

THE DEVELOPMENT OF A MEASURE OF MARGARET MAHLER'S THEORY
INTEGRATING THE INFANT, THE MOTHER, AND THEIR DYADIC
RELATIONSHIP DURING THE INFANT'S FIRST FIVE MONTHS OF LIFE

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SARITA GOBER

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APPROVED:

Karen Riggs Skean, Psy.D.

Wilma Bucci, Ph.D.

Sally Moskowitz, Ph.D.

DEAN:

Stanley Messer, Ph.D.

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ABSTRACT

Psychoanalytic infant theory conceptualizes and explains infant behavior in abstract terms. A behavioral and objectified means of looking at clinical infant material and linking it to psychoanalytic infant theory can provide a bridge between the abstract ideas and tangible and objectified infant and mother behaviors. The present study adapted the first two phases of Margaret Mahler's theory of infant development, the normal autistic and normal symbiotic phases, into operationalized statements. These statements were compiled into a 21-item measure that was scored based on the presence of these behaviors in infant observations recorded by psychoanalysts who were part of the Anni Bergman Parent Infant Training Program. Independent judges were trained to score, on a continuum, the presence of the operationalized statements in the observation narratives. There were two stages of measure construction and development, of the development of the manual of the measure, and of judge training and scoring. Analyses were computed in three phases and inter-rater reliability statistics using interclass correlations assessed reliability between judges. The third and final phase of results indicated that there was an increase in single measure reliability of items in the measure when compared to results of phase one; ten out of the twenty-one items had sufficient reliability for one judge to represent the other judges on scoring future observation narratives. Descriptive results of the actual scores of judges based on the weeks of infant development and the item being assessed were examined qualitatively. Interpretation of the reliability results for both quantitative and qualitative analyses, in addition to the implications for Mahler's theory, are discussed for each item in the measure.

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CHAPTER I

INTRODUCTION

Psychoanalytic theorists describe the experience of the infant, mother and the infant-mother relationship throughout their writings. Many of the states and experiences that are described about this relationship are in abstract concepts and terms. In some instances it is difficult to understand or know what the idea or concept that the theorist is describing would look like in objective and observable terms. It is hard to know how a mother and infant would be behaviorally acting when exemplifying the state or concept that the theorist is describing. A comprehensive and methodical means of looking at clinical material and data of infant, mothers and their dyadic relationship, can bridge this clinical material with the psychoanalytic theory of infants. By examining the clinical material in a systematic way, a stronger link can be establishing between psychoanalytic theory and the clinical material. A significant contribution to the field of psychoanalytic infant theory and development would include a validation or invalidation of infant theories through the use of clinical material and data.

This dissertation aims at accomplishing the above stated goal. It focuses on Margaret Mahler's theory of infant development. A measure was created to transform the first two stages of her infant theory into objective and measurable statements of infant and mother behaviors. The measure was rated by judges using infant observation narratives of the infant from 0-5 months of age. The purpose of this dissertation was to create and develop the reliability of the measure on Mahler's first two phases of infant development to ascertain if the behaviors that represent theoretical aspects of her theory of the mother and infant are present in clinical data.

CHAPTER II

LITERATURE REVIEW

Psychoanalytic and Developmental Theory of the Infant

Many psychoanalysts have sought to comprehend the human condition and psyche from the viewpoint of relating to objects within the context of development. Sigmund Freud, the founder of psychoanalysis, compares the beginning stage of infant development to “a bird’s egg with its food supply enclosed in its shell” (Freud, 1911). Freud uses this analogy of the bird’s egg to the infant’s ‘egg’ because just as the bird’s egg is one where there is autistic satisfaction of nutritional needs so is the infant metaphorically encapsulated in their internal world to the exclusion of external stimuli and external objects. As will be discussed later, Freud’s analogies permeate Margaret Mahler’s theoretical infant formulations and theory (Brandell, 2010; Tustin, 1994). Freud is the originator of the term autism for this early infant stage, explaining that it is a stage that precedes primary narcissism and that the infant progresses from autoerotism to anaclitic object choice to primary narcissism as the newborn infant’s psychic energy is focused on the self (Freud, 1914; Hartmann, Kris & Lowenstein, 1946). In the context of infant development, autism refers to a state of the infant being encapsulated in its own internal sensory world. According to Freud these first few weeks of infant life is also seen as a state of non-object relatedness (Tustin, 1994). Hartmann, Kris and Lowenstein (1946) discuss Freud’s assumption that when an infant’s needs are gratified they experience the source of the satisfaction as being the self. The deprivation that the infant will experience, in terms of times when the infant’s needs will not be attended to by the

mother, will provide some of the foundation for the infant to develop the ability to distinguish between the self and the object.

Elkin (1972) speaks about the similarities of Freud's stage of primary narcissism, Mahler's autistic phase and Hartman's undifferentiated phase as they all refer to the state in the infant that is prior to self awareness, or preconsciousness. He elaborates by explaining how the infant has the ability to discriminate psycho-physiological sensations relating to pain and pleasure but the inability to distinguish between inner and outer sensations, emotions or perceptions. This is also how Freud and Mahler theoretically conceptualized this stage, and Elkin (1972) explains that this contributes greatly to the dependence of the infant upon the mother (Elkin, 1972).

Daniel Stern, a psychoanalyst and infant researcher whose work aims to merge psychoanalytic and developmental theory has written about two kinds of infants, the observed infant and the clinical infant (Stern, 1985). The observed infant is the infant who is observed in their naturalistic settings in order for the therapist or observer to understand the infant's experience and the goal is "to relate observed behavior to subjective experience" and in order to do this "one must make inferential leaps" (Stern, 1985, p. 13). Through this explanation, Stern is describing how one can observe and see an infant's behavior in real time, meaning as the infant is growing up. However, in order to relate the observed material to the subjective experience of the infant there are certain conceptual inferences about the behavior that one would need to make. Stern goes on to explain that in order to make these inferences from the observations of the infant, the inferential and observation method in which the observations are made needs to be "extensive and well established" (Stern, 1985, p. 13). Therefore there needs to be a

consistent and methodical means of observing these behaviors and relating the observations to the subjective experience of the infant. As will be discussed below, there are programs that have an established and organized method of collecting infant observations.

Stern (1985) contrasts the observed infant with the clinical infant, as the clinical infant is an adult patient whose infant years and experiences have been reconstructed by the way this adult presents to his therapist or analyst. The therapist uses infant development theory to make inferences about what the adult patient was like as an infant. Many theorists have used this method to construct their psychoanalytic theories. During the clinical practice and therapeutic work with the patient, the theorist/clinician is analyzing the adult patient and extrapolating infant theory from this clinical experience with this adult. There are theorists who had interaction with infants, however not in the “extensive and well established” way that Stern refers to as quoted above. Early psychoanalytic theorists constructed their theories by retrospectively looking at their adult patients and extrapolating internal and psychic realities of what the adult was like as an infant. The two infants described by Stern are two different methods that theorists have used to gain a better understanding of the ideas, concepts and subjective experiences of the infant’s world.

As further discussed, Stern’s and Mahler’s views of the infant’s initial abilities greatly contrast each other. They strongly disagree on the infant’s initial capacities and ability to relate to the self and other at the early stages of infant life. Stern speaks about infant research that reveals the infant’s immediate ability to respond to external stimulation and having the immediate ability to interact socially with other objects (Stern,

1985). Mahler's view that the infant has little to no awareness of external stimulation will be discussed in greater detail below as it is the focus of this dissertation.

Psychoanalytic Research

There is much controversy over the concept of conducting psychoanalytic research and the following account of a heated debate between Andre Green and Daniel Stern in 1997 captures some of the disagreements. Stern's perspective on research and the importance of infant observation and using it to inform psychoanalytic work with infants and adults is strongly contrasted by the opinion of Andre Green, a psychoanalyst from Paris. Their disagreements about the place of research in psychoanalysis came to a head at a conference in 1997 that was then written up into a book entitled *Clinical and Observational Psychoanalytic Research: Roots of a Controversy* (2000). Green's perspective is that the experience of the infant does not constitute "real material" for psychoanalysis and the only clinical setting for psychoanalysis is when the older patient reconstructs earlier life events through free association, interpretations and other psychoanalytic methods. Green is more concerned with the infantile than the infant and therefore thinks that observing infants and using this information to inform the psychoanalytic process is not helpful and may even be detrimental to the field (Ackman, 2002). Stern's focus is on the lived experience of the infant, from the infant's perspective as this is where the infant develops memory traces and the representations of their world begin (Ackman, 2002). Stern studies the infant's preverbal communications, through infant body movements, and observable communication between the mother and the baby and their connection to the memory traces that are being created in the infant to understand these early capacities of the infant. In addition to adult psychoanalytic work,

Stern felt working with infants and children provide invaluable information to enrich infant development theory.

Stage Theories of Infant Development

Another way theorists have conceptualized infant development theory has been through stage theories. Different theorists have used the stage theory method in order to conceptualize their understanding of the infant's growth from their first moments of life and through infancy and beyond. Theorist's stage theories differ based on their theoretical and professional background and the particular way they understand and conceptualize infant and child experiences. Additionally, theorists differ in the way that they collect their data and how it is used in conjunction with their clinical work to inform and influence their theories. The first stage of many theories extends from birth until the child is two years old. This is noteworthy given that there is such a range of behaviors that can occur from birth to two years of life. There are such minute changes that happen at many points during these two years that it seems difficult to encompass two years into one stage. However, as mentioned, different theorists have different perspectives and goals for the stage they are conceptualizing. For the purposes of this project several stage theorists will be briefly reviewed encompassing the theorists' stages of the time period of Mahler's first two phases.

Jean Piaget, a developmental psychologist, studied children's behaviors in a systematic way and had a systematic means of collecting data that detailed the early stages of infant development. The focus of his observations was on the cognitive capacities of the infant and how one comes to acquire and use learned knowledge, not on the internal and subjective experiences of the infant. He formulated a stage theory that

follows the child through development. His first stage, the sensorimotor stage, covers the first two years of life, broken down into different sub stages. Piaget sees the first six weeks of life as the simple reflexes sub-phase where the infant coordinates his body through reflexes that over time become incorporated into deliberate actions. Six weeks to four months of life is a sub-stage that Piaget called the first habits and primary circular reactions phase (Piaget, 1926). The infant begins to incorporate his reflexes with repetitive and reproductive actions. Dowling (1985) points out that Piaget's first stage of the sensorimotor period are about the infant having "an absolute lack of nonreflexive differentiation" (Dowling, 1985, p. 578) referring to the similarities of Mahler's normal autistic phase, discussed in more detail below.

Sigmund Freud (1905) developed psychosexual stages of development where the developing infant has instinctual sexual drives that are focused on a certain erogenous zone, a part of the body from which the infant feels particular gratification. Freud's first stage, the oral stage, extended from birth to eighteen months of age and the focus of the theory is the infant's heightened sensitivity to the oral area or the mouth of the infant. The infant mouth becomes the focus of most libidinal pleasures (Freud, 1905). When comparing this stage, there is a real contrast in the focus of the observed behavior between Piaget and Freud. Freud is interested in the subjective world of the infant where Piaget is interested in understanding the behaviors of the infant in the context of the infant's cognitive capacities.

Erik Erikson (1950) is another psychoanalytic theorist whose stage theory builds on Freud's theory as he created the psychosocial stages of the individual beginning with trust vs. mistrust encompassing the first two years of in the infant's life. This stage

focuses on how and if the infant's parents and caregivers are meeting the infant's basic needs. Erikson was greatly influenced by Freud; however, he differs in that he looks at the way the person is impacted and interacts with their social environment and experiences throughout their life.

The final stage theorist that will be presented is that of Margaret Mahler (Mahler, Pine & Bergman, 1975), as the first two phases of her stage theory are the focus of this dissertation. Mahler was a psychoanalyst who systematically studied infants from birth through 36 months of age. The following is a brief description of her stage theory divided developmentally into the sub-phases that she created. The first two phases will be elucidated in greater detail in the following section.

The normal autistic phase occurs during the first four to six weeks of infant life where the infant is characterized as being in a sleeplike state for the majority of the time. The infant is seen as being in their own "autistic shell" for which he/she responds to internal needs to the exclusion of the external environment. The second stage, the normal symbiotic stage, encompassed the infant from six weeks to five months of age. During this stage Mahler talks about how the infant becomes more aware of the mother but there is no sense of separateness from the mother as the infant experiences being one with the mother. The separation-individuation phase follows where the separation element refers to the infant's development of limits and differentiation from the mother and the individuation element focuses on the infant's developing ego, identity and cognitive development. This phase is broken into 3 subphases that are sequential but overlap with each other. Hatching, occurring from 5-9 months involves the infant's beginning awareness of differentiation from the mother, the hatching of the shell that was around

the infant and the mother in the normal symbiotic phase. Practicing, occurring from 9-16 months, is brought on by the infant's increased independent mobility therefore causing the infant to have more independence and physical distance from the mother.

Rapprochement, beginning at 15 months, is divided into three subphases- beginning, crisis and solution. The child develops more awareness that their mobility makes them separate from their mother and goes back to wanting to be in close proximity to the mother. The child shows conflict about the desire to stay connected and close to their mother and becoming more independent and mobile. The child tries to resolve this 'crisis' by developing their form of individuality. Proceeding the separation individuation phase is the object constancy phase where the child has more of an understanding of the mother's separateness leading to the child having internal representations of the mother, even when not with the mother.

The purpose of this dissertation is to gain a better understanding of the first two phases of Margaret Mahler's theory, namely the normal autistic and normal symbiotic phases and what these phases and the theories behind them look like in the observed behaviors of the infant, the mother and the relationship between the mother and infant. The following sections of this dissertation will provide an overview of Mahler's research, trace the theoretical evolution of Mahler's theory and present more details and specificity about her first two phases.

Overview of Margaret Mahler's Research

Margaret Mahler's groundbreaking work was an integration of systematically looking at clinical data of infants, mothers and the mother-infant relationship. She was first a pediatrician (Brandell, 2010) who then moved into the field of psychoanalysis

where she followed the ideas of Freud and Winnicott on infant development and used theirs and others theorists' ideas to guide her in the study of infant behavior. Mahler was one of the first to systematically integrate psychoanalytic theory and clinical work from a longitudinal standpoint (Gergely, 2000). After years of working with children with autism and psychotic disorders, Mahler decided to move to working with normally developing children, mothers and their relationships in the nursery that she created. She created a laboratory setting that successfully replicated a naturalistic setting of a nursery and she along with a staff of researchers would observe and systematically record the behaviors of children and their mothers. The nursery included one-way mirrors for researchers to continuously observe mothers and children without their knowing. There were observers who were present with the mother and children, and there were participants who interacted with the mothers and children. Mahler and her researchers documented the behaviors carefully that they observed over the years and created the theory of the infant's separation-individuation process (Mahler, Pine & Bergman, 1975). Mahler explains that she did not observe the infant during the developmental period of the first two phases of her theory mainly because of the difficult nature of creating a reliable study with easily read observations and data (Mahler, 1974). In 1975 Mahler along with Fred Pine and Anni Bergman published The Psychological Birth of the Human Infant where they detailed all the aspects of their study, their theory, five different case studies of the children they observed and followed and Mahler's own reflections on the developmental process. In a review of the book, Anne-Marie Sandler (1976) speaks of their work as being the most comprehensive modification of psychoanalytic child development theory since Freud's 'Three Essays' in 1905.

