences which seemed important to Frank in his clinical work. . . . my feeling is that his theology was almost non-existent. Certainly Frank personally had a glorious vision of the sufferings of the Christ for us which appeared to motivate him, and which he was able to share with others in pain. A vision is not sufficient to provide a theology, though it may prove to be the seedbed out of which theology grows." Peter van de Kastelle, "A New Shape for Ministry" in "Freedom to Serve: Towards the Future with C.T.A." CTA Occasional Paper #3 [Clinical Theology Association, St. Mary's House, Oxford, April 1984], 14).

[218]In a review of Tight Comers in Pastoral Counselling, Atkinson writes: "There seem to be places where Lake is tailoring his theology to fit his psychological and therapeutic assumptions." (David Atkinson, review of Tight Corners in Pastoral Counselling, by Frank Lake, Third Way (September 1982). Commenting on Lake's observations relative to Christ and fetal-pain, Maclnnes writes: "Obviously there is much in the passion of Christ which will speak to our experience and be used in our healing. But Dr. Lake comes perilously near to establishing his psychology as a theology." (Mac Innes, "Reply to 'The Work of Christ in the Healing of Primal Pain," 12).

[219]In his review of Lake's Tight Corners in Pastoral Counselling, Alastair Campbell addresses what he calls Lake's "medicine bad approach': "Whatever this approach is, it is not "inductive theology", as that has been identified by Hutner, for example. Rather, it appears to be the deductive [emphasis Campbell's] theology and "pastoral medicine bag" approach which Hutner specifically opposed. . . . Dr. Lake seems to believe that bits of the Gospel or Christian truth can be "applied" to specific situations, without themselves being affected. (Alastair Campbell, review of Tight Corners in Pastoral Counselling, by Frank Lake, in C~ta~t 74 [1982:2]: 26, quoting Seward Hutner, Preface to Pastoral Theology New York: Abington Press, 1958]).
Lake's response to Campbell was contained in a letter to the editor of Contact written three days before he died: "I was careful to define exactly what I meant by "Approaching the theological task inductively [emphasis Lake's]. My concern must be to take up an issue in the present situation and then to analyze it in depth, to see what is at stake in it and how Christian truth may be related to it." Gratuitously denied my own definition of 'inductive', the reviewer, in homage to the Chicago pundit [Hutner], assert that this "is not 'inductive theology' as has been defined by Hutner" So what? So long as the sense of the word is accurately preserved, why should not two definitions be allowed? But then to be told that my approach is a "deductive", "medicine-bag approach", twisting the plain meaning of the word to its opposite, is monstrous. I do not oounsel with my hand impatient to open a "medicine bag"; quite the contrary. I stay with the person in their human dilemma, encouraging them to explore it and mull over it as it emerges, in their own way. This is not deductive. I do not ask them to start with my own theological premises. The reviewer's criticism of me here is flagrantly irresponsible. (Frank Lake, "Letter to the Editor," Contact 75 [1982:2], 28-29.)

While Lake would certainly disagree with this criticism, the very manner in which he uses the Bible, which is quite often,[220] illustrates his sometimes flawed exegesis. For instance, Lake very often ignores basic grammaticohistorical exegetical principles in Clinical Theology when he uses biblical personages to illustrates various clinical psychiatric descriptions, categories and treatments. For instance, Lake would see Ahitophel, Ahab and Elijah[221] as exhibiting the classic behavioral signs of depression. Simon the Pharisee, Peter, and Paul all exhibit dissociative behavior.[222] According to Lake, Jeremiah[223] evidences paranoid symptomology and Abraham,[224] Jacob,[225] and Job[226] all evidence schizoid characteristics.

