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The Basic Model

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In an attempt to understand early emotional development, we conducted a number of clinical, observational, and intervention studies on emotional development in infants, young children, and their families. These have included multirisk infants and families, infants and children with biologically based developmental problems, such as autism, and infants and families without challenges or problems (Greenspan, 1981; 1992; 1998; Greenspan & Wieder, 1998; Greenspan et al., 1987; Interdisciplinary Council on Developmental and Learning Disorders Clinical Practice Guidelines Workgroup, 2000). In order to understand the observed patterns, we formulated a broad theoretical perspective, a "developmental structuralist" model (Greenspan, 1979; 1981) that would accommodate both disturbed and adaptive emotional functioning as well as related cognitive, motor, and sensory capacities.

The clinical interest in early emotional development, including psychopathology in infancy and early childhood, is based on an impressive foundation. Constitutional and maturational patterns that influenced the formation of early relationship patterns were already noted in the early 1900s, with descriptions of "babies of nervous inheritance who exhaust their mothers" (Cameron, 1919) and infants with "excessive nerve activity and a functionally immature" nervous system (Rachford, 1905).

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Winnicott, who as a pediatrician in the 1930s began describing the environment's role in early relationship problems (1931), was followed in the 1940s by the well-known studies describing the severe developmental disturbances of infants brought up in institutions or in other situations of emotional deprivation (Bakwin, 1942; Bowlby, 1951; Hunt, 1941; Lowery, 1940; Spitz, 1945). Spitz's films resulted in the passage of laws in the United States prohibiting institutional care for infants. (They were instead to be placed in foster care.)

Both the role of individual differences in the infant, based on constitutional-maturational and early interactional patterns, and the "nervous" infants described by Rachford in 1905 and Cameron in 1919, again became a focus of inquiry, as evidenced by the observations of Burlingham and Freud (1942); Bergman and Escalona's descriptions of infants with "unusual sensitivities" (1949); Murphy and Moriarty's description of patterns of vulnerability (1976); Thomas, Chess, and Birch's temperament studies (1968); Cravioto and Delicardie's descriptions of the role of infant individual differences in malnutrition (1973); and the early empirical literature on infants (Brazelton, Koslowski, & Main, 1974; Emde, Gaensbauer, & Harmon, 1976; Gewirtz, 1961; Lipsitt, 1966; Reingold, 1969; Sander, 1962; Sroufe, 1979; Stern, 1974a; Stern, 1974b).

Perhaps most widely known of these foundation-building efforts are Spitz's report (1946) on anaclitic depressions in institutionally reared infants and Bowlby's monograph, *Maternal Care and Mental Health* (1951), describing the now well-known "syndromes" of disturbed functioning in infancy. Child psychoanalysts' interest in disturbances in infants, as indicated by the work of Bernfeld (1929), Winnicott (1931), A. Freud and Burlingham (1942), and Anna Freud (1965), as well as the work of Erik Erikson (1959), amplified the complexity or multidimensional nature of individual differences in infants (constitutional and maturational patterns) to tendencies for psychopathology highlighted by the reports of Sybille Escalona and Lois Murphy and their colleagues (Escalona, 1968; Murphy, 1974) and Cravioto and Delicardie (1973).

Several existing developmental frameworks have provided enormous understanding of individual lines of development in infancy and early childhood; for example, Sigmund Freud (1905), Erikson (1959), Piaget (1962), Spitz and Cobliner (1966), Anna Freud (1965), Kohut (1971), Kernberg (1975), and Mahler, Pine, and Bergman (1975). These foundations, together with the rapidly growing body of clinical experience with

infants and their families (Fraiberg, 1980; Provence & Naylor, 1983; Provence, 1983), provided direction for a much-needed integrated approach encompassing the multiple lines of development in the context of adaptive and disordered functioning.

Further clarification of the elements that needed to be involved in an integrated model includes the perspective offered by developmental psychopathology. This perspective combines knowledge about developmental processes (Bemesderfer & Cohler, 1983; Campos, Campos, & Barrett, 1989; Kovacs & Paulauskas, 1984), adaptive patterns (Als, 1981; Brazelton & Als, 1979), and characteristics of normal socioemotional development. This perspective is useful for the purposes of assessment because it provides a framework for evaluating adaptive and maladaptive behaviors (Digdon & Gotlib, 1985; Zahn-Waxler, Cummings, McKnew, & Radke-Yarrow, 1984), behavioral systems (Cicchetti & Aber, 1986; Cicchetti & Schneider-Rosen, 1984), and developmental tasks (Sroufe & Rutter, 1984).