The book (Mahler, Pine & Bergman, 1975) provides a wealth of clinical examples that explain the theory that emerged out of this data. Blanck and Blank (1972) point out that Mahler published many papers by herself (1958, 1974, 1979) and with others (Mahler & Furer, 1963, 1968; Mahler & LaPerriere, 1965, Pine & Furer 1963). Instead of just publishing a volume of her collected works she did the more intricate and demanding task of publishing a book that restates, integrates and organizes her theory, confirming her theory through her clinical material using research and experimental methodology.

Theoretical Evolution of Mahler's Theory

As mentioned above, Mahler's theory was highly influenced by Freud and other contemporaries and theorists that preceded her. Mahler's autistic phase was seen as corresponding to Freud's idea of primary narcissism, Freud's comparison of the 0-4 week old infant to the self sustained bird's egg and his use of the word autism to describe the newborn infant (Blanck & Blanck, 1972). It is evident that Freud's ideas permeated Margaret Mahler's theoretical infant formulations as she names her earliest infant phase, the normal autistic phase (Brandell, 2010; Tustin, 1994). A distinction, however, between Mahler and Freud is that Mahler made a shift from looking at the infant solely from the standpoint of the development of the libido and Freud's structural theory to object relations theory emphasizing the relationship between the mother and the infant (Brandell, 2010; Pine, 2004).

Mahler's psychoanalytic work began with the study of infants and children with psychopathology (Blanck & Blanck, 1972; Brody, 1982, Pine 2004). She felt that these infants were born without the capacity to use or utilize the mother for homeostasis as she hypothesized that the human libidinal object was lost in these children. Mahler developed

her theories after Kanner's work on autism became widespread and his description of infantile autism was being acknowledged (Brody, 1982). Mahler saw autism as a psychotic defense against a child's need for symbiosis with the mother and that the autism was the symbiotic origins of infantile psychosis (Mahler and Furer, 1968). As written in Blanck and Blanck (1972) Mahler saw the psychotic symbiotic child as constitutionally having distortions in their ability to fuse with the mother, something that was essential in her view on normal development. Mahler's early work with abnormal children and this population greatly influenced her theory and contributed to her understanding of the normal autistic and normal symbiotic phases of development in normal children and infants. Much of her theory of normally and abnormally developing infants and children is also based on an integration of the work of Hartman, Jacobson, and Spitz (Blanck & Blanck, 1972).

Mahler was influenced by Jacobson's perspective as described by Blanck and Blanck (1972). Jacobson's theory of the beginning of infant life describes how the self and object representations of the infant have merged and how, during each month of infant life a gradual separateness occurs. Jacobson explains how prior to separateness, there is little awareness of the self and object (Blanck & Blanck, 1972). This view strongly influences and complements Mahler's theory and view of this early stage of life.

Another psychoanalytic theory that differs from Mahler is Melanie Klein. Melanie Klein and Mahler saw the newborn infant in quite different ways. Mahler saw the infant as objectless in their 'autistic' shell, unable to introject objects since objects are not yet perceived. Klein saw the infant as having object representation and object fantasies from

the beginning of infant life. The ego is developed and driven from birth on to form object relationships and uses introjection as the earliest form of object relatedness.

Brody and Mahoney (1964) try to clarify the concept of introjection as the “precipitate that makes up the ego” and refer to the autistic phase, where the infant is not able to differentiate between their needs and objects. They explain the symbiotic phase as the beginning of the awareness of the infant of the object, although the differentiation between the need and the object does not yet occur.

Below is a more detailed analysis of the concepts and ideas of Mahler’s normal autistic and normal symbiotic phases of infant development.

Normal autistic phase.

The normal autistic phase is characterized by the infant’s sleeplike state and a markedly increased proportion of sleep compared to their state of arousal. The infant wakes from the press of internal needs and goes back to sleep when those needs are satisfied. The infant is relatively unresponsiveness to external stimuli, because of the infants ‘quasi solid stimulus barrier’ or ‘autistic shell’ that prevent the external stimulation from infiltrating the infant’s awareness (Mahler and Furer, 1968). This phase is characterized by the lack of responsiveness to external stimulation and the absence of cathexis (Fajardo, 1988). Mahler quotes Wolff (1959) and his reference to ‘alert inactivity’ and that there are times that the infant is somewhat responsive to external stimuli during this phase. However, for the majority of the time, the infant has an inward focus and is in a continuous state of its inner experience, satisfying its needs and achieving internal physiological homeostasis (Mahler, 1979; Brandell, 2010). At birth the infant is objectless, with the inability to relate to objects; however, through their

progression of the normal autistic phase there is a gradual emergence into the symbiotic phase (Pine 2004). These concepts have been used to metaphorically conceptualize the beginning weeks of the infant's life. The mother's ministrations and 'mothering' to the physical and internal needs of the infant are what gradually bring the newborn out of their "inborn tendency towards vegetative-splanchnic regression and into increased sensory awareness of and contact with their environment" (Maher, 1974, p. 93). For Mahler (1974), the main task of the autistic phase is the 'physiological mechanisms', the 'homeostatic equilibrium' and the cathectic shift from the inside of the body to the periphery. This shift is what marks the progression from the normal autistic phase to the normal symbiotic phase.

Mahler first introduces the concept of the normal autistic phase of development in her 1958 paper titled "Autism and Symbiosis: Two Extreme Disturbances of Identity" (Klein, 1981). Initially Mahler thought the normal autistic phase lasted for two months. However, after Benjamin's EEG findings in neonate behavior that revealed that infants beyond this time period show remarkable sensitivity to external and internal stimulation, she modified her theory to include the first three and four weeks of infant life (Benjamin, 1961; Mahler, Pine & Bergman, 1975).

Normal symbiotic phase.

Mahler's symbiotic phase development originated from her work with infants who experienced intense and premature ruptures in their mother-infant bond and regressed back to an autistic-like state (Pine, 2004). This regression, Pine explained, occurs from a separation with the infant that causes a premature awareness of the separateness of the mother, rupturing the infant's sense of oneness with the mother.

The normal symbiotic phase refers to the fusion of the infant and mother where the infant is not aware of their separateness from their mother (Brody, 1982; Loewald, 1984). Mahler chose to use the term symbiosis, a term borrowed from biology, in a metaphorical way, applying it only to the infant's relationship with the mother and not vice versa. The symbiotic relationship is not equivalent between the mother and the infant as the mother is not dependent on the infant in the way that the infant is dependent on the mother (Brandell, 2010). The infant has minimal awareness of his/her distinction between inner and outer experiences and there is a common boundary between the mother and infant, excluding the outside world (Brandell, 2010). During the time of the normal symbiotic phase, from 4 weeks of infant life to 5 months, the mother infant relationship is evolving in that the infant begins to see the mother as outside the self, as can be seen by the infant's social smile to the mother.

Mahler describes the normal symbiotic phase as the breaking of the 'autistic' shell, the infant's ability to begin to engage in a symbiotic relationship with the infant's dim awareness of the need satisfying object, the mother. The cracking of the 'autistic' shell and the formation of the uncathected stimulus barrier that is 'protective and selective' are seen as a common shield for the mother-infant pair (Mahler, 1974). As noted, Mahler discusses the shift in libidinal cathexis that is originally interoceptive or internal in the infant's body to having peripheral proprioceptive stimulation in the infant's body (Mahler & Furer, 1968). As a result of the shift, the ego begins to emerge and have the capacity to perceive its symbiotic object, the mother (Brandell, 2010). Mahler speaks about the dual-unity of the mother and infant where the infant begins to invest libido, and as discussed, there is the cathectic shift towards the periphery of the

body as opposed to inwardly (Brandell, 2010). The infant begins to organize experiences based on good/pleasurable or bad/painful experiences, which serve as the beginning of the storage of these experiences as memory traces. During this time, the mother ‘mirrors’ her infant, and there is a mutual cuing between mother and infant, a developing pattern between the two begins the process of identity formation (Blanck and Blanck, 1972; Mahler, 1979). The normal symbiotic phase is an important component of the infant’s development as it lays the groundwork for the separation-individuation phase. The behaviors of the normal symbiotic phase depict the oneness that is experienced with the mother and the infant’s experience of the self with others (Pine, 2004).

If the objectives of the normal autistic and symbiotic phases are successfully mastered, the infant will be able to gain the capacities to differentiate his/her self from other (Ekstein & Caruth, 1969). This will lay the groundwork for helping him/her to perceive those around him as separate objects and subsequently achieve “object and self representation, [and] stable identifications” (Ekstein & Caruth, 1969, p. 117).

Critique of Mahler’s Theory

Over the years there has been much criticism surrounding Mahler’s theory of infant development. Specifically, the normal autistic and normal symbiotic phases have received an abundance of criticism from many different theorists and authors for a variety of different reasons. A review of the main criticisms of Mahler’s theory will be discussed below.

One of the first major criticisms of Mahler’s stages are the names given to the different stages, namely the normal autistic phase. Critics take issue with the idea of using a term like autism, which is used to describe a severe state of pathology, to describe

normal development. Volkmar in 2000 wrote about autism and speaks about Mahler's work with psychotic and normal children, agreeing with many of her theoretical points about the psychotic population. Volkmar (2000) quotes Stern, who disagrees with her use of the normal autistic phase terminology and feels that early deficits of autistic children are not on a continuum with normally developing children. Additionally, Pine (2004) refers to criticism about the term symbiosis stating and then refuting the critique: "it is a term in the biology of mutual interdependence, a situation that might be present in an illusory way for mothers and infants but is in fact not literally the case" (Pine, 2004, p. 513). Peterfreund (1978) expresses criticism in the fact that Mahler uses the terms autistic and symbiotic to describe both normally and abnormally developing infants.

In addition to the title of Mahler's phase, she has also been criticized by others, including Peterfreund (1978), who questions the whole notion of using observations to determine the inner world and subjective experience of the infant. Peterfreund (1978) feels one can only make very rough inferences about them and he questions the overall psychoanalytic approach of using metaphors or analogies to defend psychoanalytic theories. His 1978 paper goes through many psychoanalytic characterizations of the infant marking them as incorrect and/or having no logical foundation. He thinks that the main problems of these infancy characterizations is that they are based on the phenomena of infancy and tend to adultomorphize the infant in the attempt to apply later psychopathological states to the normal infant (Peterfreund, 1978).

Another criticism of Mahler's theory is that her beginning phases did not have observational and behavioral data on the normal autistic and normal symbiotic phases to use as evidence for her proposed phases (Klein, 1981). The majority of Mahler's

observational work focused on her proposed later stages of development. Mahler explains that the theories for the first two phases were constructed from an extrapolation of more severe pathology and from other infant researchers and psychoanalytic theory (Mahler, Pine, & Bergman, 1975). Klein (1981), who is very explicit about his disagreement with Mahler's theory, expresses that the lack of data from the symbiotic phase is more concerning than that of the normal autistic phase since the symbiotic phase is the cornerstone for the next phases of her theory, namely the separation-individuation phase.

Another criticism of Mahler's theory has been on the theoretical ideas of the normal autistic phase, specifically the infant research that has been revealed about the infant's many capacities, interactions with their environment and the external world. Mahler's theory of the normal autistic phase speaks of the infant's state of being inwardly focused with little awareness or response of external stimuli. Klein (1981) quotes many researchers in different studies that revealed evidence of an infant's awareness of their environment, and their ability to respond to external stimuli that Mahler reported they do not possess. Klein (1981) is one of several authors (Brody, 1982; Peterfreund, 1978) who feel that Mahler and her co-authors (Mahler, Pine & Bergman, 1975) have not taken infant research into account when looking at the competencies of the infant's first few weeks of life.

Klein (1981) adds to his critique by explaining that Mahler and her colleagues (Mahler, Pine & Bergman, 1975) were committed to a certain theory of the second "psychological birth" of the infant and were therefore not able to be objective about new research being published about the evolving neonate that contradicted her autistic and symbiotic phases of the infant. In addition, Klein (1981) admits that Mahler's theory is

based on Freud thinking; however, Freud's use of the word "hatred" to express infants' displeasure with stimuli and its usage in relation to objects, has been demonstrated to be false. Therefore as a result of Klein's dismissal of Freud's theory, he dismisses certain aspects of Mahler's theory as well.

The disagreements between Mahler and Stern stem from their theoretical disagreements about the initial capacities of the infant. Stern argues that the infant is developing their own sense of self from birth whereas Mahler's phases discuss the infant's slow evolution of their sense of self as separate from the mother and others. Stern does not view the infant's developmental tasks as a separation from the mother but as a relationship with others, including the mother (Bader, 2011). He discounts both Mahler's normal autistic and normal symbiotic phases (Glenn, 1991).

Stern focuses on the large amount of infant research that has revealed the early capabilities and perceptive abilities of the infant. Stern titles this early stage of development the emergent self and holds that infants are seeking external stimulation (Glenn, 1991). There have been few who have refuted the claims and statements of Stern as many psychoanalysts seem to have embraced his work and writings (Kaplan, 1987).

Modification of Mahler's Theory and a Response to Criticism

The following is the context and modification of aspects of Mahler's theory. Later in Mahler's career, she changed several aspects of her normal autistic and symbiotic phases and theory. One hypothesis for Mahler's change could be a response to the strong criticism and outburst of infant research that was expressed in strong contrast to aspects of her theory. Although there are no official writings from Mahler herself that communicates this change, others note that she took back her theory of the normal

autistic phase and changed aspects of her symbiotic phase (Tustin, 1994, Bergman, 2000, Gergely, 2000). Tustin (1994) discusses Mahler's retraction of her ideas of the normal autism phase, prior to Mahler's death at a lecture delivered in Paris (Tustin, 1994). Blanck and Blanck (1994) disagree with Mahler's retraction of the first phase of her theory. They propose the change that the phase be left unnamed and in its descriptive form. Lowald (1984) has expressed that the first stage be renamed 'quasi-autistic' because of Mahler's inconsistency in her formulations of this phase.

In 2000, Anni Bergman wrote about Mahler's retraction of the first phase, and Bergman and her research group offers another name for this phase called the "beginning of the emerging dyad." Bergman explains the proposed name change as a way of seeing this early phase as characterized by the shift in the infant's mother's perception, and the "mental representation and fantasy life" of the infant and her feelings of being a mother (Bergman, 2000, p. 62). Grotstein (1982) proposes to change the name of the phase to "the stage of autistic relatedness" in which the infant can be seen as a Siamese twin with his/her mother; there are two heads and one body but the infant is sitting on the mother's lap and cannot see the mother, whereas the mother can see the baby (Grotstein, 1982, p. 65). Grotstein (1982) also proposes that the autistic relatedness phase would then be the preceding (and first) stage before the symbiotic phase and uses the image of the infant riding on the mother's back, where the bodies are fused but the heads are separate. Stern (1985) accounts that through personal communication with Mahler in 1983 she proposed renaming the normal autistic phase "awakenings" or "emergence", a term very similar to what Stern himself calls this stage.