Perhaps typical of Lake's problematic exegetical method[227] regarding the use of Biblical figures is his understanding of Mary Magdalene as the prototypical hysteric and Jesus as the prototypical counselor of an hysteric.[228] According to Lake, while Jesus affirms Mary, he affirms her not just as a person, but as a person of worth. Because of Mary's "hysterical" dependence upon Christ, his death is an "appalling cataclysm", because while the disciples may have lost their leader and Peter may have lost his self respect, Mary had lost her

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[220]In Clinical Theology alone Lake cites Old Testament passages 135 times ("Index of Biblical References" pp 1200-1201) and New Testament ones 139 times ("Index of Biblical References" pp.1202-1203. He cites 56 different Biblical personages 222 different times ("Index of Biblical Characters" p.1204).

[221]ibid., 102-103.

[222]ibid., 461-470.

[223]bid., 1107.

[224]ibid., 752-763.

[225]ibid., 866-569.

[226]ibid., 581-588.

[227]Another example was given by Michael Hare Duke when he writes that "Dr. Lake claimed that his fundamental model of human nature was drawn from his meditation on the Christ of the Fourth Gospel. This assumes that St John was writing a biography of Jesus which can be used reliably as a way of understanding the psychodynamics of Christ's personality." (Michael Hare Duke, "Analyzing the Psychoanalysts," review of Frank Lake: the Man and His Work, by John Peters).

[228]Lake, Clininical Theology, 446-458.

personality. She goes to the tomb and refuses to leave. Christ appears to her and Mary unwittingly thinks she is speaking with the gardener. According to Lake, the two questions that Jesus asks Mary ("Why weepest thou?" and "Whom seeketh thou?") are the two questions fundamental to every hysteric. The hysteric is seeking someone who will give them a reason to stop crying. According to Lake, Jesus then begins to teach Mary that her dependence upon him must change[229] not the fact of it or even the incarnational element to it, but rather the limitedly human element of it. She must give up clinging to the humanity of Jesus (ie. she tries to cling to his feet) because she now becomes a member of the new humanity, in which the Holy Spirit dwells within.

It could be argued that Lake's exegesis here is really an eisegesis. While this is certainly not always true regarding his handling of the biblical sources, he does at times read into the text rather than derive meaning from the text. Mary's relationship with Jesus apparently began when he cast seven demons from her.[230] That it was a close relationship is seen in the fact that Mary, along with several other women, travelled with Jesus entourage and supported his ministry financially. She is next mentioned at the foot of the cross with Jesus' mother Mary.[231] Finally, she is mentioned in all four gospels as one of the women who first discovers the absence of Jesus' body at the tomb.[232]
Based perhaps on Mary's "clinging" behavior following Jesus appearance to her, Lake reads into her actions and Jesus's response a totally foreign therapist/hysteric relationship. No biblical evidence exists to claim Mary as manifesting an hysterical dependence upon Christ. Indeed, Luke reports that both women "clasped his feet." Mary's presence at the garden tomb is not necessarily indicative of her loss of "personality", but is normal mourning behavior for one who has lost a close friend.[233] Others were also in the garden, including Joanna,[234]

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[229]Lake sees the Jesus/Mary Magdalene dyad as a prototype. The therapist builds trust in the relationship, then lovingly introduces the "dark night" (cf. St. John of the Cross) of seeming loss wherein the person discovers that they have worth within and don't need to cling to some outside source of worth, and who, when the dawn finally oomes, is there to reaffirm the facts of internal worth once more.

[230]Luke 8:2.

[231]Mark 15:40 and John 19:25.

[232]Matthew 28:1-7, Mark 16:1-5, Luke 24:1-10 and John 20:1-2.

[233]Mary Magdalene's behavior is similar to Mary and Martha's behavior when their brother Lazarus dies (John 11:1-37).

Salome and Mary, the mother of James.[235] Jesus two questions to Mary are not assessment questions, but rather straightforward queries relative to his death and resurrection. While Lake's point that Jesus was telling Mary that their relationship would be changing is legitimate, the reason has to do not with psychodynamic notions of transference and dependence but with Christ's anticipated ascension and the giving of the Holy Spirit. While described behavior may certainly indicate certain parallels between biblical figures and certain personality types, Lake very often ignores the historical, cultural, social background of the various biblical passages he cites.