One of these, the developmental processes of infancy that are associated with attachment, has been well studied and shows that early attachment patterns play a critical role in the level of later adaptive functioning (del Carmen & Huffman, 1996; Egeland & Farber, 1984; Erikson, Egeland, & Sroufe, 1985; Heuber & Thomas, 1995). In addition, inadequate attachment between child and parent is associated with psychopathology in adolescence (Rosenstein & Horowitz, 1996) and possibly into adulthood (Ricks, 1985). As can be seen, in order to adequately represent the richness of human experience, a developmental perspective of psychopathology should consider a range of etiological factors associated with childhood maladaptive behavior. These include interactive dynamics such as caregiver responsivity, contingency, and reciprocity; a range of biological phenomena such as sensory processing, temperament, and regulatory capacities; and environmental influences that impact the caregiver including quality of social support and family setting. These variables are important in evaluating the characteristics of the child and caregiver and their relationship (Wieder, Jasnow, Greenspan, & Strauss, 1983).

With the numerous contributing perspectives on early emotional development, the challenge was to construct a comprehensive, integrated model that could take into account the many contributing factors. In order to meet this challenge, we developed an approach that focuses on the organizational level of personality along multiple dimensions and on

mediating processes or "structures." There are two assumptions that relate to this approach. One is that the capacity to organize experience is present very early in life and progresses to higher levels as the individual matures. The phase-specific higher levels in this context imply an ability to organize in stable patterns an ever-widening and complex range of experience. For example, it is now well documented that the infant is capable at birth, or shortly thereafter, of organizing experience in an adaptive fashion. He or she can respond to pleasure and displeasure (Lipsitt, 1966), and form intimate bonds and make visual discriminations (Klaus & Kennell, 1976; Meltzoff & Moore, 1977). Cycles and rhythms, such as sleep-wake and alertness states, can be organized (Sander, 1962). The infant evidences a variety of affects or affect proclivities (Ekman, 1972; Izard, 1978; Tomkins, 1963) and demonstrates organized social responses in conjunction with increasing neurophysiologic organization (Emde et al., 1976). It is interesting to note that this empirically documented view of the infant is, in a general sense, consistent with Freud's early hypotheses (1905; 1900; 1911) and Hartmann's postulation (1939) of an early undifferentiated organizational matrix. That the organization of experience broadens during the early months of life to reflect increases in the capacity to experiences and tolerate a range of stimuli, including responding in social interactions in stable and personal configurations, is also consistent with recent empirical data (Brazelton et al., 1974; Emde et al., 1976; Escalona, 1968; Murphy et al., 1976; Sander, 1962; Sroufe, Waters, & Matas, 1974; Stern, 1974a; Stern, 1974b). There are a number of indications that increasingly complex patterns continue to emerge as the infant develops. Between 7 and 12 months complex emotional responses, such as surprise (Charlesworth, 1969) and affiliation, wariness, and fear (Ainsworth, Bell, & Stayton, 1974; Bowlby, 1969; Sroufe & Waters, 1977), have been observed. Exploration and "refueling" patterns (Mahler, Pine, & Bergman, 1975), and behavior suggesting functional understanding of objects (Werner & Kaplan, 1963), have been observed in the middle to latter part of the second year of life, along with the eventual emergence of symbolic capacities (Bell, 1970; Gouin-Decarie, 1965; Piaget, 1962).

The interplay between age-appropriate experience and maturation of the central nervous system (CNS) ultimately determines the characteristics of this organizational capacity at each phase. The active and experiencing child uses his maturational capacities to engage the world in ever-changing and more complex ways.

The organizational level of experience may be delineated along a number of parameters, including age or phase appropriateness, range and depth (i.e., animate and inanimate, full range of affects and themes), stability (i.e., response to stress), and personal uniqueness.