In a more recent article by Pine (2004), he revisits Mahler's theory and provides several modification and explanations of some of the shifts in her theory since their seminal work in 1975. He admits that Mahler was not correct about all aspects of her theory but that her mistakes do not invalidate her contributions. He reminds his readers that the preverbal state for most psychoanalytic developmental theory remain a supposition (Pine, 2004). When speaking about the normal autistic phase, Pine articulates that Mahler did not think that the infant was fixated in the same way that an autistic child can become fixated and that the term was used as a descriptive term. In addition, he explains that the focus of her theory was not on the autistic and symbiotic phases, as they were a relatively insignificant part. He explains that they were a means of emphasizing the inwardness of the infant to contrast the waking in the symbiotic phase (Pine, 2004). Pine (2004) expresses that when infant research did reveal the capacities of the infant, Mahler revised her theory and took back the normal autistic phase. Additionally, Pine (2004) points out that new research data on infants does not contradict Mahler's ideas but rather enhances her theory. Pine goes on to say that he does not feel that the autistic phase should be let go of in its entirety. He refers to Wolff's term "alert inactivity," that states that the focus should be on moments of different behaviors, i.e. moments of "alert inactivity" and moments of an autistic quality of having an inward focus. Pine interprets new infant data in this manner; he believes the infant has moments of differentiation and moments of no awareness of differentiation. Pine (2004) applies Erikson's (1950) approach to different phases and stages in that there are different aspects being identified at each stage and the symbiotic phase has aspects of non-differentiation with the presence of aspects of differentiation. Lastly, Pine expressed that the symbiotic phase can only be

disproven by the absence of “merger-like phenomenon” not by differentiated experiences that can be shown in the infant.

In reaction to criticism of Mahler, Gergely (2000) writes a proposed new approach to her theory from a modern cognitive developmental perspective. He believes that the retraction of aspects of Mahler’s theory was justified but at the same time reexamines aspects of her theory as he sees “the richness of empirical insight and the subtlety of theoretical formulations that characterize her work” (Gergely, 2000, p. 1199). Gergely (2000) agrees that it can be argued that parts of his reconsideration can be seen as a wide departure from her theory. When discussing the normal autistic phase, Gergely discussed Piaget’s primary circular reactions and how the infant does engage in “cyclic repetitions of body-centered activities...with response contingent stimulation in the infant’s proximal environment” (Gergely, 2000, p. 1203-4). This means that the infant is more concerned with responses of their own motor activity and is uninterested in stimulation from their external environment (Gergely, 2000). Gergely (2000) explained that Mahler seemed to underestimate the information processing capacities of the ego apparatus and the ability of the infant to organize stimuli belonging to the self. Gergely’s discussion of the normal symbiotic phase is in the context of “the homeostatic affect-regulative function of the early maternal environment” (Gergely, 2000, p. 1206) that was shown in recent studies as the infant’s internalization of the mother’s affect mirroring of the infant. Gergely and his colleagues have explored the social biofeedback theory of parental affect mirroring (see Gergely and Watson, 1996). Overall Gergely argues that Mahler’s theory can imply an opened interactive system; however, her commitment to and integration of modern object relations and to Freud’s metapsychological and instinct

theory portrays her theory as a closed system, which can be seen as theoretically compromising and opened to great criticism.

Infant Observation Theory and Method

The following section will discuss the evolution of infant observation and provide a description of the program from which the data source for this dissertation project was taken, the Anni Bergman Parent Infant Training Program.

The psychoanalytic infant observation method began as early as 1948 when it was introduced by Esther Bick as part of the child psychotherapist-training course at the Tavistock Clinic in England (Bick, 1964). In 1960 Mrs. Bick incorporated infant observation as part of the curriculum at the Institute of Psycho-Analysis in London for all first year students. An infant observation consists of a therapist observing an infant and their family, preferably from birth by visiting the infant in the infant's home once a week for one hour. The Esther Bick model of infant observations consisted of having weekly visits during the first two years of the infant's life (Reid, 1997). Different training programs have incorporated different amounts of time that the infant is followed and observed. The therapist is encouraged to meet with the parents before the infant is born to begin the relationship. The therapist/observer is also instructed to take notes following the observations on what was seen and felt during the observation. There are parallels between the notes of observation sessions and psychoanalytic session notes. Both notes are not taken during therapy or observation sessions and the method of writing the process notes are similar in that one is instructed to write what one can remember from the session without any specific rubric. The observers are taught to focus on what is seen

and not make any premature formulations about what is occurring during the observations (Reid, 1997).

Mrs. Bick noted several reasons why she felt it was important to include infant observation as part of the main curriculum of the institute. Her reasons included giving the therapists an infantile experience of their child patients, helping the therapist understand the non-verbal behavior and play of a child, when a child cannot speak or play, and helping the therapist understand the mother's account of the child's developmental history (Bick, 1964). Bick also emphasized that the opportunity to observe an infant from birth in their natural home setting provided an added component of seeing the emergence of relationships the infant develops with different people in his or her life. Bick understood the importance of the mother relationship. Martha Harris, who took over the teachings of Bick at the Tavistock Clinic, has built upon the concepts that Bick discusses, including using the infant observation method as a training tool and the importance of a clinician's observing without comment (Klauber, 2012). Infant observation is a valuable means and link for many types and areas of clinical work.

Since Esther Bick introduced infant observation methods and theory, infant observation programs have been developed as part of a separate program for psychoanalytic institutes throughout the world. The observer is seen as a participant observer since it can be difficult to come and watch the mother and infant without interacting and talking with the dyad. The observers are instructed to tell the mothers and caretakers to do what they would normally do if no one were there; however, this can be difficult and the hour will obviously not be identical to one in which the observer is not present. Bick (1964) notes that it is important for the observer to feel themselves inside

the family in order to experience the emotional impact of the experience. In many ways the transference and countertransference issues that arise for the observer are a strong indication of some of the dynamics of the mother infant dyad. Infant-parent training programs have a once weekly seminar where the observations are read and discussed in a group with trained supervisors in order to gain a better understanding of the interaction between the mother, infant, observer and anyone else that may be present during the observation.

The Anni Bergman Parent Infant Training Program in New York, NY is one such infant training program for analysts or advanced analytic candidates who are seeking to work with parents and infants (Bergman, et al., 2010). The first year of the program is devoted to infant observations where students make weekly visits to a parent-infant dyad and record the observations after each visit. The data for this dissertation came from the observation narratives written by participants in the first year of this program. The second year of training includes research on infant development, lectures and discussions by the faculty of the program and scholarly visiting lecturers on infant psychoanalytic theory. In the final year of the program the participants focus on the clinical application of the first two years of training and choose a clinical setting appropriate to put into practice the theory, concepts and techniques that they have learned (Bergman, et al., 2010).

Rationale For The Present Study

In his book Growth and Risk in Infancy (1975), Stephen Briggs writes about the challenge of empirically studying infants from a psychoanalytic perspective because of the complexity and clandestine nature of the internal emotional process of the infant. He explained that psychoanalytic theory has therefore developed different models of infancy

that differ significantly (Briggs, 1997). As a result of this difference, one of his goals has been to bridge developmental and psychoanalytic theories in order to understand how infants are able to adapt to their particular surroundings, and therefore gain a better understanding of their developmental process. Briggs discusses the lack of a bridge between clinical material and psychoanalytic theory that attempts to connect available clinical data to the existing theory. The goal of this project is to try and create a link between existing theoretical analytic literature and clinical material, specifically in this case, infant observation. The methodical and established method of infant observation is a data set that is rich with the experiences of the infant, mother and the mother infant relationship.

For the purposes of this project, even though Mahler retracted aspects of her theory, her original theoretical constructs are still being used and adapted into operationalized statements. By systematically quantifying the behaviors of the original theory and comparing them to current clinical data, the possibility of a validation of Mahler's original ideas can emerge. The importance of including this data is because an aspect of this project will be to compare the original theory that Mahler constructed and outlined in her writings, particularly in The Psychological Birth of the Human Infant (1975) with the current infant data. There is a large difference between the means by which Mahler collected the data for her theory and the clinical data being used in this study. Mahler worked in a playroom setting where mothers brought their infants several mornings a week. It was in this context that Mahler and her research team studied infant development. The observations being used in this study, which is described in the methods section, occurred in the natural setting of infant, as the observer visited the

families' home once a week. Therefore, an aspect of this study is applying Mahler's theory to infant observations.

This study aims to gain a better understanding of the retractions that Mahler made to her theory in addition to a greater understanding to what aspects of her theory can be validated through infant observations.

CHAPTER III

METHOD

Archival Data Description

The data used for this study were observations written into narratives by observers of parent infant dyads. The data is archival from the Anni Bergman Parent Infant Training Program in New York, NY and has already been collected by the institution for educational and research purposes. The researcher has obtained permission to use the data from the Anni Bergman Parent Infant Training Program and received IRB approval for this dissertation. The observation narrative data has been collected by others and made available to the researcher, and all identifying information and data had been changed before being given to the researcher. The observation narratives are similar to process notes in that the observers write what they recall after observation sessions with the parent-infant dyad. They are not given any specific rubric or method of what to include or not include.

Stage One, Part One: Measure and Manual Construction Procedures

The main goal of this dissertation was the creation of a measure that comprises a compilation of items about infant and mother behaviors that relate directly to Margaret Mahler's first two phases of infant development, the normal autistic and normal symbiotic phases. The researcher went through two stages of measure construction and two stages of rating procedures and rater training as detailed below.

The researcher systematically went through Margaret Mahler's first two stages of infant development as detailed in her book The Psychological Birth of the Human Infant (1975) by Mahler, Pine and Bergman, and with the guidance of two infant parent experts,

classified each of Mahler's theoretical statements of the normal autistic and normal symbiotic phase into one of three categories of observations. These three categories were the infant, the mother, and the mother infant dyadic relationship. In general, when conceptualizing and organizing the theories on infants, many psychoanalytic theorists focus on the infant, then separately look at the mother's behaviors, thoughts and actions, and separately conceptualize the dyadic relationship. Therefore, this measure separated each of these categories when looking at Mahler's infant theory and behaviorally and operationally defined the concepts that Mahler discusses. Even though the categories influence each other, in order to gain a better understanding of how each one acts separately and affects the other categories, it was important, at least initially, to separate them.

There were various reasons why a theoretical statement was not included in the measure; including instances when the concepts or phrases that Mahler used were not quantifiable, could not be written in objective and behavioral terms and/or the concept were too complex and conceptual in nature. Each conceptual idea that could be operationally and behaviorally defined was included as an item in the measure.

The researcher and infant experts originally had 43 behavioral and objective items created from this process of going through Mahler's first two stages of infant development. The researcher and two infant experts went through these 43 items and were able to condense them to 23 items, and at a later point to 21 items. Items were condensed and merged when they overlapped with ideas in other items or when the same idea applied to more than one item. For example, originally there were three different items each concerning a particular behavior but as mentioned, were separated into the

three categories to see the mother's, infant's and general dyad's reactions and interactions. When possible, the researcher condensed many of these three categories into one item while still capturing the three categories.

After the items were condensed, a description was created explaining the item in more detail and/or explaining the concepts mentioned in the item. A scoring scale was created for each item on a Likert scale, originally from 1-7 with descriptions and anchors next to some of the points on the Likert scale explaining what it would mean if that point was chosen by a judge. Many items also included the options of N/O- which means there was no opportunity to observe and D/K- don't know, with an explanation of why that option might be chosen.

The researcher then created a manual (See Appendix A) that detailed the exact procedures for the judges to follow when scoring the items on the measure. The manual was created to specify and create an objective way for the judges to rate and score the observation narratives. The manual begins with instructions, an overview and a detailed description of the procedures for the judges. Each item was then presented with its explanation, when applicable, and the Likert scoring details were included as well, with a description for several of the 7 Likert scores or points and a description of the D/K and N/O responses that were possible to choose on that item. After each item, the manual provides at least one example of an excerpt from an infant observation narrative and instructions and an explanation of how to score that excerpt. The infant experts reviewed the manual before the researcher proceeded to train the judges.

Stage One, Part Two: Judge Training and Scoring Procedures

As mentioned above, a manual was created (see Appendix A) with directions for how the judges were to read the observation narratives and rate them on the measure. Three independent judges, who were doctoral candidates in Psychology, were used to obtain the reliability for the measure created. The researcher formatted the measure on Google Drive and included the directions, items, item descriptions and a Likert scale of scoring choices for the measure. The judges were instructed to read the manual and one observation narrative independently; then the researcher trained the judges as a group by reviewing the scores and discussing how to score the observation narratives on the 23-item measure. The scoring was compiled using the Google Drive form that the researcher created, and the judges submitted their responses electronically. The three judges then independently scored two more observation narratives, reviewed the responses together, spoke about the discrepancies and a consensus was reached for how the judges should score future narratives. In stage one the judges were trained based on these three observation narratives. The scores used in the analysis were the original scores given by the judges before a consensus was reached.

The judges independently scored another 19 observation narratives independently. Interclass Correlational Reliability was collected for the 22 scored observation narratives for the 23 items in the measure. From the 23 items where reliability was computed there were numerous items where the reliability results were under .8, (see Results Section below for more details). It was therefore decided by the dissertation committee that the researcher should revise the items and manual because of the low reliability obtained. Table 3.1 outlines the parent infant dyads were used, the weeks of infant life that was scored and the total number of observations for each dyad scored.

TABLE 3.1
Stage One, Part Two observation narratives used

Parent Infant Dyad	Observation Narrative Used to Obtain Reliability Among Judges Concurrent with Weeks of Infant Life	Total Observation Narratives Used
A	2, 3, 4, 5, 6, 8, 9, 10, 14	9
B	1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 12	11
C	1	1
D	4	1
	Total Number of Observations Used to Obtain Reliability:	22

Stage Two, Part One: Measure and Manual Construction Procedures

After the reliability of the first 21 observation narrative ratings was not sufficiently high, the researcher went back and revised all the items and Likert scale responses in the measure and the manual. The researcher went through the original 23 items with a statistician who was not directly related to the infant child project and revised the items and scoring system in an effort to make the measure more objective and behaviorally defined and obtain a higher reliability. The scoring system was changed from a 7-point Likert scale to a 3-point Likert scale. Changes also incorporated the inclusion of a description or anchor next to every possible point or score that could be given for an item and the exclusion of the option D/K (don't know) from the Likert scale.

After the researcher went over all items and the manual with this statistician and then with the two infant experts, it was decided to remove two items from the measure, and the final number of items in the measure was twenty-one. The two items altered from the original measure was item 11, which was removed, and item 20, was combined with item 21. To remain consistent and for clarification purposes, the original numbering of

the items was kept and item 11 and 20 were omitted. There were many disagreements between how the statistician felt the measure and manual should be worded and how the infant experts thought they should be worded. The researcher worked at creating a balance and consensus between the different opinions concerning language and approach to the measure and manual.