Certain passages are also cited by Lake as connoting certain descriptions or prescriptions for various psychiatric problems. For instance, Lake would see Psalm 42 as containing 6 characteristics of a healthy response of a depressed person to their depression.[236] Others passages are also cited by Lake as indicative of certain psychological themes. He lists 48 psalms as "Psalms for the depressed,"[237] and sixteen others as "Psalms for the Afflicted."[238]
Perhaps typical of his recurrent faulty exegesis regarding his use of Biblical passages as they related to therapeutic processes was his suggestion that being "born-again" could be understood as relating to reliving one's birth through primal integration. Tom Small writes:

> **I can remember when, together with a number of other leaders in the Anglican renewal movement, I met Frank in London to convey to him our concern and to beg him to not to go on suggesting that the text 'You must be born again' in John 3 could be validly exegeted as meaning, 'You must relive your birth experience'. We cannot have convinced him because he went on doing it.[239]**

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[234]Luke 24:10.

[235]Mark 16:1.

[235]He is first honest with himself about what he feels and secondly, he affirms what he feels in God's presence. Thirdly, he does not seek to palliate the negative, 'he does not take refuge in a false dualism to save God's face by limiting his sovereignty." Fourthly, he attempts to stand outside himself and gain another perspective, while he fifthly counsels himself to "wait on God." Lastly, he looks forward to a "face-to-face" encounter with God. (Lake, Clinical Theology, 182).

[237]ibid.,186-187.

[238]ibid., 187.

[239]Peters, Frank Lake, 84.

Lake's repeated eisegesis is even more apparent regarding some of the theological sources, particularly as it relates to the M-FDS. Lake justified the application of theological sources to psychological categories by stating that "alternative nomenclatures"[240] have been used historically to refer to the same human experiences. Thus, Lake can state definitively that St. John of the Cross' "Dark Night of the Soul", Martin Luther's "theologia crucis", Simone Weil's "Nail of Affliction"[241] and Soren Kierkegaard's[242] "Sickness Unto Death" all apply, more-or-less to various psychic disturbances, but are particularly applicable to the schizoid experience of dread, non-being, degradation and despair. The "alternative nomenclature" scheme, in which Lake connected and paralleled certain similar ideas, language and themes, results in a surface "integration" at the cost of the integrity of the theological sources.

For instance, Lake's appropriation of St. John of the Cross, Soren Kierkegaard and Simone Weil as not only describers of fetal distress, but also as sufferers is an affirmation fraught with difficulty. What Lake does is to connect in a facile manner the language of theological reflection and description with the language of psychodynamic, psychological and primal descriptions. Since these languages, in his view, are merely "alternative nomenclatures" for the same experiences, he moves back and forth between them with apparent ease, sometimes with total disregard for the historical, social, religious, and political context in which St. John, Kierkegaard and Weil lived and wrote. Several specific examples follow.

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[240]Lake, Clinical Theology, 558. Lake cites several diflerent terms for what he asserts is really the same thing as our modern term "schizoid", ie. the Biblical term "affliction" used by Job and the Psalmists, Simone Weil term "malheur", Kierkegaard's "Sickness Unto Death", Cohn Wilson's term "Outsider." Elsewhere Lake writes that the horror of transmarginal stress has been accurately described "with those marvels of self-observation of the condition given by Simone Well, Soren Kierkegaard and so many lyrical poets from St. John of the Cross to George Herbert and Gerard Manley Hopkins, and the present Pope himself, in the Christian tradition." (Lake, "Mutual Caring," 32-3).

[241]As an example, take note of Lake's description of a "young Anglican priest": "He was in deep distress and pain. He was in that state of 'affliction' so vividly described by Simone Weil in 'Affliction and the home of God'. He had, he said, 'totally lost his faith'. He was hurt.and angry with 'god' that after years of 'trying' to be godly, no relief came to his perpetual inner sense of anguished grief. He was disgusted at himself as a playacting automaton, controlled by others. He felt a 'block betrayer' of the true self he could never find." (Lake, "Research and Pre- natal Reconciling," 1).