In addition to a characteristic organizational level, a second assumption is that for each phase of development there are also certain characteristic types of experience (e.g., interests or wishes, fears, and curiosities) that play themselves out, so to speak, within this organizational structure. Here one looks at the specific drive-affect derivatives, including emotional and behavioral patterns, or, later, thoughts, concerns, inclinations, wishes, fears, and so forth. The type of experience is, in a sense, the drama the youngster is experiencing, whereas the organizational level might be viewed metaphorically as the stage upon which this drama is being played out. To carry this metaphor a step further, it is possible to imagine some stages that are large and stable and can therefore support a complex and intense drama. In comparison, other stages may be narrow or small, able only to contain a very restricted drama. Still other stages may have cracks in them and may crumble easily under the pressure of an intense, rich, and varied drama.

According to the developmental-structuralist approach, at each phase of development there are certain characteristics that define the experiential organizational capacity, that is, the stability and contour of the stage. At the same time, there are certain age-expectable dramas, themes characterized by their complexity, richness, depth, and content.

The developmental-structuralist approach is unique in an important respect. In focusing on levels and organizations of experience, it alerts the clinician to look not only for what the infant or toddler is evidencing (e.g., specific emotions or symptoms), but for what he or she is not evidencing. For example, the 8-month-old who is calm, alert, and enjoyable, but who has no capacity for discrimination or reciprocal social interchanges, may be of vastly more concern than an irritable, negativistic, food-refusing, night-awakening 8-month-old with age-appropriate capacities for differentiation and reciprocal social interchanges. In other words, each stage of development may be characterized according to "expected" organizational characteristics.

The formulated developmental stages do not exist in a vacuum. During development they are influenced by both constitutional and maturational factors, as well as environmental factors. Each stage, in fact, can be understood as resulting from specific caregiver-child interaction

patterns in which the child's behavior is influenced by his constitutional and maturational patterns and the caregiver is influenced by the family-cultural patterns.

This developmental model can be visualized with the infant's constitutional-maturational patterns on one side and the infant's environment, including caregivers, family, community, and culture, on the other side. Both of these sets of factors operate through the infant-caregiver relationship, which can be pictured in the middle. These factors and the infant-caregiver relationship, in turn, contribute to the organization of experience at each of six different developmental levels, which may be pictured just beneath the infant-caregiver relationship.

Each developmental level involves different tasks or goals. The relative effect of the constitutional-maturational, environmental, or interactive variables will, therefore, depend on and can only be understood in the context of the developmental level they relate to. The influencing variables, therefore, are best understood, not as they might be traditionally, as general influences on development or behavior, but as distinct and different influences on the six distinct developmental and experiential levels. For example, as a child is negotiating the formation of a relationship (engaging), his mother's tendency to be very intellectual and prefer talking over holding may make it relatively harder for him to become deeply engaged in emotional terms. If constitutionally he has slightly lower than average muscle tone and is hyposensitive with regard to touch and sound, his mother's intellectual and slightly aloof style may be doubly difficult for him, as neither she nor the child is able to take the initiative in engaging the other.

Let us assume, however, that he more or less negotiates this early phase of development. (Grandmother, who lives with him, as well as his father are very "wooing" caregivers.) At age 3, when the developmental phase and task is different, he may have an easier time, even though his mother hasn't changed. His intellectual mother is highly creative and enjoys pretend play as well as give-and-take logical discussions. No longer anxious about her son's dependency needs, she is more relaxed and quite available for play and chit-chat. The task is no longer simply one of forming a relationship but of learning to represent (or symbolize) experience and form categories and connections between these units of experience. Mother's verbal style is now quite helpful to him, especially given his need for lots of verbal interaction. In other words, the same caregiving pattern can have a very different impact, depending on the tasks of the particular developmental level. Each developmental level of experience is, therefore,

a reference point for the factors that influence development. There have been very useful intervention models that focus on specific influences such as the caregiver's feelings, fantasies or support system, or on certain phases of early development (Brazelton et al., 1979; Fraiberg, 1980; Provence, 1983; Provence et al., 1983).

What is potentially unique about this particular clinical and research model (Greenspan, 1992; Greenspan et al., 1987; Greenspan, 1989) is the ability it gives us to look at the back-and-forth influence of highly specific and verifiable constitutional-maturational factors on interactive and family patterns and vice versa in relationship to specific developmental processes (and to relate these processes to later developmental and psychopathologic disorders). The goal of this model is to look at all the major influences throughout the different stages of development. Genetic, biological, or environmental influences do not influence behavior directly, but influence either the child's or the caregiver's behavior, which, in turn, influences their interaction, which eventually leads to adaptive or maladaptive organizations at each developmental level. This model, therefore, provides a range of dynamic pathways through which influences can be exerted on the organization of the personality.