Stage Two, Part Two: Judge Training and Scoring Procedures

After updating the measure and manual, the researcher retrained the same three judges to rate the observations again with the new measure and manual. The judge training procedures were more detailed than in Stage One, Part Two in that the judges independently scored and discussed discrepancies on eight observations as opposed to only three observations, as was previously done.

Stage two training procedures were as follows: the three judges independently read the manual and scored one observation narrative and then discussed their response discrepancies and a consensus was achieved for how they should each score the 21 items on future observation narratives. The same procedure was completed for a second observation, then three more observations were independently scored, and discussed, followed by another three, totaling 8 observation narratives. As the changes were agreed upon, modifications were made to the measure and manual.

Finally, the three judges read and independently scored another 13 infant observation narratives on the 21-item measure, however they did not review the scoring discrepancies or results for the last 13 observation narratives.

Other differences between the two stages of judge training and scoring procedures was that during Stage Two, Part Two of rating procedures the decision was made to judge

and score observation narratives from 0-5 months of infant life as opposed to stopping at the third month of infant life. The reason for this was to include the full developmental time period of the normal autistic and normal symbiotic phases of Mahler's theory. Therefore Stage Two, Part Two consisted of a sampling of observation narratives from 0-5 months. This included the first four weeks of the infant's life and then consequently averaging every other week until the infant was 20 weeks old as opposed to consecutive observations from the infant's first three months of life, as done previously. As seen in Table 3.2 below, the 21 observations scored consisted of 10 observation narratives from one observer of an infant-parent dyad and the other 11 were from a different observer of a different infant-parent dyad both spanning the first five months of infant life.

Table 3.2
Stage Two, Part Two observation narratives used

Infant	Observation Narrative Weeks Used to Obtain Reliability Among Judges	Total Observation Narratives Used
B	1, 2, 3, 4, 5, 7, 9, 11, 14, 17, 20	11
E	1, 2, 3, 4, 5, 8, 12, 15, 17, 20	10
	Total Number of Observations Used to Obtain Reliability:	21

Item Construction

As mentioned above in the Measure and Manual Construction Procedures section, the items for the measure were constructed directly from Mahler's theory from the book The Psychological Birth of the Human Infant (1975) by Mahler, Pine and Bergman and were developed into operationalized statements. Below are all of the items in the measure, quoted in a text box and then item explanations are provided as to how the item

relates back to Mahler's theory and how the items were derived. Many of the ideas discussed in the items are theories and concepts that were discussed in the literature review above, and when necessary, the reader will be directed to look at the explanation of the theory in the literature review.

Item 1: When awake, the infant is in a sleeplike state relative to the amount of time being in an alert or aroused state.

Item 1: A hallmark of Mahler's normal autistic phase is the "sleeplike states of the newborn and very young infant" and how it "far outweighs the states of arousal" (Mahler, Pine & Bergman, 1975, p. 41). When the infant is awake, they are in a low state of arousal, neither fully asleep nor fully awake.

Item 2: The infant responds to external stimuli.

Item 2: The basis of Mahler's theory for the normal autistic phase is the infant's lack of or minimal response to external stimuli as she writes of the "relative absence of cathexis of external (especially distance-perceptual) stimuli" (Mahler, Pine & Bergman, 1975, p. 41). That is based in Freud's theory of the stimulus barrier, and Mahler explains, "the infant's inborn unresponsiveness to outside stimulus is clearest" during this early time infant life. Conversely, as the infant gets older, moving into the normal symbiotic phase and beyond, they become more responsive to external stimuli.

Item 3: The infant responds to internal stimuli.

Item 3: This source of this item is the same as Item 2, as according to Mahler, in the beginning of infant life, infants are aware of their internal needs almost to the exclusion

of their external needs. As they grow up they become more aware of stimuli, where they are coming from and they become more aware and responsive to external stimuli.

Item 4: The infant wakes primarily due to hunger or other physical discomforts.

Item 4: According to Mahler, during the normal autistic phase the infant's actions and responses are centered on their internal needs and internal stimulations. Therefore if the infant wakes up, it would be caused by internal needs that would include hunger and physical discomforts.

Item 5: The infant falls asleep when hunger and other internal and external discomforts are relieved.

Item 5: Similar to Item 4, the infant will fall asleep when these internal and external discomforts are relieved.

Item 6: The mother/caretaker's interactions with the infant are primarily through physical handling of and caregiving to the infant.

Item 6: Mahler discusses how the mother's mothering is what slowly brings the infant out of the vegetative, regressive state and the mother's physical ministrations of the infant are what aid in the infant's awareness of external stimuli. This item looks at the physical way that the mother cares for the infant.

Item 7: Mother/caregiver's verbalizations and concerns are primarily about the infant's physical needs, discomforts, and her attempts to help the infant achieve a state of comfort, calmness and regulation. This includes the mother speaking to the infant as well as speaking to others about this.

Item 7: The theoretical basis for this item is the same as item 6, however here we are looking at the mother's preoccupations with the infant as seen through her verbalizations to the infant or to other individuals that are in the room.

Item 8: Infant shows interest and can focus on their hands and feet.

Item 8: It is proposed by Mahler that the infant's interest in their hands and feet can show some of the shift in their libidinal cathexis from the center of the body to the periphery, which includes their hands and feet.

Item 9: Mother/caregiver responds to infant's expression of a need by physically handling the infant and communicating her presence to the infant through visual, auditory and/or tactile response.

Item 9: This item is also connected to the theoretical basis proposed in item 6 where Mahler is concerned with the way that the mother is communicating her presence to the infant and the way that she cares for her infant.

Item 10: When the mother/caregiver is responding to the infant's needs the following sequence occurs: (a) the infant notices that mother/caregiver is beginning to respond to his/her need and (b) the infant pauses, looks to the mother/caregiver, and/or the infant begins to calm down.

Item 10: This item is referring to the normal symbiotic phase and when the infant is beginning to see the mother as a somewhat separate object thereby 'noticing' the mother and waiting and/or calming down when they become aware of the mother's response.

Item 12: The infant visually tracks objects of interest (i.e. a bottle, toy, people).

Item 12: The infant's ability to turn their head and track objects reveals capacities of the infant and their possible response to external stimuli, marking the beginning of the normal symbiotic phase.

Item 13: While awake, the infant demonstrates sustained periods of "alert inactivity" indicating awareness of and response to external activity and stimulation.

Item 13: 'Alert inactivity' is a concept borrowed from Wolff (1959) whose observation of five infants demonstrated responsiveness from infants at the normal autistic phase. As the infant gets older, the ratio of the infant's 'alert inactivity' changes and becomes more frequent.

Item 14: The infant demonstrates clearly differentiated expressions of emotional states in response to external and internal stimulation.

Item 14: The root of this item is the infant's differentiation between a 'pleasurable/good' quality and a 'painful/bad' quality of experience. As the infant gets older their emotional expressions get more differentiated and clearer. For the purposes of this question, the good and bad qualities of experiences of the infant were transformed into the way the infant reveals variation or lack of variation in the expressions of their experience.

Item 15: The mother/caregiver and infant engage in periods of mutuality; this may include gazing into each other's eyes or vocalizing back and forth between the infant and mother/caregiver. Intense positive affect is demonstrated during these periods by both mother/caregiver and infant, and both mother/caregiver and infant are responding to each other.

Item 15: This item is an important aspect of the normal symbiotic phase and the infant's

‘dim’ awareness of the mother as the object tending to their needs. This item is based on the concept of the infant and mother as an “omnipotent system- a dual unity with one common boundary” (Mahler, Pine & Bergman, p. 44). The literature review above discusses these concepts in more detail.

Item 16: The mother/caregiver comments about the infant's increased awareness of and interest in the external world including inanimate objects and people.

Item 16: This item reflects the mother’s observations of the infant’s awareness of external stimulation, an indication that the ‘autistic’ shell is beginning to crack (Mahler, Pine & Bergman), see literature review above for a more detailed explanation.

Item 17: During periods of active mutuality between the mother/caregiver and the infant, they demonstrate a relative lack of interest in and responsiveness to external stimulation, and seem intensely engaged in the exchange between each other.

Item 17: Periods of mutuality between the mother and infant refers to the stimulus barrier that begins to form and “begins to form and to envelop the symbiotic orbit of the mother-child dual unity” (Mahler, Pine & Bergman, p. 44).

Item 18: Mother/caregiver or infant initiates affectively positive interactions with the other and the other responds leading to mutually pleasurable exchanges.

Item 18: This item marks another aspect of the normal symbiotic phase, the “fusion with the representation of the mother and, in particular, the delusion of a common boundary between two physically separate individuals” (Mahler, Pine & Bergman, p. 44). The infant’s ability to reciprocate positive exchanges with the mother shows this capacity.

Item 19: When the mother/caregiver holds the infant, they each adjust and mold to each other’s bodies. The mother/caregiver and the infant’s bodies seem to adjust to each other’s bodies and mold and melt into each other.

Item 19: The molding behavior of the mother and infant reflects the infant's feelings towards the mother as being almost one with the mother and in the same 'orbit' with her. Mahler also speaks about the molding behavior as being a reflection of the mother having contact with much of the surface area of the infant.

Item 21: Mother/caregiver positions infant facing her to promote eye contact so that they are looking at each other while feeding, talking, singing or other activities together. This position allows for the infant to look at the mother/caregiver's face and hold eye contact during these experiences.

Item 21: This item is focusing on the mother promoting mutual gaze between her and the infant and reflects a merger of the infant with the mother's face. Mahler talks about when the mother allows the infant to face her, and eye contact is promoted, symbiosis has the potential to be most optimal (Mahler, Pine & Bergman, p. 44).

Item 22: The infant shows interest in and initiates touching and exploring mother/caregiver's body, hands, face and/or objects on the mother when being feed or other times during which the infant is in physical proximity to the mother.

Item 22: This item is referring to the later part of the normal symbiotic phase when the infant is able to see the mother as separate and to see a differentiation with the mother and therefore has interest in her as separate from him or herself. The infant first takes him or herself as a love object, and then takes the mother. The infant needs to have a perception of need being satisfied from the outside to take in the mother.

Item 23: Infant smiles and/or interacts with observer and/or other individuals as well as with mother/caregiver. Infant is reacting, which can be seen as the infant looking, smiling, whimpering and/or cooing at the observer and/or other individual.

Item 23: The infant’s ability to smile at the mother during the normal symbiotic phase of development shows the infant beginning to see the mother as outside the self. This item refers to the infant reacting or interacting with someone else, marking the end of the normal symbiotic phase and the infant’s beginning ability to differentiation other from the mother.

Analysis Procedures

As discussed in the rating procedure, there were two stages for both the Measure and Manual Construction and Judge Training and Scoring. Three phases of analyses were computed. The first statistical analysis phase was done after Stage One, Part Two of Judge Training and Scoring of 21 observations narratives using the 23 items in the measure (see Table 3.1 above). The second phase of analysis was done during the Stage Two, Part Two of Judge Training and Scoring on the data from the 8 observation narratives scores prior to the judges discussing their discrepancies and coming to a consensus. The third phase of analysis was conducted after Stage Two Part Two, on the last 13 observations that the judges independently scored after being trained and reviewing results from the previous set of observation narratives that were scored.

When computing the results, N/O (used in both stages of judging and scoring) and D/K (used only in Stage One Part Two) were removed from the data set in order not to affect the analysis results.

Table 3.3
Phases of analysis by time analysis was conducted and particular data analyzed

3 Phases of Results	When Analysis was Conducted	Which Data was Analyzed
Phase 1	After Stage One, Part Two of Judge Training and Scoring	22 observation narratives in Table 3.1

Table 3.3 (Continued)

Phase 2	During Stage Two, Part Two of Judge Training and Scoring	First 8 observation narratives taken from Table 3.2
Phase 3	After Stage Two, Part Two of Judge Training and Scoring	Last 13 observation narratives taken from Table 3.2

Statistical Analyses used in Data Analysis

Inter Rater Reliability

In order to assess the inter-rater reliability on each item the three judges' results were analyzed using the SPSS statistics program version 19, reliability program. The following options were chosen: coefficient alpha, and interclass correlation coefficient, a two way mixed model on consistency, according to McGraw and Wong (1996) in which subjects were random and raters/judges were fixed. The rationale for using alpha is that it is a function of the average correlation among the judges and the number of judges, therefore revealing that if the judges agree and/or there are many judges, the correlation increases.

Factor Analysis

Factor analysis could not be carried out because of missing data.

CHAPTER IV

RESULTS

This chapter will present the results of this study. The results pertaining to each phase of analysis referred to in the methods section will be described.

Phase One Results

The first statistical analysis phase was completed after the judges received the first training and scored 22 observations on the 23-item measure. The 22 observation narratives used for this analysis are listed in Table 3.1.

The interclass correlation results for these 22 observation narratives were as follows:

Table 4.1
Phase one reliability results by items in measure

Item #	Coefficient Alpha	Single Measure
1	.761	.541
2	.950	.864
3	.842	.639
4	.962	.895
5	.768	.525
6	.602	.335
7	.540	.281
8	.826	.613
9	.653	.386
10	.721	.463
11	-.857	-.300
12	.932	.821
13	.639	.371
14	.539	.280
15	.883	.716
16	.918	.790
17	.893	.735
18	.952	.869
19	.735	.480

Table 4.1 (Continued)

20	.730	.473
21	.699	.436
22	.760	.514
23	.979	.959

The coefficient alpha was .70 or higher for 15 of the 23 items. This indicates sufficient reliability for all three judges when scoring these 15 items. The single measure statistic, which is the mean of the correlations among the judges and the ability for one judge to represent the scores of three judges going forward, was above .70 for 8 of the 23 items. This means that one judge can represent all 3 judges for these 8 items. It is important to note that there will always be fewer single measure correlations than average measure correlations. Since the single measure correlations were sufficient for only 8 items, it was decided to revise the manual and measure, retrain the judges on the new manual and measure, have the judges rescore the items and rerun the statistics to try and obtain higher reliability on more items. The purpose of phase one was to obtain feedback on the measure through the judges scoring and as a result, to make the revisions mentioned.

Phase Two Results

The second statistical analysis phase was conducted during Stage Two, Part Two, of Judge Training and Scoring, after the measure and manual were revised. The judges scored eight observations using the revised manual, and the scores from these eight observations are what make up the analysis and results for phase two. The 8 observation

narratives used for this analysis were taken from Table 3.2. The following reliability results of the 8 scored observations on the 21 items measure were obtained as see in Table 4.2.

Table 4.2
Phase two reliability results by items in measure

Item #	Coefficient Alpha	Single Measure
1	.228	.090
2	.952	.870
3	.929	.813
4	1.00	1.00
5	.874	.698
6	-.333	-.143
7	.703	.441
8	.938	.833
9	----	----
10	.869	.689
12	.950	.864
13	.754	.506
14	.459	.220
15	.857	.667
16	.777	.537
17	.941	.842
18	.837	.632
19	.829	.618
21	.780	.541
22	----	----
23	.906	.763

Phase Two coefficient alpha results were .70 or higher for 15 of the 21 items. It was not possible to compute the reliability for two of the items because of missing data from N/O (no opportunity) results. The single measure statistic results were above .7 for 8 of the 21 items; and therefore one judge can represent the other judges on scoring these 8 items moving forward on the revised measure.