[242]In Clinical Theology, Lake cites Freud 58 times, but he cites Kierkegaard 68 times.

As noted previously, Lake describes St. John of the Cross as a severely stressed and, indeed, schizoid personality,[243] whose poem "I die because I do not die" is said to illustrate this. The translation that Lake uses of St. John's poem seems, on the surface, to express the paradoxical embrace of death and recoil from life that is so characteristic of the transmarginal states. Yet several other translations[244] render the language of the poem as less expressive of hate of life and more expressive of longing for God. Indeed, the title of John's poem in one translation is rendered a description, "Coplas about the soul which suffers with impatience to see God."[245] One example of the varying translations illustrates the point. The translation Lake uses for the first stanza follows:

This life I live in such a way
Is nothing but life's deprivation,
One prolonged annihilation
Till at last I live with Thee.
Hear, my God hear what I say,
I do not want this life of mine;
I die because I do not die.

M.C. D'Arcy's translation[246] of the same stanza is quite differently evocative:

This life I live in vital strength
Is loss of life unless I win You:
And thus to die I shall continue
Until I live in You at length.
Listen (my God!) my life is in You.
This life I do not want, for I
Am dying that I do not die.

Lake's use of this poem as an expression of the despair of the schizoid position is quite different than its seeming expression of longing for God. Indeed, the schizoid position shuns all contact, especially with the mother and then with God as a projection of dynamics of

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[243]Lake writes that St. John of the Cross "expresses the schizoid position with startling clarity." Several hundred pages later he writes that "It is . . . quite evident that he was personally familiar with the demonic paradoxes of the schizoid position." (Lake. Clinical Theology, 593 and 842).

[244]John of the Cross, "I Live Yet Do Not Live in Me," In The Poems of St John of the Cross, trans. Willis Barnstone (New York: New Directions Books, 1968). 62-65; John of the Cross, "Life No Life," in The Poems of St John of the Cross, 3d Ed, trans. John Frederick Nims (Chicago: Univ. of Chicago Press, 1979), 30-35.

[245]Poems of St John of the Cross, trans. Roy Campbell (New York: Pantheon Books, 1951) 35~7. Nims subtitle is "Rimes of the soul in an agony of longing to see God." ("Life No Life," The Poems of St John of the Cross, 31).

[246]M.C. DArcy, "Preface," in Poems of St John of the Cross, trans. Roy Campbell (New York: Pantheon Books, 1951), 8.

the mother/child dyad. Thus, Lake's meaning is the diametric opposite; instead of a longing for God which makes this life pale by comparison,[247] it becomes for Lake a rejection of life, including the relationships of life such as mother and God.

In Soren Kierkegaard Lake also finds a schizoid personality, one who was "afflicted with . . . dread and incurable melancholy,[248] and one who also recorded an "alternative nomenclature" for the exigencies of fetal distress and it's result, the schizoid position. It is true that many Kierkegaardian scholars would acknowledge that Kierkegaard suffered from some form of dysfunction, if not psychopathology. And one can certainly and plainly see within the Kierkegaardian corpus an insightful and incisive comprehension of the human spirit and it's struggles, including the psychological struggles.