The Developmental Levels of Emotional Functioning

As indicated above, the developmental structuralist approach focuses attention on the way in which the infant and young child organize experience. There are six early organizational levels of experience. For each of these developmental levels, there are two ways of considering how the infant organizes experience. These are the interrelated dimensions of sensory and affective-thematic experience. These two dimensions and their clinical implications for normal development and disturbances in development will be described for each of the developmental-structuralist organizational levels.

Self-Regulation and Interest in the World (Homeostasis): 0–3 Months

The first level of development involves regulation and shared attention, that is, self-regulation and emerging interest in the world through sight,

sound, smell, touch, and taste. Children and adults build on this early developing set of capacities when they act to maintain a calm, alert, focused state, and organize behavior, affect, and thoughts. The infant is capable at birth or shortly thereafter of initial states of regulation to organize experience in an adaptive fashion. The infant's ability for regulation is suggested by a number of basic abilities involving forming cycles and establishing basic rhythms, perceiving and processing information, and exploring and responding to the world (Berlyne, 1960; Deci, 1977; Harlow, 1953; Hendrick, 1939; Hunt, 1965; White, 1963; Meltzoff et al., 1977; Sander, 1962).

The early regulation of arousal and physiological states is critical for successful adaptation to the environment. It is important in the modulation of physiological states including sleep-wake cycles and hunger and satiety. It is needed for mastery of sensory functions and for learning self-calming and emotional responsivity. It is also important for regulation of attentional capacities (Als, Lester, Tronick, & Brazelton, 1982; Brazelton et al., 1974; Field, 1981; Sroufe, 1979; Tronick, 1989). It is generally recognized that self-regulatory mechanisms are complex and develop as a result of physiological maturation, caregiver responsivity, and the infant's adaptation to environmental demands (Lachmann & Beebe, 1997; Lyons-Ruth & Zeanah, 1993; Rothbart & Derryberry, 1981; Tronick, 1989).

In the early stages of development, the caregiver normally provides sensory input through play and caretaking experiences such as dressing and bathing and soothes the young infant when distressed to facilitate state organization (Als, 1982). It is an interactive process of mutual coregulation whereby the infant uses the parent's physical and emotional state to organize himself (Feldman, Greenbaum, & Yirmiya, 1999; Sroufe, 1996). This synchronization of states that occurs between parent and child is the basis for affect attunement and is the precursor to social referencing and preverbal communication.

During this early stage, the infant learns to tolerate the intensity of arousal and to regulate his internal states so that he can maintain the interaction while gaining pleasure from it (Sroufe, 1979). This has been described as "affective tolerance," that is, the ability to maintain an optimal level of internal arousal while remaining engaged in the stimulation (Fogel, 1982). The parent first acts to help regulate this arousal, then works to facilitate the infant's responses once the infant can regulate himself. If the infant does not develop affective tolerance, withdrawal from arousing stimuli may occur with resulting challenges to the formation and stability

of relationships. Brazelton and his colleagues (1974) observed how the mother attempts to adjust her behavior to be timed with the infant's natural cycles. For example, mothers generally reduce their facial expressiveness when the infant gazes away, but will maintain their expressiveness when the infant looks at them (Kaye & Fogel, 1980).

Field (1977; 1980) proposed an "optimal stimulation" model of affect and interaction. If the mother provides too much or too little stimulation, the infant withdraws from the interaction. The optimal level varies considerably from one infant to the next and depends upon the infant's threshold for arousal, tolerance for stimulation, and ability to self-control arousal.

To systematize these observations and the results of our clinical work with a variety of infants and families, we have been able to describe a number of individual differences in constitutional-maturational characteristics that contribute to an infant and child's regulatory capacities. These patterns may change as one develops, however. They include

- Sensory reactivity, including hypo- and hyperreactivity in each sensory modality (tactile, auditory, visual, vestibular, olfactory);
- Sensory processing in each sensory modality (e.g., the capacity to decode sequences, configurations, or abstract patterns);
- Sensory affective reactivity and processing in each modality (e.g., the ability to process and react to degrees of affective intensity in a stable manner);
- Muscle tone and motor planning and sequencing.