Phase Three Results

Phase Three results are being looked at as the final phase and statistical analysis that will be interpreted in the discussion section. Phase three of analysis was conducted after Stage Two Part Two of Judge Training and Scoring Procedures, on the last 13 observation narratives and from two different infant-parent dyads, as seen in Table 3.2. Three observation narratives were from one dyad, infant B, and included weeks 5, 17 and 20 of that infant's life and the other ten observation narratives were from another infant-parent dyad, infant E and included weeks, 1, 2, 3, 4, 5, 8, 12, 15, 17 and 20. The observations were scored on the revised 21-item measure by the judges for the final statistical analysis.

Phase Three Results had coefficient alpha of .7 or higher for the following 16 items: 1, 2, 4, 5, 8, 10, 13, 14, 15, 16, 17, 18, 19, 21, 22 and 23. There was poor item agreement that was below .7 for three items including 3, 7, 13, and reliability could not be computed for two of the items because of insufficient data. When looking at the three items that had poor agreement it is interesting to note the following: item 3 went down from Phase One (.842) to Phase Three (.636), item 7 remained relatively consistent on Phase One (.540) and Phase Three (.589) and item 13 reliability went down significantly from Phase One (.639) to Phase Three (.235) even though it was not sufficient in Phase One. It will be important to explore the reasons for this in the discussion.

The following reliability results of the 13 scored observations on the 21 items measure were as follows:

Table 4.3
Phase three reliability results by items in measure

Table 4.3 (Continued)

Item #	Coefficient Alpha	Single Measure
1	.805	.579
2	.967	.907
3	.636	.368
4	.938	.833
5	.959	.886
6	----	----
7	.589	.323
8	.828	.617
9	----	----
10	.767	.622
12	.947	.857
13	.235	.093
14	.880	.710
15	.922	.798
16	.754	.506
17	.862	.676
18	.921	.795
19	.788	.554
21	.895	.740
22	1.00	1.00
23	.978	.936

It was not possible to compute the reliability for two of the items because of missing data from N/O results. The single measure results showed that 10 of the 21 items had reliability that was above .7 interclass correlation and therefore one judge can represent the other judges on scoring observations for those items.

Overall Results

Below is a graph comparing the coefficient alpha results from all three phases.

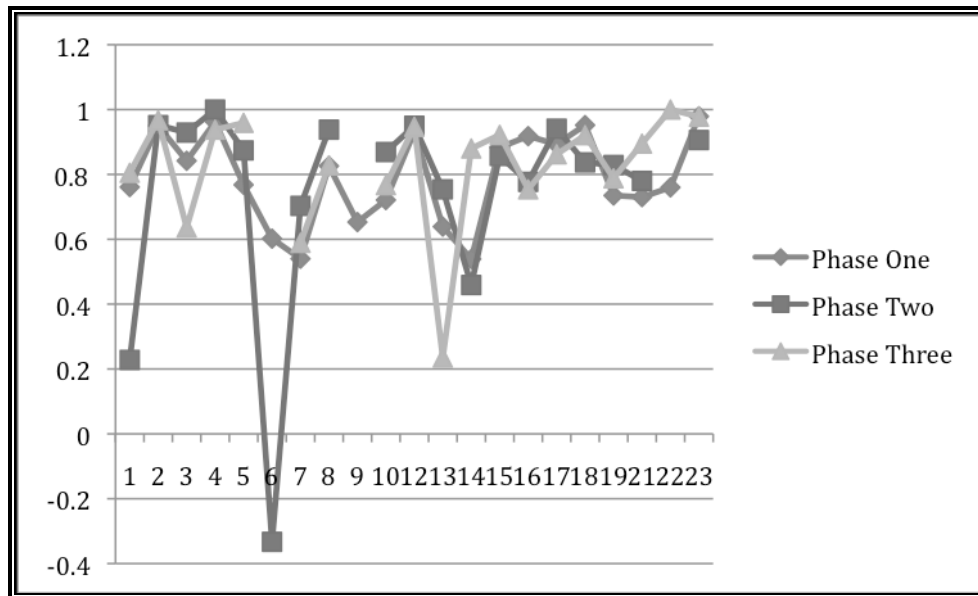


Figure 4.1. Coefficient alpha across the three phases by item number, figure form.

The following tables reflect coefficient alpha and single measure statistic reliability results for the three phases.

Table 4.4
Coefficient alpha across the three phases by item number

	Phase One	Phase Two	Phase Three
1	0.761	0.228	0.805
2	0.95	0.952	0.967
3	0.842	0.929	0.636
4	0.962	1	0.938
5	0.768	0.874	0.959
6	0.602	-0.333	----
7	0.54	0.703	0.589
8	0.826	0.938	0.828
9	0.653	----	----
10	0.721	0.869	0.767
12	0.932	0.95	0.947
13	0.639	0.754	0.235
14	0.539	0.459	0.88
15	0.883	0.857	0.922

Table 4.4 (Continued)

16	0.918	0.777	0.754
17	0.893	0.941	0.862
18	0.952	0.837	0.921
19	0.735	0.829	0.788
21	0.73	0.78	0.895
22	0.76	----	1
23	0.979	0.906	0.978

Table 4.5

Single measure reliability across the three phases by item number

	Phase One	Phase Two	Phase Three
1	.541	.090	.579
2	.864	.870	.907
3	.639	.813	.368
4	.895	1.00	.833
5	.525	.698	.886
6	.335	-.143	---
7	.281	.441	.323
8	.613	.833	.617
9	.386	----	---
10	.463	.689	.622
12	.821	.864	.857
13	.371	.506	.093
14	.280	.220	.710
15	.716	.667	.798
16	.790	.537	.506
17	.735	.842	.676
18	.869	.632	.795
19	.480	.618	.554
21	.436	.541	.740
22	.514	----	1.00
23	.959	.763	.936

CHAPTER V

DISCUSSION: INTERPRETATION OF RESULTS

Phase Three results are being looked at as the final phase and statistical analysis that will be interpreted in the discussion section because it used the most updated measure and manual. In addition, the training of the judges was most extensive in preparation for this analysis phase, therefore making it most representative of the independent scoring of the judges.

When looking at the single measure statistics and their progression over the phases it is important to note that these results are limited and based on the average measure correlations. Single measure statistics are dependent and cannot be higher than average correlation results. If more items had a higher single measure reliability result, the judges could be interchangeable with each other when moving scoring future observations.

General Reliability Results

There is quite an evolution of the alpha for the average measure correlations when looking at each phase progressively from Phase One through Phase Three. On some of the items there is an increase in the reliability among the three raters, and on some there is similar reliability showing some strong consistency in that item. When comparing Phase One and Phase Three there is either an increase in the reliability for the item (this occurred for 6 items, Items 1, 5, 14, 15, 16, 19) a decrease in the reliability of the item (this occurred for 3 items: Items 3, 13, 16) or the reliability stayed the same and was consistent when comparing the two phases of analysis (this occurred for 10 items, Items 2, 4, 7, 8, 10, 12, 17, 18, 19, 23). For two of the items, Items, 6 and 9, the reliability could

not be computed because of missing data. It will be important to look at why the reliability went down on some items and if this was a function of the item and/or measure construction, the training of the judges or may have reflected the developmental capacities of the infant being observed.

There are several explanations as to why the reliability results obtained during phase three are as high as could have been obtained for this dissertation project. Firstly, the measure that was created attempts to take abstract and difficult concepts and ideas from Mahler's theory and transform them into behavioral and objective statements while still capturing the essence of her theory. It is a challenging task to create a measure and training manual that is based on abstract and theoretical concepts, transform these concepts into objective statements, and create a manual about how to then compare the statements to relatively subjective observation narratives. The theory informs the observations and therefore the narratives have the potential to modify the theory. There are similarities with psychoanalysis where the theory and clinical work are not completely aligned. The theories are complex and there are so many factors that go into each clinical situation and observable behavior.

In addition, the process of infant observation and writing infant observation narratives is a dialectical process. It combines the complex and abstract theory of infant behavior and a sampling of the impressions and behaviors the observer has of the mother-infant dyad. The narratives are all from the perspective of the observer during a once weekly, hour-long observation in the infant's naturalistic setting. The two intertwine and inform each other but it is an imperfect system. There are issues that contribute to the imperfect system including the fact that the observation narratives and the observer's

focus are not directed at looking at the infant behaviors. In addition there is no rubric or specific structure as to how the observers are instructed to write up the infant observation narrative. In contrast, this dissertation and the creation of the measure were looking for specific infant and mother behaviors in the observation narratives. Therefore the observations could not provide everything that the measure was looking for in each observation narrative and item, making it difficult to achieve higher reliability. Another issue affecting reliability is that the observations are from the perspective of the observer and therefore involve transference and countertransference of the relationship with the observer and the mother.

Another general reliability issue is the sample size of 21 observation narratives that were scored and analyzed to compute reliability. Phase three only had thirteen observation narratives scored and there would have been a likelihood of stronger reliability if there was a larger sampling of observation narratives. Reliability would have also increased if there were more than three judges.

General Item Content and Item Construction Issues

The item content and construction issues of the items in the manual also affected reliability. Some of the items were more behavioral in nature and therefore may have been easier for the judges to score and see in the observation narratives, while other items were more abstract and difficult concepts that the measure was trying to capture. The items that are more inferential are going to be more difficult to score, have more inconsistent results and therefore have lower reliability.

The option of N/O or no opportunity in the scoring meant that there was no opportunity in the observation narrative to observe the behavior or concept the item was discussing. The N/O results were left out and not included in the statistical analyses computed because it would skew the scoring. However, there were times that the judges had full agreement on their score of N/O for an item but this agreement was not included in the reliability results. This affected the reliability because it lowered the total number of observation narratives scores included in the analysis. The following section will look at the qualitative results of the N/O responses descriptively since they were not captured in the analysis quantitatively.

Qualitative and Quantitative Results for Each Item Based on Developmental Age of Infants

The following section will individually review each item from the measure, report the single measure statistic results for each item, discuss qualitative agreement of the judges across the weeks of the infant's life and how these results relate to Mahler's theory. Only one of the infant-mother dyads that were analyzed and computed in phase three are reported here. This includes ten observations from this one infant-mother dyad ranging from week 1 to 20, and includes weeks 1, 2, 3, 4, 5, 8, 13, 15, 17 and 20. Therefore it will be important to remember that the results reported and interpreted below do not include three observation narratives that were included in the analysis of the reliability. Below you will find each item, a chart of the qualitative results of the judges for that item followed by a discussion of the results across the weeks of infant life in accordance with Mahler's theory. The agreement for the items will be discussed in terms

of the theory. Lack of agreement among judges for specific items will not be discussed unless the lack of agreement is significant and applies directly to Mahler's theory.

Item 1: When awake, the infant is in a sleeplike state relative to the amount of time being in an alert or aroused state.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 1	J1	2	3	3	2	2	1	1	2	2	1
	J2	3	3	3	2	2	2	3	1	N/O	2
	J3	2	3	3	2	2	1	2	2	N/O	1

The single measure reliability for Item 1 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 2, 3, 4, & 5, of the infant's life.

Qualitatively, the judge's agreement results reveal that the infant was in a sleeplike state for week 2 and 3 and there were periods of sleeplike and non-sleep like state during weeks 4 and 5. This is closely in line with Mahler's theory of the normal autistic phase where the infant is in a sleeplike state for the first four weeks of infant life. The low reliability of the item is hypothesized to be because according to Mahler, this state is going to peak during weeks 1-4 and therefore should not be reflected after that time period. The varied results of the judges after week five reflect how this state is difficult to see in the older infant.

Item 2: The infant responds to external stimuli.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 2	J1	2	2	2	2	2	3	3	3	1	2
	J2	1	2	2	2	2	3	3	3	1	2
	J3	1	2	2	2	2	3	3	3	1	2

The single measure reliability for Item 2 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The

three raters had full agreement on weeks 2, 3, 4, 5, 8, 13, 15, 17, 20 of the infant's life. Qualitatively, the judge's agreement results for item two reveal that during weeks 2, 3, 4, and 5 scores the infant sometimes does and sometimes does not show a response to external stimuli; weeks 8, 13 and 15 showed that the infant responds to external stimuli frequently. Week 17 results showed no mention of external stimuli, as the infant was sleeping during this observation and week 20 there was agreement that the infant showed a mix of a response to external stimuli and did not respond to external stimuli. Weeks 2-5 shed light on the controversy and critique of Mahler's theory where she says there should be no or minimal response to external stimuli. However others, like Pine (2004) present a revised view of Mahler's theory speaking of 'moments' of many of the behaviors in Mahler's theory as discussed in the literature review above. The results can be viewed in light of the modifications that Pine (2004) made about the infant's moments of responses to external stimuli.

Item 3: The infant responds to internal stimuli.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 3	J1	3	3	3	3	3	3	3	3	2	2
	J2	2	1	2	3	3	3	2	3	2	2
	J3	2	3	2	3	3	3	2	3	2	2

The reliability for Item 3 was below .7, and therefore one judge cannot represent

the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 4, 5, 8, 15, 17, and 20 of the infant's life. Qualitatively, the judge's agreement results for item 3 reveal that although there is agreement for weeks 4, 5, 8 and older, the responses are not fully in line with Mahler's idea of internal stimulation. In addition, the internal stimulation that Mahler refers should be seen in the

normal autistic phase and there is a lack of agreement among the judges. Judges had difficulty seeing the infant's response to internal stimulation in the observation narratives therefore having minimal agreement during the normal autistic phase and low reliability.

Item 4: The infant wakes primarily due to hunger or other physical discomforts.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 4	J1	N/O	N/O	2	3	2	N/O	1	N/O	N/O	1
	J2	N/O	N/O	2	3	3	N/O	1	1	N/O	1
	J3	N/O	N/O	2	3	2	N/O	1	N/O	N/O	1

The reliability for Item 4 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 4, 8, 13, 17, & 20 of the infant's life. Qualitatively, the judges reported that there was no opportunity to observe how the infant wakes up for weeks 1, 2, 8 and 17 indicating that the infant either was asleep or never woke up during these observations. According to Mahler's theory, this behavior is seen during the normal autistic phase and weeks 3 and 4 above have agreement and show that the infant awakens due to physical discomforts, as reported by Mahler. Therefore although there is no overall agreement on all weeks of the normal autistic phase, there is some validity of this aspect of Mahler's theory.

Item 5: The infant falls asleep when hunger and other internal and external discomforts are relieved.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 5	J1	2	3	2	3	1	1	1	3	N/O	1
	J2	2	3	2	3	2	1	1	2	N/O	1
	J3	2	3	2	3	2	1	1	3	N/O	1

The reliability for Item 5 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 4, 8, 13, 17 & 20 of the infant's life. Qualitatively, the judge's agreement results for item 5 reveal agreement on weeks 1, 2, 3, and 4, during the normal autistic phase and are in line with Mahler's theory that the infant falls asleep after their internal and external needs are met, relating to the same issue discussed in item 4, and once again have above .7 reliability.