Lake is thus right to see Kierkegaard as a theologian who was a psychologist as well, with self-analysis as his main subject of inquiry. While Kierkegaard wrote of his "incurable melancholy" and at times acted in a peculiar manner, Lake's appropriation of Kierkegaard's terminology as expressive of specific characteristics of the M-FDS proceeds too far and reads too much into what Kierkegaard meant.
For instance, in Lake's hermeneutical hands, Kierkegaard's terms "dread", "despair" and "dis-relation" relate specifically to the fetus' or child's reaction to either abandonment or "the invasion of distressingly bad maternal emotions."[249] resulting is "dis-relation" between mother and fetus/infant. "Sickness unto death" is closely related with the "abnormal, paradoxical wish to die and be annihilated."[250] Lake wrote that Kierkegaard's language in the Concept of Dread "is straining to express the nature of life and its catastrophes in the earliest and most determinative months of existence."[251]

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[247]A more likely "interpretion" of John's poem would be as a reflection of sorts relative to Paul's statement of his longing for death" found in Philippians 1:21-24: "For to me, to live is Christ and to die is gain. If I am to go on living in the body, this will mean fruitful labor for me. Yet what shall I choose? I do not know! I am torn between the two: I desire to depart and be with Christ, which is better by far; but it is more necessary for you that I remain in the body."

[248]Lake, Clinical Theology, 586.

[249]Lake, "Studies in Constricted Confusion," T19.

[250]ibid., 558.

[251]ibid., 726.

Perhaps Lake anticipated the problems of applying Kierkegaard's terminology to the specific components of the M-FDS. Thus, he writes:

> **The fact that the terminology is difficult and the expression sometimes tortuous is not entirely the fault of Kierkegaard's too complex intelligence. This is in the nature of the material under consideration, which is essentially pre-verbal, or non-verbal, and paradoxical. He had to invent a language and define his own concepts. Whatever one tries to express in this field of schizoid studies, continued reading of Kierkegaard will show that either in the works he published, or in the posthumous Journals, he had said it all 120 years ago, and said it better."[252]**

Thus stated, Lake feels free to appropriate Kierkegaard's descriptions of "per-verbal, non-verbal, and paradoxical" experiences to the M-FDS. Lake writes that "Kierkegaard is explicit about" the origin of the "catastrophes" of the M-FDS in the "infantile states of mind."[253] Further, "Kierkegaard's image of a poisoned environment spreading its poison into him until his own life and whole existence is poisoned, occurs commonly in first trimester transcripts."[254] Lake then cites an extract from Kierkegaard's Journals:

> **The whole of existence frightens me, from the smallest fly to the mystery of the Incarnation; everything is unintelligible to me, most of all myself; the whole of existence is poisoned in my sight, particularly myself. Great is my sorrow and beyond bounds; no man knows, only God in heaven, and He will not console me.[255]**

Thus Lake sees in Kierkegaard's description a reiteration of primal distress, a recitation of the "facts" of transmarginal distress. But what Lake ignores is the rest of the journal entry which he quotes from. In it Kierkegaard is clearly referring back to 1836, to a period three years earlier when he had engaged in a period of moral rebellion and sin. Kierkegaard's journal entry, made in the very midst of his peculiar relationship with Regina Olsen, continues:

> **"No man can console me, only God in heaven and he will not have mercy upon me -- Young man, you who still stand at the beginning of the way, if you have gone astray, 0 be converted, turn to God and taught by him your youth will be strengthened to the work of manhood; you will never experience what he must suffer who after having wasted the strength and courage of his youth in rebellion against Him, must now, exhausted and powerless, begin a retreat through the desolate and devastated provinces surrounded on all sides by the abomination of desolation, by burnt towns and the delusive expectations of smoking sites, by trampled down prosperity and broken strength, a retreat as slow as a bad year, as long as eternity monotonously broken by the sound of the complaint: these days please me not.[256]**

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[252]**ibid. 595.**

[253]**ibid., 701.**

[254]**Lake, "Mutual Caring," 44.**

[255]**Lake, "Mutual Caring," 45 quoting Kierkegaard, The Journals, Extract #275.**

For Lake, a third and very important originator of an "alternative nomenclature" for the M-FDS is Simone Weil, whom, he believes is also someone well acquainted with the dynamics of first-trimester transmarginal distress. Lake writes:

> **Simone Weil's account of the three-fold affliction corresponds exactly with the three-fold aspects of severe and undisplaced negative umbilical or intra-uterine affect. Persons re-living a very bad time in their first trimester, speak of themselves, in later life, exactly in these ways. Constricted confusion has been of schizoid intensity, following trans-marginal stress.[257]**

Perhaps it can be affirmed that Lake's utilization of a very narrow segment of Weil's thought is less problematic than his use of St. John of the Cross or Kierkegaard. Weil's own struggle with dysfunction and pathology[258] resulted in her premature death by anorexia nervosa.[259] Her descriptions of "malheur" were, to an extent, self-descriptions. However, the problem of what Weil meant by her descriptions and how Lake's utilizes them to express the dynamics of the M-FDS still remains. Weil's essay, "The Love of God and Affliction"[260] is the major source for Lake's use of Weil. This essay was written in response to an experience in 1938 during Holy Week, where she had gone to all of the Catholic liturgical services. Anderson writes that "in spite of splitting headaches, she had responded deeply to the beauty of the chanting and the words. 'The Passion of Christ' she said, 'entered into my being once and for all."'[261]

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[256]**Kierkegaard, The Journals, Extract #275.**

[257]**Lake, "Studies in Constricted Confusion." T13.**

[258]**"Her notorious dislike of personal contact, her repulsion if she were kissed, and her total sexlessness, all point to personal phobias that were conquering the overworked, ill, and lonely woman." (Michele Murray, "The Jagged Edge: A Biographical Essay on Simone Weil," in Simone Weil Interpretations of A Life, ed. George Abbott White [Amherst, Mass.: The University of Massachusetts Press, 1981], 26).**

[259]**"The Coroner's verdict was 'cardiac failure due to myocardial degeneration of the heart muscles due to starvation and pulmonary tuberculosis. . . . The deceased did kill and slay herself by refusing to eat whilst the balance of her mind was disturbed'". (David McLellan Simone Weil: Utopian Pessimist London: Macmillan, 1989], 266).**

[260]**Weil, "The Love of God and Affliction" in Waiting for God, 117-136.**

[261]**David Anderson, Simone Weil (London: SCM Press, 1976), 58.**

Thus, "The Love of God and Affliction" was a Good Friday meditation which focused on theodicy and the Cross. While Lake certainly saw correspondences between Weil's descriptions of affliction and his own understanding of prenatal distress, there is nothing in this essay which might indicate that Weil intended anything as specific as Lake envisions her to mean. Thus, Lake's use of Weil as a resource for a general theodicy is certainly legitimate. But seeing Weil as describing specifically the M-FDS is not.

B. Critique of the M-FDS as a Theological Paradigm
1. Lake's Methodology
a. Theological and Biblical Method
b. Integration of Psychology and Theology

Lake's flawed exegesis of the Biblical and theological resources in the service of certain psychological observations regarding the M-FDS gives rise to the weakness of his attempt to integrate psychology and theology. Perhaps the fact that Lake was never professionally trained as a theologian partially explains his eisegesis; but certainly any attempt to integrate two overlapping, yet disparate fields, brings with it certain problems.

For instance, both theology and psychology have distinct "languages" and "categories" which, in the parameters and context of each well-defined field of study, are intelligible and useful. But when the "languages"' and "categories" of one field are used interchangeably with those of another, meaning is often lost or transmuted in the transition.[262] F.J. Roberts, in a discussion about Clinical Theology makes the further point that even within the various fields that Lake sought to integrate there are a whole variety of sub-fields with distinct vocabulary and category structure which complicates the task of integration even further.[263] For instance, the challenge of integration that Lake attempts with the M-FDS embraces the not only the theological dimension, but also the physiological, psychoneuroendocrinological, and psychological/psychiatric. Melinsky, addressing this difficulty, writes of Lake's attempted integration:

> **For theological guidance, Dr. Lake looks principally to Job, St. John's Gospel, St. Paul's Epistle to the Romans, Kierkegaard, Simone Weil and Martin Buber. His psychological mentors are Freud and the neo-Freudians, Klein, Fairbairn, Sullivan and Guntrip. Since there are great divergences amongst theologians and psychiatrists in their own fields, it is hardly to be expected that any one mortal could lead these two contentious disciplines to a happy marriage.[264]**

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[262]"Among a number of criticisms of the movement's [Clinical Theology Assn.] teaching, some people believe that it has used psychiatric, theological, existentialist and psychoanalytic language as confusing alternatives, losing the rigour and consistency of each language in the process." (Gravelle, "Clinical Theology" 38).