The Sensory Organization

The infant's first task in the developmental-structuralist approach sequence is simultaneously to take an interest in the world and regulate himself. In order to compare the ability of certain infants to simultaneously regulate and take an interest in the world with those who cannot, it has been clinically useful to examine each sensory pathway individually as well as the range of sensory modalities available for phase-specific challenges.

As indicated, each sensory pathway may be (a) hyperarousable (e.g., the baby who overreacts to normal levels of sound, touch, or brightness); (b) hypoarousable (e.g., the baby who hears and sees but evidences no behavioral or observable affective response to routine sights and sounds—often described as the "floppy" baby with poor muscle tone who is unresponsive and

seemingly looks inward); or (c) neither hypo- nor hyperarousable but having a subtle type of early processing disorder (hypo- or hyperarousable babies may also have a processing difficulty). A processing disorder may presumably involve perception, modulation, and processing of the stimulus and/or integration of the stimulus with other sensory experiences (cross-sensory integration), with stored experience (action patterns or representations), or with motor proclivities. Although more immature in form, processing difficulties in infants may not be wholly dissimilar from the types of perceptual-motor or auditory-verbal processing problems we see in older children. In this context, the capacity of babies to habituate to and process the various inanimate sights and sounds may apply to the entire experiential realm of the child, including the affective-laden, interpersonal realm. It is important to note that the differences in sensory reactivity and processing were noted many years ago and continue to be discussed in the occupational therapy literature (Ayres, 1964).

If an individual sensory pathway is not functioning optimally, then the range of sensory experience available to the infant is limited. This limitation, in part, determines the options or strategies the infant can employ and the type of sensory experience that will be organized. Some babies can employ the full range of sensory capacities. At the stage of regulation and interest in the world (i.e., homeostasis), for example, one can observe that such babies look at mother's face or an interesting object and follow it. When this baby is upset, the opportunity to look at mother helps the baby become calm and happy (i.e., a calm smile). Similarly, a soothing voice, a gentle touch, rhythmic rocking, or a shift in position (offering vestibular and proprioceptive stimulation) can also help such a baby to relax, organize, and self-regulate. Also, there are babies who only functionally employ one or two sensory modalities. We have observed babies who brighten up, alert, and calm to visual experience, but who are either relatively unresponsive, become hyperexcitable, or appear to become "confused" with auditory stimuli (a 2-month-old baby may be operationally defined as confused when instead of looking toward a normal high-pitched maternal voice and alerting he makes some random motor movements—suggesting that the stimulus has been taken in—looks past the object repeatedly, and continues his random movements). Other babies appear to use vision and hearing to self-regulate and take an interest in the world but have a more difficult time with touch and movement. They often become irritable even with gentle stroking and are calm only when held horizontally (they become hyperaroused when held upright). Still

other babies calm down only when rocked to their own heart rate, respiratory rate, or mother's heart rate. Studies of the role of vestibular and proprioceptive pathways in psychopathology in infancy are very important areas for future research.

As babies use a range of sensory pathways, they also integrate experiences across the senses (Spelke & Owsley, 1979). Yet, there are babies who are able to use each sensory pathway but have difficulty, for example, integrating vision and hearing. They can alert to a sound or a visual cue but are not able to turn and look at a stimulus that offers visual and auditory information at the same time. Instead, they appear confused and may even have active gaze aversion or go into a pattern of extensor rigidity and avoidance.

As higher levels of sensory integration are considered, one may also consider the difference between perception as a general construct and sensory-specific perceptions. In this discussion, the focus will be on individual sensory pathways with the understanding that as sensory and affective information is processed, it can be considered in terms of sensory-specific perceptions and more integrated perceptions.

The sensory pathways are usually observed in the context of sensori-motor patterns. Turning toward the stimulus or brightening and alerting involve motor "outputs." There are babies who have difficulties in the way they integrate their sensory experience with motor output. The most obvious case is a baby with severe motor difficulties. At a subtle level, it is possible to observe compromises in such basic abilities as self-consoling or nuzzling in the corner of mother's neck or relaxing to rhythmic rocking. In this context, Escalona's classic descriptions (1968) of babies with multiple sensory hypersensitivities require further study as part of a broader approach to assessing subtle difficulties in each sensory pathway, as well as associated master patterns.