Item 6: The mother/caretaker's interactions with the infant are primarily through physical handling of and caregiving to the infant.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 6	J1	3	3	3	3	3	3	2	2	N/O	2
	J2	3	3	3	3	3	3	3	3	N/O	3
	J3	3	3	3	3	3	3	3	3	N/O	3

Reliability results were not computed for item 6 because too many items were deleted from this scale. The three raters had full agreement on weeks 1, 2, 3, 4, 5, 8, & 17 of the infant's life. Qualitatively, the judges' results for item 6 reveal agreement that the mother is taking care of the infant through physical handling and physical care.

According to Mahler, the optimal way to care for the infant is through the mother's ministrations and from a qualitative standpoint the judges show strong agreement in their responses.

Item 7: Mother/caregiver's verbalizations and concerns are primarily about the infant's physical needs, discomforts, and her attempts to help the infant achieve a state of comfort, calmness and regulation. This includes the mother speaking to the infant as well as speaking to others about this.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 7	J1	3	3	3	3	3	2	3	3	N/O	3
	J2	3	3	3	3	3	3	2	3	N/O	2
	J3	3	3	3	3	2	2	3	3	N/O	2

The reliability for Item 7 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 4, 15, & 17 of the infant's life. Qualitatively, the judges' agreement results for item 7 reveal that for weeks 1-4, during the normal autistic phase the mother was concerned and spoke about the infant's physical needs. This is similar to question 6 in that Mahler talks about the mother caring for her infant through her verbalizations about the infant's physical needs. Mahler speaks about this behavior in the normal autistic phase.

Item 8: Infant shows interest and can focus on their hands and feet.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 8	J1	1	1	1	1	1	1	1	3	N/O	1
	J2	1	3	1	1	1	1	1	1	N/O	2
	J3	1	1	1	1	1	1	1	2	N/O	2

The reliability for Item 8 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 3, 4, 5, 8, 13 and 17 of the infant's life. Qualitatively, the judges' agreement results for item 8 reveal that the infant did not show interest or focus on their hands and feet for most of the weeks of the observation narrative. This is somewhat in line with Mahler in that it is not until the end of the normal symbiotic phase that the infant starts to see itself as separate and is able to recognize and notice parts of

their body. It could also be that the infant was not showing this capacity during the observations.

Item 9: Mother/caregiver responds to infant’s expression of a need by physically handling the infant and communicating her presence to the infant through visual, auditory and/or tactile response.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 9	J1	3	3	3	3	3	3	1	3	N/O	3
	J2	3	3	3	3	3	3	3	3	N/O	3
	J3	3	3	3	3	3	3	3	3	N/O	3

Reliability results were not computed for item 9 because too many responses were not included in the analysis. The three raters had full agreement on weeks 1, 2, 3, 4, 5, 8, 15, 17, and 20 of the infant’s life. Qualitatively, the judge’s agreement results for item 9 reveal that the mother is responding with several modalities to the needs of the infant and communicating her presence to the infant in that way. This is in line with the same concepts discussed in items 6 and 7 but includes different modalities in which the mother is expressing herself to the infant. As noted, this is in agreement with Mahler’s theory of the mother caring for the infant in this manner, as it begins the symbiotic bond formation with the mother and eventually the infant’s sense of self.

Item 10: When the mother/caregiver is responding to the infant’s needs the following sequence occurs: (a) the infant notices that mother/caregiver is beginning to respond to his/her need and (b) the infant pauses, looks to the mother/caregiver, and/or the infant begins to calm down.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 10	J1	1	N/O	2	2	2	2	1	2	N/O	1
	J2	1	1	1	1	1	1	1	1	N/O	1
	J3	1	1	2	2	1	1	1	1	N/O	1

The reliability for Item 10 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 13, 17, and 20 of the infant's life. Qualitatively, the judges have a general lack of agreement on this item and when there is agreement, it does not seem to fit with the sequence of the item. There no consistency in the pattern of when the infant expresses a need and the mother begins to respond that the infant begins to calm down. This does not negate Mahler's theory as this behavior begins to form at the end of the symbiotic phase. However, this lack of agreement reveals why there is no reliability for this item.

Item 12: The infant visually tracks objects of interest (i.e. a bottle, toy, people).

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 12	J1	1	1	1	1	1	3	3	3	N/O	3
	J2	1	1	1	2	1	2	2	3	N/O	3
	J3	1	1	1	2	1	2	2	3	N/O	3

The reliability for Item 12 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 5, 13, 15, 17 & 20 of the infant's life. Qualitatively, the judges agreement results for item 12 reveals agreement among the first three and fifth weeks of the infant's life. The results report that the infant does not track items, a capacity that the infant should have but may not being doing because it also reveals their response to external stimulation. There is lack of agreement until week 15 and 17 where it shows the infant is visually tracking objects. This is in line with Mahler's perspective

that the infant becomes more aware of external stimulation as can be seen in their ability to track objects.

Item 13: While awake, the infant demonstrates sustained periods of "alert inactivity" indicating awareness of and response to external activity and stimulation.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 13	J1	2	1	1	2	2	2	3	3	N/O	3
	J2	2	3	3	3	2	3	3	3	N/O	3
	J3	2	3	3	2	2	3	3	3	N/O	3

The reliability for Item 13 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 5, 13, 15, 17 and 20 of the infant's life. Qualitatively, the judges had lack of agreement for item 13 revealing that the concept of 'alert inactivity' is a complex one that is either too difficult to exhibit in observations or it does not exist. The judge's scores revealed that there were periods of this state that were apparent especially as the infant got older. This is in line with Mahler's theory in that as the infant gets older they are awake for longer of time and have an awareness of and response to external stimulation.

Item 14: The infant demonstrates clearly differentiated expressions of emotional states in response to external and internal stimulation.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 14	J1	2	1	2	2	2	2	1	3	1	2
	J2	1	1	2	2	3	3	2	3	1	2
	J3	2	1	2	2	2	2	2	3	1	2

The reliability for Item 14 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 2, 3, 4, 15, 17 & 20 of the infant’s life. Qualitatively, the judges’ agreement results for item 14 reveal that in week two there was little variation in the infant’s differentiated expressions, however, weeks 3 and 4 revealed some differentiation in the infant’s emotions. As the infant got older, there was agreement among the judges as seen in week 15 that there were clearly differentiated states; however, in weeks 17 and 20 there was less of a differentiation of emotion. The lack of consistency of the emotional states is not in line with Mahler’s theory in that as the infant gets older their emotional states should be more differentiated.

Item 15: The mother/caregiver and infant engage in periods of mutuality; this may include gazing into each other’s eyes or vocalizing back and forth between the infant and mother/caregiver. Intense positive affect is demonstrated during these periods by both mother/caregiver and infant, and both mother/caregiver and infant are responding to each other.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 15	J1	1	1	2	1	2	2	2	3	N/O	2
	J2	1	1	1	1	1	2	1	3	N/O	2
	J3	1	1	2	1	1	2	1	3	N/O	2

The reliability for Item 15 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 4, 8, 15, 17 and 20 of the infant’s life. Qualitatively, the judges’ agreement results for item 15 reveal that in weeks 1, 2, and 4 there was agreement from the judges about no moments of mutuality in gaze between the mother and infant. This is in line with Mahler’s theory as the infant is in their ‘autistic’ shell,

separated from the world and therefore is not able to have these mutual moments with the mother. Week 8, 15 and 20 have agreement in that there were more moments of mutuality, which would be expected because according to Mahler this is the normal symbiotic phase where the autistic shell begins to crack and the symbiotic relationship with the mother is forming.

Item 16: The mother/caregiver comments about the infant's increased awareness of and interest in the external world including inanimate objects and people.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 16	J1	1	1	1	2	1	2	1	1	1	2
	J2	1	1	1	2	1	1	1	2	1	2
	J3	1	1	1	2	1	2	1	2	1	2

The reliability for Item 16 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 4, 5, 13, 17, and 20 of the infant's life. Qualitatively, the judges' agreement results for item 16 reveal that the mother does not comment about the infant's awareness in weeks 1-3 and 5 and this is not a behavior that occurs during Mahler's normal autistic phase. However according to Mahler's theory, we should begin to hear the mother talk about it after week 5, and although there is some agreement among the judges their agreement does not reflect the mother talking about the infant's increased awareness of external stimuli. Therefore, the beginning weeks do reveal aspects of Mahler's theory; the following weeks are not in line with Mahler's theory.

Item 17: During periods of active mutuality between the mother/caregiver and the infant, they demonstrate a relative lack of interest in and responsiveness to external stimulation, and seem intensely engaged in the exchange between each other.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 17	J1	1	1	2	1	2	2	2	2	N/O	2
	J2	1	1	1	1	1	2	1	2	N/O	2
	J3	1	1	2	1	1	2	1	2	N/O	2

The reliability for Item 17 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 4, 8, 15, 17 and 20 of the infant's life. Qualitatively, the judges' agreement results for item 17 reveal that there is agreement for weeks 1, 2, 4 in that there are no moments of mutuality between the infant and mother. This is in line with Mahler's theory as discussed in item 15. Week 8, 15 and 20 reveals agreement that there are some periods of mutuality between the mother and infant as would be expected in Mahler's normal symbiotic phase. The mother and infant are enveloped in each other and they are able to reveal a lack of responsiveness to anything other than each other.

Item 18: Mother/caregiver or infant initiates affectively positive interactions with the other and the other responds leading to mutually pleasurable exchanges.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 18	J1	1	1	1	2	1	1	1	3	N/O	2
	J2	1	1	2	1	1	1	1	3	N/O	3
	J3	1	1	2	1	1	1	1	3	N/O	3

The reliability for Item 18 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 5, 8, 13, 15 and 17 of the infant's life. The judges agreed that during the observations for these weeks there was no positive interaction that was exchanged between the mother and infant. This is in line with Mahler's theory for the weeks of the normal autistic phase (weeks 1, 2 and 5), however during the normal

symbiotic phase there should be moments of positive interaction between the two. Week 15 does show that the judges agreed that the mother or caregiver initiated interaction with the other. These results show some alignment with Mahler’s normal autistic phase but not with the normal symbiotic phase.

Item 19: When the mother/caregiver holds the infant, they each adjust and mold to each other’s bodies. The mother/caregiver and the infant’s bodies seem to adjust to each other’s bodies and mold and melt into each other.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 19	J1	3	1	2	3	2	2	2	2	N/O	2
	J2	2	1	3	3	2	2	3	3	N/O	1
	J3	2	1	2	3	2	2	2	2	N/O	2

The reliability for Item 19 was below .7, and therefore one judge cannot represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 2, 4, 5, 8, and 17 of the infant’s life. Qualitatively, the judge’s agreement results for item 19 reveal that there was agreement in week 2 that there was no molding behavior, however in weeks 4 there was molding behavior and, weeks 5 and 8 there was agreement that that there was both molding and non-molding behavior. According to Mahler the molding behavior should be apparent in the normal symbiotic phase reflecting the ‘orbit’ that the mother and infant share. The lack of agreement about the molding behavior reveals that the judges had difficulty understanding this concept and/or the narratives did not describe the behavior in a way for the judges to see it in the narrative.

Item 21: Mother/caregiver positions infant facing her to promote eye contact so that they are looking at each other while feeding, talking, singing or other activities together. This position allows for the infant to look at the mother/caregiver's face and hold eye contact during these experiences.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 21	J1	2	2	2	2	2	3	2	3	N/O	2
	J2	1	2	2	2	2	3	2	3	N/O	3
	J3	2	2	2	2	2	3	2	3	N/O	3

The reliability for Item 21 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 2, 3, 4, 5, 8, 13, 15, and 17 of the infant's life. Qualitatively, the judge's agreement results for item 21 reveal that the judges agreed on weeks 2 - 5 and 13 and that it seemed likely that the mother positioned the infant to face her to promote eye contact. Week 15 revealed agreement that the observation mentioned that the mother promoted eye contact and the infant held the eye contact with the mother. According to Mahler the infant should be able to hold eye contact in the normal symbiotic phase and although the judges reported that there was the possibility of it, this is not completely in line with her theory at this stage.

Item 22: The infant shows interest in and initiates touching and exploring mother/caregiver's body, hands, face and/or objects on the mother when being feed or other times during which the infant is in physical proximity to the mother.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 22	J1	1	1	1	1	1	2	1	1	N/O	1
	J2	1	1	1	1	1	1	1	1	N/O	1
	J3	1	1	1	1	1	2	1	1	N/O	1

The reliability for Item 22 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 4, 5, 13, 15, 17 and 20 of the infant's life. Qualitatively, the judge's agreement results for item 22 reveal that there was agreement that in weeks 1-5, 13, 15 and 20 the infant did not show any interest in touching or playing with parts of

the mother's body, face and other objects of the mother. This is in line with Mahler's normal autistic phase but not the normal symbiotic phase in that this behavior should be apparent with her theory during the normal symbiotic phase as well.

Item 23: Infant smiles and/or interacts with observer and/or other individuals as well as with mother/caregiver. Infant is reacting, which can be seen as the infant looking, smiling, whimpering and/or cooing at the observer and/or other individual.

		Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 8	Wk 13	Wk 15	Wk 17	Wk 20
Item 23	J1	1	1	1	1	1	2	1	3	N/O	3
	J2	1	1	1	1	1	1	1	3	N/O	3
	J3	1	1	1	1	1	2	3	3	N/O	3

The reliability for Item 23 was above .7, and therefore one judge can represent the other judges on scoring future observation narratives for this item. The three raters had full agreement on weeks 1, 2, 3, 4, 5, 15, 17 and 20 of the infant's life. Qualitatively, the judge's agreement results for item 23 reveal that for weeks 1-5 there was agreement of the lack of the infant's reaction to the observer or other individuals. This is in line with Mahler's normal autistic phase in that the infant is in his or her own 'autistic' orbit and therefore will not interact or respond to external stimuli. Week 15 and 20 had judge agreement that the infant did react to the observer as well as to the mother, which is also in agreement with Mahler's theory that the infant is beginning to see the mother and other as outside the self, marking the climax of the normal symbiotic phase.

The above quantitative and qualitative discussion of each item and how they relate to Mahler's theory seems to strongly confirm many aspects of Mahler's theory. Many of the aspects of her theory that have not been confirmed can be explained in light of the revisions and modifications that Pine (2004) discusses. This study successfully

confirms many aspects of Mahler's theories and validates Pine's contribution as well as detailed above.

Judge Differences

Differences in the judges' understanding and approach towards infant behavior and abstract infant concepts affected the judges scoring and therefore the overall reliability of the results. Nevertheless, it is important to note that it is normal to have differences between judges and despite the three judges having similar educational backgrounds and interest in infant theory, differences are expected.

One possible explanation for judge disagreement was that one judge had difficulty judging the observations and needed more concrete direction on defining the concept in the measure. The researcher had difficulty providing this given that there was a limit on how concrete one can be with abstract ideas. Another issue was disagreement about what certain Mahlerian concepts meant. Even after the researcher provided certain definitions of Mahlerian concepts, the judges had different conceptual definitions of the concepts and therefore had a hard time using the definition of the researcher. For phase three of analysis, it seemed that two judges generally agreed with each other, and it was not always the same two judges. This could be the nature in which the judges read the questions and understood Mahler's theory and infant theory content in general.