[263]Roberts, "Clinical Theology: An Assessment," 24.

Thus, Lake's attempt to integrate psychology and theology results in a superficial amalgam of psychologically interpreted theology and theologically interpreted psychology. There is a concomitant loss of rigor in both sets of categories, but especially in the theological. Melinsky comments:

> **There are flashes of insight sparked off by the high tension between the fields of theology and psychiatry. But there are also links made between the two disciplines which are too simple.**[265]

Lake saw no barrier to using the different categories as if they corresponded in a oneto-one fashion. This often resulted because he was open to new ideas and if they struck his fancy, he sought to "integrate" them immediately into his theoretical constructions. Michael Jacobs, who edited Tight Corners in Pastoral Counselling, states that Lake's "failing was the wish to integrate everything he read as soon as he could, without really digesting it, or looking for alternative explanations." Indeed, Jacobs stated that Clinical Theology started to "go wrong" with the "rapid undigested introduction of the newer therapeutic ideas."[266] Others[267] have criticized Lake similarly. The integration of new "ideas" often took place on the basis of a "seeming" similarity between Lake's evolving thinking regarding the MFDS and the new "idea." Especially toward the end of his life, Lake seemed to be grasping for anything that might buttress his theories of pre-natal distress. Perhaps at the root of this rapid superficial integration was, as one of Lake's colleagues put it, his seeming "inability to reflect critically upon one's own basis of thought."[268] This inability led, in turn, to an inability to countenance criticisms of the M-FDS. In a final riposte to Alastair Campbell's critical review of Tight Corners in Pastoral Counselling, Lake wrote:

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[264]M.A.H. Melinsky, "Clinical Theology: A Survey," 119.

[265]ibid, 127.

[266]Peters, Frank Lake, 86.

[267]John Peters wrote that Lake "seldom read a book through from page one to the end; rather, he sought out all those things which were grist to his mill." (Peters, Frank Lake, 163). James Cotter wrote that Lake "did seem to me to be often in the grip of the latest theory. I suspect it was the combination within him of pioneer and fundamentalist." (ibid, 90).

[268]ibid., 81.

> **Enough. Enough to make my point that the reviewing is tendentious. It is looking to criticize, manufactures some most unjustly on the way, and ends where you would expect. To throw in our direction that most pejorative of smear terms, "Fundamentalist", is in the poorest of taste and quite indefensible. Alastair remains, entrenched where he began, unable to make the effort to understand my world and therefore unjust to it. Of what group are those the predominant characteristics?[269]**

Lastly, Lake's attitude toward those who disagreed with his assumptions regarding theology and psychology was often one of condescension. Roberts wrote that very often "the confusion created by the . . . mixing of categories is interpreted by some as an indication of their failure to acquire the secret."[270] That Lake believed this is evidenced by his introduction to "Mutual Caring" where he is commenting on those who would continue to disagree with him after reading the book:

> **I doubt its power to convince where the opposition is itself partly unconscious and partly deeply invested in current theory and long-established practice, based on Freudian, Kleinian or neo-Freudian 'object-relations' theory, all true at their own levels, but whose assumptive fields cannot conceive of foetal experience and learn ing.271**

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[269]**Lake, "Letter to the Editor," 29.**

[270]**Roberts, "Clinical Theology: An Assessment," 24**

[271]**Lake, "Mutual Caring" lntro:6.**