Thematic Affective Organization

At this first stage the affective-thematic organizations can support the phase-specific task, which in turn can organize discrete affective-thematic inclinations into more integrated organizations. For example, the baby who wants to calm down is, at the same time, learning the means for obtaining dependency and comfort. The baby who is interested in the world can, with a certain posture or glance, often let his primary caregiver know he is ready for interesting visual, auditory, and tactile sensations.

In this first stage, there are babies who cannot organize their affective-thematic proclivities in terms of the phase-specific tasks. Babies who are uncomfortable with dependency often evidence specific sensory hyper-sensitivities or higher-level integrating problems, as well as maladaptive infant-caregiver interactions. Babies with a tendency toward hyper- or hypoarousal may not be able to organize the affective-thematic domains of joy, pleasure, and exploration. Instead, they may evidence apathy and withdrawal or a total disregard for certain sensory realms while over-focusing on others (e.g., babies who stare at an inanimate object while ignoring the human world).

Children with sensorimotor dysfunction typically have difficulty utilizing the range of sensory experiences available to them for learning, and as a result may be unable to organize purposeful, goal-directed movement as well as socially adaptive behaviors. These children oftentimes have maladaptive responses in forming affective relationships or attachments. For instance, an infant who is hyper-sensitive to touch, sound, and movement may avoid tactile contact, being held and moved in space, and may avert its gaze to avoid face-to-face interactions. A child may be unable to play with peers because of problems sequencing actions, a high need for physical contact, or inappropriate affect during interactions because of low muscle tone or poor sensorimotor feedback. Both are examples of how sensorimotor dysfunction may affect emotional behaviors

In addition, difficulties with muscle tone or coordination can affect the infant's ability to signal interest in the world. For example, the young infant who arches away from the mother's breast during feeding will affect the level of engagement that occurs during a normal feeding experience. In turn, these problems affect the caregiver's ability to consistently respond back or respond inconsistently to their infant's signal, particularly when they do not understand what the baby's responses mean. The mother whose baby arches away every time he is held may feel that she is a less capable mother, particularly if the baby's tactile hypersensitivities or increased muscle tone are not identified.

Some investigators explore sensory, motor, and affective differences in terms of temperament, which tends to look at overall patterns of behavior. Temperamental differences have been shown to influence the organization and regulation of inter/intrapersonal processes (Campos et al., 1989). Temperamental qualities characterizing the child as "difficult," for example, have been linked to later psychopathology (Thomas & Chess, 1984). The difficult temperament might create challenges in self-regula-

tory processes and potentially adversely affect infant-caregiver interaction. Of course, neither sensory nor temperamental characteristics alone necessarily predict pathology. As a transactional perspective indicates, the effects of particular sensory or temperamental characteristics can be mediated by the attention of a sensitive, responsive caregiver

Even when the infant is quite competent from a regulatory standpoint, a caregiver might fail to draw a baby into a regulating relationship. For example, dysregulation may occur with a caregiver who is exceedingly depressed or who is so self-absorbed that there is no soothing wooing of the new infant. A caregiver who is impatient with or threatened by the infant's manifestation of sensory or temperamental sensitivity and who reacts with abuse, withdrawal, or other maladaptive means may encourage infant reliance on ineffective patterns of behavior and further contribute to the infant's inability to achieve self-regulation.

Clinical Features

Sensory reactivity (hypo- or hyper-) and sensory processing can be observed clinically. Is the child or adult hyper- or hyposensitive to touch or sound? Do sounds of motors or of a noisy party overwhelm the individual? Is a gentle touch on the hand or face reacted to by a startled withdrawal? The same question must be asked in terms of vision and movement in space. In addition, in each sensory modality processing of sensations occurs. Does the 4-month-old "process" a complicated pattern of information input or only a simple one? Does the 4-year-old have a receptive language problem and is therefore unable to sequence words he hears together or follow complex directions? Is the young adult prone to get lost in his own fantasies because he has to work extra hard to decode the complex verbal productions of others? Is the 3-year-old an early comprehender and talker, but slower in visual-spatial processing? If spatial patterns are poorly comprehended, a child may be facile with words, sensitive to every emotional nuance, yet have no context, never see the "forest." Such children tend to get lost in the "trees." In the clinician's office, they may forget where the door is or have a hard time picturing that mother is only a few feet away in the waiting room. Similarly, adults may find it difficult to follow instructions or easily get lost in new settings. They also may have difficulty with seeing the emotional "big picture." For example, if the mother is angry, the child may think the earth is opening up and he is falling in, because he cannot comprehend that she was nice

before and will probably be nice again. Similarly, adults may be over-whelmed with the emotion of the moment, losing sight of the past or future.