Limitations of Study

Limitations of the study are implied in the discussion above, and include the reasons for the difficulty in obtaining an even higher reliability result for this dissertation. Reasons include the abstract nature of the concepts that the researcher tried to transform into observational statements and the difficult task of quantifying certain behaviors and

aspects of Mahler's theory. Additionally, the observation narratives are a subjective source of data and the measure attempts to rate behaviors that may not correspond with what the narratives discussed. There were also limitations in the adequacy of the manual and training sessions in training the judges in the complex concepts and intricacies of Mahlerian theory. When using judges, their subjective experiences towards the material and their style of understanding the manual and infant theorists can have a negative impact on reliability.

Implications For Future Research

Future research would include having one judge score other observation narratives of other mother-infant dyads on the items that had above .7 single measure reliability. An interpretation of these results with the results of the dissertation project could reveal some trends in infant development and it how it relates to Mahler's theory. A comparison of the dyads based on weeks of development would pull together information of dyads at different points of development and how they all relate to Mahler's theory. In addition, future research that created hypothesis statements of Mahler's theory as they relate to the items in the measure and then comparing these statements with the dissertation results and other infant-mother observations could lead to a revision of Mahler's theory in light of infant observation data.

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APPENDIX

Updated Manual for Scoring the Measure of Margaret Mahler's Early Infant Development Theory (MMMEIDT)

Thank you for participating in the judging process of the Measure of Margaret Mahler's Early Infant Development Theory, the MMMEIDT. You will be reading narratives that were written by participant-observers after they observed a mother-infant dyad for one hour in the naturalistic setting of the family's home during the course of the infants first four months of life. You will then score the observation narratives according to the manual provided. Below are instructions for scoring.

Instructions for Scoring the MMMEIDT:

Each observation narrative details an hour-long observation of an infant and mother by a participant observer. Upon completing the reading of each observation narrative, please answer each item on the Measure by rating it on the 3-point scale provided. You may go back to the observation narrative at any point during the scoring process to clarify the absence or presence of the behavior described in the items on the scale.

It will be crucial to have this manual with you while scoring the observation narratives. This manual provides an explanation of the different scores from 1-3 that can be given for each item. In addition, this manual provides vignettes from actual observation narratives demonstrating the scoring criteria and rationale. The criteria for each score are described in detail along with the item.

For some items in addition to the scores of 1-3, the option of N/O, or No Opportunity, is provided. N/O indicates that in your opinion, there was no opportunity to see the behavior described by the item in that particular observation narrative. If N/O is an option for an item, it will be clearly indicated with the item. If there is no mention of those options and you are unsure of the rating, please rate the item as 1.

Measure of Margaret Mahler's Early Infant Development Theory Items:

Item 1: When awake, the infant is in a sleeplike state relative to the amount of time being in an alert or aroused state.

A sleeplike state is defined as a low state of arousal having one to all of the following characteristics: being half asleep, eyes opening and closing frequently, eyes opened but gaze unfocused, reaction to sensory stimuli is somewhat delayed or vague.

SCORING:

N/O: The infant was in a deep sleep for the duration of the observation narrative.

1: The infant was awake and in an alert or aroused state during most of the observation narrative, or if there was no mention of a sleeplike state in the narrative.

2: The infant had periods of being in a sleeplike state and a non-sleeplike (he/she was wide awake or fast asleep) during the observation narrative.

3: The infant was in a sleeplike state as defined above during most of the observation narrative.

EXAMPLE:

"His eyes are closing and he moves his head back a bit. She starts stroking his temple with what looks like a slightly pressured touch. His eyes open and close a bit."

This is scored a 2. The infant is having a period of being in a sleeplike state. If this behavior occurred during most of the observation narrative, it would be scored a 3.

Item 2: The infant responds to external stimuli.

External stimuli are environmental stimuli that can be visual, auditory, or tactile. Examples of auditory stimuli include sounds like loud noises, soft noises, someone speaking softly, yelling or talking in a loud voice, a bell or the phone, a vacuum cleaner, or a whistling kettle. Visual stimuli may include sunlight, bright or soft lights, pictures or light and dark contrasts or shadows on walls or other items, the mother's or other's face. Tactile stimuli may be noticeable responses to diapering or changing, tickling, or the infant's hair being brushed. Examples of infant responses to external stimuli are: infant turning away or towards the stimuli, staring at the stimuli, crying, smiling or startling in response to the external stimuli. Every observation narrative has external stimuli.

SCORING:

N/O: Cannot be given for this item. Every observation narrative has external stimuli even if the infant is sleeping during the whole narrative. The infant can still respond to external stimuli while sleeping.

1: External stimuli were mentioned in the observation narrative but there was no mention of the infant responding to these stimuli. If the narrative says nothing about external stimuli then score a 1.

2: The infant sometimes showed a response and sometimes did not show a response to the external stimuli.

3: The infant responded to the external stimuli frequently.

EXAMPLE:

“At this point, things became chaotic, L started to fuss, and the phone rang, someone from France calling. R’s mum was speaking in Russian, and then handed the phone to R, who was talking and trying to deal with her infant fussing at the same time.”

It is unclear if the infant is fussing in response to things becoming chaotic or if the infant was fussy before things became chaotic; it is important for the judge to look at the context. If there were no other contextual cues this would be scored as a 2 because there are external stimuli present that may be contributing to the infant’s responses.

“He was watching the hanging toys over his head, and seemed absorbed in all the stimulation (sounds, the toy movements, the colors) of his jungle like playpen.”

This would be scored a 3. The external stimuli are the hanging toys and the infant being absorbed is his response to the external stimulation.

“I watched him move to the sounds, his arms rising up like a conductor and bouncing in the air. His movements had a slow motion quality, like someone doing tai chi, or someone working with a different sense of gravity (maybe moon walking?). He moved his legs as well, into the air and back down.”

This would be scored a 3. The external stimuli are the sounds. The infant is raising his arms and bouncing in the air as a response to the external stimulation.

“Eventually the infant awakened and she looked like her eyes were fixed on mine but actually I think she was fixed on the light coming from an open window.”

This would be scored as a 3. The infant seems to be fixed on the light or the observer’s eyes, responding to visual stimuli.

Item 3: The infant responds to internal stimuli.

A response to internal stimuli may include the following kinds of responses in the absence of external stimulation: grimacing or other facial expressions, burping, spitting up, vomiting, lifting his/her head or legs or other body movements. Responses to internal stimuli may occur when the infant is awake or asleep.

SCORING:

N/O: Cannot be given for this item.

1: There is no mention of the infant’s response to internal stimuli during the observation narrative.

2: It is unclear if the infant was responding to internal or external stimuli during the observation narrative.

3: It is clear that the infant responded to internal stimuli.

EXAMPLE FROM THE TEXT:

“His eyes are closed but he is moving both arms-stretching and bending- as if trying to get comfortable.”

This would be scored a 3 as the infant is responding to internal stimuli while sleeping and there is no indication that something is going on in the external environment.

“On the way into the bedroom, slung over R’s shoulder, he seemed to be trying to lift his head to look at what was behind him (me, his dad crossed our path, the hallway, etc...)”
Infant is responding to external or internal stimuli, and this would therefore be scored a 2. It may be that R is trying to lift his head in response to an internal desire to do so or in response to external stimuli in the environment.

Item 4: The infant wakes primarily due to hunger or other physical discomforts.

SCORING:

N/O: The infant is awake during entire observation narrative or is asleep and does not wake up during the narrative.

1: When the infant awakens, he/she is **not** looking for food or indicating other internal discomfort but is satisfied in the state or position they awakened into. If the infant is satisfied until the mother begins to do something with the infant like feed or change him/her and the infant’s reaction of discontent or crying is not related to him/her waking up, the item is scored 1.

2: The infant awakens and is somewhat fussy, showing some physical discomfort, due to the need to be fed, held and/or changed. When these needs are attended to, the infant calms.

3: The infant awakens and cries or wails loudly, and is somewhat calmed when their internal needs are met, i.e. after they are fed, changed, and/or held. This is also scored if the infant wakes and does not calm when his/her internal needs are met.

EXAMPLE:

“He stirs a bit and wakes with a slight cry. He then begins to calm when his mother feeds him.”

This item is scored a 2. When the infant woke up, he lets out a little cry revealing discomfort and then was calmed when he began to be fed.

Item 5: The infant falls asleep when hunger and other internal and external discomforts are relieved.

In order to score this item on the scale of 1-3 below, the infant had to experience some discomfort, which was relieved by maternal care.

SCORING:

N/O: If the infant is asleep during the visit or the infant did not experience some discomfort, which was then relieved.

- 1: The infant stays awake and alert for what appears to be a long interval after his/her internal and external needs are met, (i.e. after they are fed, changed) or any other needs and discomforts are relieved.
- 2: The infant has a series of moments of sleepiness followed by moments of wakefulness after her/his needs are met. This could mean that he/she could not stay asleep and/ or fell asleep and woke up several times during the observation narrative.
- 3: The infant falls asleep soon after his/her needs are met and he/she stayed asleep for what appears to be a long interval.

EXAMPLE:

“She comments he is falling asleep. He feeds for a few minutes and he falls asleep.”

This example would be scored a 3. The infant has fallen asleep after his needs have been met and stays that way for the duration of the observation narrative.

Item 6: The mother/caretaker's interactions with the infant are primarily through physical handling of and caregiving to the infant.

This item focuses on the physical handling and the satisfying and soothing of discomfort by the mother/caregiver as the way the mother/caregiver cares for the infant. This may include holding, but the primary action is the mother/caregiver physically taking care of the infant's physical needs not the interactions that are intended for play or other kinds of communication from the mother to the infant.

SCORING:

N/O: The infant is asleep during the entire observation narrative.

- 1: The mother/caregiver does not physically handle the infant or physically care for the infant during the observation narrative.
- 2: Some of the mother/caregiver's interactions with the infant include physical handling or physically caring for the infant during the observation narrative.
- 3: Most of the mother/caregiver interactions with the infant include physically handling or physically caring for the infant.

EXAMPLE FROM THE TEXT:

“After a few more minutes of starting and stopping eating, R said she would change him, and headed off to the bedroom and I followed. She swiftly cleaned and changed him.”

“R calmly put her hand on his belly and rubbed it, explaining that he was having trouble with gas, and was very uncomfortable.”

“R took him back out to the living room and attempted to calm him down by holding him and patting his back.”

These are examples that the mother/caregiver was physically handling the infant. If this were the only instance in the observation narrative, then this would be scored a 2. However, if the above items occurred throughout the narrative they would be scored a 3.

Item 7: Mother/caregiver's verbalizations and concerns are primarily about the infant's physical needs, discomforts, and her attempts to help the infant achieve a state of comfort, calmness and regulation. This includes the mother speaking to the infant as well as speaking to others about this.

The focus for this item is on the mother/caregiver's preoccupation with and focus on the infant's needs as seen through her verbalizations about these to the infant or to someone else. Examples of her verbalizations may include her concerns about her infant or comments about how to best regulate and calm her infant. This may also include the way she speaks to the infant when she is caring or not caring for the infant about his/her physical needs and/or achieving a state of calm and comfort for the infant.

SCORING:

N/O: If the infant is sleeping during the observation narrative.

1: The mother/caregiver does not speak to or about the infant achieving a state of calm or about the infant's physical needs during the observation narrative.

2: The mother/caregiver speaks minimally or seems content in her statements to others or the infant about the infant's physical needs or helping the infant achieve a state of calm during the observation narrative.

3: The mother/caregiver spends much time or seemed relatively concerned and/or content during the observation narrative speaking to others and/or to the infant about the infant's physical needs and discomforts and/or about the infant's achievement of a state of calm and comfort.

EXAMPLE FROM THE TEXT:

"R (mom) picked L (infant) up and held him, wondering aloud, "are you still hungry sweetie?" and speaking to him in a soft singsong voice, saying things like, "it's okay sweetie," and "oh...oh...you'll be okay," and "what is it my love, what is it."

These are examples of verbalizations of the mother and would be scored a 3. The mom is speaking to the infant about the infant's physical needs of being hungry. She is also trying to help her infant achieve a state of calm by asking if he is ok in a soft voice and expressing some concern and some content statements about his state.

"She was swift and easy in her movements, talking him through the process, and he was calm and attentive."

This would be scored a 3. The mother is talking to the infant about what she is doing and trying to help the infant achieve a state of calm while verbalizing to him.

"L immediately began to cry, and both parents chimed in with, "I know, I know, this is uncomfortable, but we need to clean out your nose so you can breath."

This item would be scored a 2 or a 3 depending of the quality and the amount of time parents have this preoccupation and are speaking about this during the observation

narrative. These parents seem content and are verbally calming the infant down and talking about his physical need to breath.

“She tried breastfeeding for a few minutes and wondered aloud if he was too upset.”

This above item would be scored a 3. The mother is wondering aloud if the infant is upset. The mother is speaking about the infant’s physical discomfort and she is trying to help her infant achieve a state of calm as she wonders aloud about his needs.

Item 8: Infant shows interest and can focus on their hands and feet.

This may be seen when the infant moves their hands and feet into their mouth with intentionality. The infant showing interest may include touching, playing, or looking at his/her hands and feet. This item refers **not just** to moving the arms and legs, but to the infant actually looking at or focusing on their hands and feet or arms and legs with intentionality while they play or touch them.

SCORING:

N/O: If the infant is sleeping during the observation narrative.

1: The observation narrative does not mention anything about the infant’s hands and feet or the infant may touch their hands and feet but does not show interest in them by looking at or playing with them.

2: There is mention of the infant’s interest in his/her hands and feet but the infant’s intentionality in moving or focusing on them is unclear.

3: The infant shows interest in his/her hands and feet and moves or shows interest in them with intentionality, by looking at his/her hands and feet while touching, playing, or using them in any other way.

EXAMPLE FROM THE TEXT:

“I sat next to him and watched him for a while, occasionally rubbing his belly as he moved his arms and legs and murmured.”

This would be scored as a 2. We do not know if the infant is moving his legs with intentionality however the infant’s legs and arms are mentioned.

“Matt is resting on his left cheek and his right hand is in his mouth. He sucks on his hand. I notice his gaze is not on his hand but just beyond.”

This would be scored a 2. The infant has an interest in his hand as is seen by him putting it in his mouth, but he is not focusing on it.

Item 9: Mother/caregiver responds to infant’s expression of a need by physically handling the infant and communicating her presence to the infant through visual, auditory and/or tactile response.

Focus of this item is that the mother is communicating her presence to the infant and letting him/her know through different modalities that the mother/caregiver will satisfy his/her needs.

When the child expresses a need the mother/caregiver responds to the need by physically handling the child and in addition, uses one or more of the following modalities:

Visual response would include mother/caregiver smiling at the infant or making other facial expressions.

Auditory response would include the mother/caregiver singing or talking to the infant.

Tactile response would include touching the infant in a way that was in addition to physically handling of the infant's needs.

SCORING:

N/O: The infant was asleep during the observation narrative, the infant does not express any needs, the mother/caregiver did not respond to an expressed need of the infant, or the mother/caregiver did not handle the infant.

1: The mother/caregiver responds to infant's physical needs but does not communicate to the infant with any additional modalities such as visual, auditory and/or tactile responses.

2: The mother/caregiver occasionally uses one modality when responding to the infant's needs (i.e. auditory, but not visual or tactile) at any point during the observation narrative.

3: The mother/caregiver used two modalities (not necessarily at the same time during the narrative) when responding to the infant's needs at any point during the observation narrative.

EXAMPLE FROM THE TEXT:

"She swiftly cleaned and changed him, talking to him throughout about how he seemed to feel better now, after his big poop, and that she knows he has gas and it hurts him. She told him everything she was doing as she washed and wiped, applied lotion, and chose which diaper."

This item would be scored a 2. The mother/caregiver is communicating her presence to the infant auditorily by talking to him during the diapering. If it also mentions the mother/caregiver stroking his/her stomach then it would be scored a 3.

Item 10: When the mother/caregiver is responding to the infant's needs the following sequence occurs: (a) the infant notices that mother/caregiver is beginning to respond to his/her need and (b) the infant pauses, looks to the mother/caregiver, and/or the infant begins to calm down.

SCORING:

N/O: The infant is asleep during the observation narrative, the infant does not express distress or the mother/caregiver does not respond to any of the infant's needs.

1: The infant does not change his/her behavior in response to the mother/caregiver's beginning to meet the infant's need; or there is no mention of the described sequence during the observation narrative.

2: The infant somewhat calms as soon as the mother/caregiver begins to respond.

3: The infant clearly changes her/his behavior and calms, pauses, or looks to the mother/caregiver as she begins to respond.

EXAMPLE FROM THE TEXT:

“Lenny (infant) has a face of displeasure with eyes squinting and mouth puckered but swallows it. He lets out a slight cry. Evelyn (mom) starts to jiggle her leg so that Lenny’s legs and bottom half jiggles a bit. Lenny continues to look at Evelyn.”

This would be scored a 3. Infant pauses or looks to the mother/caregiver’s response after crying or showing distress.

Item 12: The infant visually tracks objects of interest (i.e. a bottle, toy, people).

Tracking an object means that the infant is visually following a moving object or the infant was moving and followed a stationary object.

SCORING:

N/O: The infant was asleep during the observation narrative.

1: There is nothing in the observation narrative indicating that the infant visually tracked objects or people.

2: It seems the infant is trying to visually track an object or person but is not successful.

3: The infant successfully visually tracks an object or person.

EXAMPLE FROM THE TEXT:

“On the way into the bedroom, slug over R’s shoulder, he seemed to be trying to lift his head to look at what was behind him (me, his dad crossed our path, the hallway, etc...)”

This would be scored a 2. The infant is attempting to track something but does not seem successful.

Item 13: While awake, the infant demonstrates sustained periods of "alert inactivity" indicating awareness of and response to external activity and stimulation.

Alert inactivity is defined as an infant having his/her eyes wide opened, appearing to focus and respond to external visual, auditory, or tactile stimuli such as loud and soft noises, people’s voices, bright or soft lights, or responses to touch as when diapered, dressed, or tickled. The infant’s responses include turning away from or towards the stimuli, staring at the stimuli, crying, smiling or startling in response to the external stimuli.

Every observation narrative has external stimuli.

SCORING:

N/O: The infant is asleep during the observation narrative.

1: There is no mention in the observation narrative of the infant being in a state seeming like the above description.

2: The infant demonstrates one or several periods of “alert inactivity” and/or is not consistently alert and responsive to external stimuli.

3: The infant is in a state of “alert inactivity” for most of the observation narrative, or for several periods during the observation narrative.

EXAMPLE FROM THE TEXT:

“I went into the living room and said hello, and noticed that infant L looked quite alert.”
If this were L’s behavior/state for the majority of the observation narratives, this would be scored a 2. There was a moment of “alert inactivity” but it was unclear if the infant responded to external stimuli.

“As S leaned over and interacted with the infant, Linus appeared interested and focused on his father, never letting him out of his sight, and the gaze between the two was maintained. They silently looked at one another, smiling, they made little noises together, and at moments S narrated his version of what was happening between them to his son. S offered L his finger, which L grabbed onto.”

This would be scored a 3. There was a period of alert inactivity, during this observation narrative. It was because of the external stimuli that we noticed the alert inactivity. The infant is interested, focused, gazing and responding to the external stimuli of the father.

“His eyes remain blue grey and he appears to be looking around much more.”
This would be scored a 2. The infant is having more moments of “alert inactivity” but there is no mention of the infant’s response to external stimuli.

Item 14: The infant demonstrates clearly differentiated expressions of emotional states in response to external and internal stimulation.

Clearly differentiated expressions would be demonstrated by infant’s varied emotional responses to internal and external stimulation. The infant does not respond in the same way to different stimuli and shows various emotional responses revealing a variety of emotional expressions. Differentiated expressions of emotional states might look like the following: when the infant is content he/she may show broad smiling, make cooing sounds as well as contented expressions; when the infant is discontent, the infant would not just cry but show different kinds of distress like frowning, whimpering, and/or crying.

SCORING:

N/O: Cannot be give for this item.

1: There is very little variety in the emotional expressions of the infant throughout the observation narrative.

2: The infant demonstrates different emotional expressions but it is not clear how differentiated they are to the mother/caregiver or observer.

3: The infant expresses a variety of clearly differentiated content and/or discontent emotional states, as described above, during the observation narrative.

EXAMPLE FROM THE TEXT:

“The infant’s fussing and squealing escalated and dropped, over and over, with short intervals of calm and quiet, as R tried holding him against her and speaking to him in a soft singsong voice...”

This would be scored a 1. There is little variation in the emotional expressiveness of the infant; the infant just seemed to cry when they were discontent.

Item 15: The mother/caregiver and infant engage in periods of mutuality; this may include gazing into each other's eyes or vocalizing back and forth between the infant and mother/caregiver. Intense positive affect is demonstrated during these periods by both mother/caregiver and infant, and both mother/caregiver and infant are responding to each other.

SCORING:

N/O: If infant were sleeping during the observation narrative.

1: There was no mention in the observation narrative about moments of mutuality in the interactions between the mother/caregiver and infant.

2: There was mention of mutuality, but there were few moments or it was unclear about the duration or intensity of the positive affect during these moments.

3: There was mention of one long or several shorter moments of mutuality between the mother/caregiver and infant and there was positive affect during these moments.

EXAMPLE FROM THE TEXT:

"She held him for a while, silently, and they gazed at each other, both with mouths partly open, R smiling, and L looking up at her. They both made little sounds, her sighing, murmuring, occasionally kissing him and talking to him...and L murmuring and making soft but audible sounds as well."

This would be scored a 3 because it is clear that there was a moment of mutuality and that there was positive affect during the moments.

"Linus was in R's arms, and they were quite focused on each other. R made a few casual greeting comments to me, and quickly turned her focus back to L. They were communicating with one another, as R moved between describing to L about what was happening, and matching his sounds and facial movements. They held each others gaze throughout."

This example would be scored as a 3. The mother/caregiver and infant are having a moment of mutuality where they are gazing and focusing on each other for a long interval.

Item 16: The mother/caregiver comments about the infant's increased awareness of and interest in the external world including inanimate objects and people.

Infant development is being defined here as the infants increased awareness to external stimuli not the infant's physical development.

SCORING:

N/O: Cannot be given for this item.

1: There was no mention of mother/caregiver commenting of infant's increased awareness of external stimuli.

2: There is some mention of developmental changes in the infant but it is unclear whether these relate to the infant's increased awareness of external stimuli.

3: The mother/caregiver comments on the infant's increased awareness of external stimuli.

EXAMPLE FROM THE TEXT:

"S began to tell me how L had started grabbing hold of his finger in the last few days, and each day his grip was stronger. He said Linus was now able to hold something and shake it, and how exciting it is for him to see his son develop."

This would be scored a 3. The example describes how Linus was able to hold and respond to an external stimuli and the father was commenting on it.

Item 17: During periods of active mutuality between the mother/caregiver and the infant, they demonstrate a relative lack of interest in and responsiveness to external stimulation, and seem intensely engaged in the exchange between each other.

A premise for this item is that there is active mutuality between the mother and infant. In addition, relative lack of responsiveness indicates that if something had to be responded to, it would not be included in something that interrupted the level of engagement between the mother/caregiver and infant. For example, if a phone rang, someone called from another room, or something happened that had to be responded to, it wouldn't be considered a disruption.

SCORING:

N/O: The infant was asleep during the observation narrative.

1: There were no moments/periods of mutuality between the infant and mother/caregiver.

2: There were periods of mutuality mentioned in the observation narrative and but it is unclear or does not mention external stimuli that interrupted or did not interrupt these moments.

3: The mother/caregiver and infant have moments/periods of mutuality; they are enwrapped in the interaction between each other and seem to demonstrate a relative lack of responsiveness to the external stimulation that seem to be occurring during the observation narrative.

EXAMPLE FROM THE TEXT:

"Linus was in R's arms, and they were quite focused on each other. R made a few casual greeting comments to me, and quickly turned her focus back to L. They were communicating with one another, as R moved between describing to L about what was happening, and matching his sounds and facial movements. They held each other's gaze throughout."

"They were completely enraptured with each other, holding each others gaze, mimicking each other with sounds, rhythms, smiles... at times it seemed R would make a sound or smile and L would instantly (split-second) respond by matching her. There were moments when they would both hold a shared expression, almost pausing, and then one or the other would do something else, and again the other would respond instantly."

The above examples would be scored a 3. The mother/caregiver and infant were only tuned into one other and were able to demonstrate a lack of responsiveness to external stimulation.

Item 18: Mother/caregiver or infant initiates affectively positive interactions with the other and the other responds leading to mutually pleasurable exchanges.

The mother/caregiver and infant initiate mutually, affectively positive exchanges with one another, which lead to heightened positive and pleasurable affect in both the infant and mother/caregiver. This may be seen through the mother/caregiver's or infant's back and forth vocalizations, smiles, or physical exchanges (such as clapping hands) with the other.

SCORING:

N/O: The infant was sleeping during the observation.

1: There was no positive interaction or initiation of affectively positive exchanges by mother/caregiver or infant during the observation.

2: Mother/caregiver or infant initiates interaction with other but the other does not respond.

3: Mother/caregiver or infant initiates interaction with other and the other responds.

EXAMPLE FROM THE TEXT:

“She talked to him and mirrored his expressions. He had his tongue out again and she pursed her lips and put her tongue out, too, and continued talking to him in “motherese” as they gazed at one another. Peter smiled from time to time and she told me she waits until he seems frustrated before moving to something new.”

This example is scored a 3. The mother/caregiver is eliciting positive affect from the infant, and the infant is responding.

Item 19: When the mother/caregiver holds the infant, they each adjust and mold to each other's bodies. The mother/caregiver and the infant's bodies seem to adjust to each other's bodies and mold and melt into each other.

Non-molding behavior is demonstrated when the infant pulls away, is moving around a lot on the mother/caregiver's body, squirming or arches his/her back when mother/caregiver is holding him/her.

SCORING:

N/O: The mother/caregiver does not hold the infant during the observation narrative.

1: There was no mention of molding or non-molding behavior between the infant and mother/caregiver's bodies.

2: There were both molding and non-molding moments between the mother/caregiver and infant.

3: The infant and mother/caregiver mold to each other's bodies.

EXAMPLE FROM THE TEXT:

“He is moving around against her body.”

This would be scored a 1. The infant is not molding to the mother/caregivers body.

Item 21: Mother/caregiver positions infant facing her to promote eye contact so that they are looking at each other while feeding, talking, singing or other activities together. This position allows for the infant to look at the mother/caregiver's face and hold eye contact during these experiences.

SCORING:

N/O: The infant was sleeping during the observation narrative.

1: There is no mention and it is unlikely that the mother/caregiver positioned the infant to face her while feeding, talking, singing or other activities together. It can also be that the infant had no visibility of mother, and/or there was no eye contact made.

2: There is no mention but it seems very likely/possible that the mother/caregiver positioned the infant to face her while feeding, talking, singing or doing other activities with the infant, with the possibility/likelihood of promoting eye contact with one another.

3: The observation mentions that the mother/caregiver positioned the infant facing her and there was possibility/likelihood that mother/caregiver and/or the infant promoted or held eye contact for some of the time while feeding, talking, singing or other activities together.

EXAMPLE FROM THE TEXT:

She gets up and brings the infant over to bed and put him down on his back. She sits in front of him and leans over Max. His arms stretch outward as he continues to gurgle and coo.

This item is scored a 2. The mother/caregiver positions herself in front of the infant but it is unclear if he held eye contact with his mother during this time.

Item 22: The infant shows interest in and initiates touching and exploring mother/caregiver's body, hands, face and/or objects on the mother when being feed or other times during which the infant is in physical proximity to the mother.

This focus of this question is on the infants touching and/or exploration of the mother. This may be seen through the infant intention of touching or playing with parts of the mother/caregiver's body. For example the infant just resting his hand on the mother's breast would be touching or possibly playing with mother, but putting hands in mother's mouth, touching the mother's face while looking in her eyes, or grabbing for her hair as she picked him up would be examples of the infant exploring the mother's body.

SCORING:

N/O: The infant was asleep during the observation narrative, there was no record that the mother/caregiver interacted or was in close proximity to the infant.

1: There was no mention of the infant initiating touch or playing with part of the mother/caregiver's body or objects on the mother body during the observation narrative.

2: There is mention that the infant initiated touch or play with mother's body, and it is possible but unclear if the infant showed interest in exploring the mother's body and/or objects on mother.

3: The infant revealed interest in playing and exploring parts of their mother's body by touching, or playing with their mother/caregiver's body during feeding, playing, talking, or singing.

EXAMPLE FROM THE TEXT:

"S began to tell me how L had started grabbing hold of his finger in the last few days, and each day his grip was stronger."

This would be scored a 2. The infant is playing with the father's finger, but it is hard to tell if the infant has the intention of touching. The infant is not looking at the finger while he touches it, he is just grabbing it so it does not seem to be intentionality.

Item 23: Infant smiles and/or interacts with observer and/or other individuals as well as with mother/caregiver. Infant is reacting, which can be seen as the infant looking, smiling, whimpering and/or cooing at the observer and/or other individual.

SCORING:

N/O: Infant was asleep during the observation narrative.

1: There was no mention during the observation narrative if the infant, reacts and/or interacts with the observer or other individuals.

2: The infant looks at observer or others at some point in the observation narrative, but does not show a clear reaction and/or interaction with them.

3: The infant interacts and/or reacts to or with the observer or other individuals as well as with the mother/caregiver.

EXAMPLE FROM THE TEXT:

"He'd make a little cooing sound and I'd make it back and we both smiled at one another."

This example would be scored a 3. The example is of an exchange with the observer and the smile is an interaction with the observer.