It is also necessary to look at the motor system, including muscle tone, motor planning (fine and gross), and postural control. A picture of the motor system will be provided by observing how a person sits or runs; maintains posture; holds a crayon or pen; hops, scribbles, or draws; and makes rapid alternating movements. Security in regulating and control-ling one's body plays an important role in how one uses gestures to com-municate. Regulatory motor patterns also include the ability to regulate dependency (being close or far away); the confidence in regulating aggression ("Can I control my hand that wants to hit?"); and the ability to comprehend social sequences and follow through on tasks or work activities.

Deficits, Distortions, and Constrictions

The constitutional and maturational variables described above (i.e., regu-latory factors) can contribute to difficulties with attending, remaining calm, and organizing or modulating affect or behavior and, therefore, can be a prominent feature of a disorder of behavior, affect, or thought. Such a disorder may be considered a "regulatory disorder" (Greenspan, 1992). Regulatory differences sometimes are attributed to "lack of motivation" or emotional conflicts. Observing carefully and obtaining a history of reg-ulatory patterns will make it possible to separate maturational variations from other factors and also observe how many factors often operate to-gether. In general, excessive hypersensitivities and sensory underreactiv-ity with a tendency toward withdrawal and apathy illustrate some of the dramatic, maladaptive patterns in this first stage of development. If there are maladaptive environmental accommodations, these early patterns may form the basis for later disorders, including avoidance of the human world, and defects in such basic personality functions as perception, inte-gration, regulation, and motility.

In many conditions these regulatory capacities are not well estab-lished. For example, the child with severe attentional difficulties may not be able to process information well. Some children with mild attentional difficulties have problems more in one sensory mode than in another. Some children with attentional problems are more distracted by sounds, others by visual stimuli, whereas still others have tactile defensiveness, a

pattern that is not described well in the psychiatric literature. Sensory pro-cessing difficulties are also seen in child and adult schizophrenic popula-tions. Separating and studying each processing capacity in terms of the sensory pathway involved, in relation to both impersonal and affective stimuli (i.e., the auditory, tactile, vestibular, olfactory, and proprioceptive systems, etc.) is an important research area.

Sensory processing difficulties may also involve problems in making discriminations. In addition to a sensory system being hypo- or hyper-arousable, we have observed infants in the first few months of life who, al-though not at these extremes, seem unable to tune in to the environment. When mother talks to them, instead of decoding her rhythmic sound and brightening up (as most infants do), they almost look confused. Clinically, we have observed that this is present in some children with regard to one sensory pathway, but not another. For example, an infant with intact hear-ing, unable to focus on rhythmic sound, may be able to focus on facial ges-turing. When an infant looks confused in reaction to vocal stimuli, we may coach a mother to slow down, to talk very distinctly, not to introduce too much novelty too quickly (most infants love novelty), and to use lots of animated facial expressions, movements (to encourage the use of vision), and tactile sensations. Often this infant will begin to become alert, brighten up, and become engaged.

It is instructive to consider what happened to deaf children before they were diagnosed early in infancy. By 2 years, many often looked very with-drawn (some were diagnosed as autistic) and were functionally retarded as well. The early diagnosis of deafness led to the introduction of sensory input through the intact modes—visual, tactile, olfactory. With these compensatory experiences, deaf children developed well both cognitively and emotionally. In other words, it may be that critical ego functions fol-low a certain required sequence of experiential inputs.

What may have happened with many partially or fully deaf babies, however, was that their mothers did not know their infants could not hear. A concerned mother would understandably become anxious if she was not getting a brightening response for her new infant. She may have then talked even more, louder, and faster. Becoming discouraged, she may have become so anxious that she rigidly and repetitively tried the same pattern. Other sensory modes were not experimented with. The mother in this ex-ample is overwhelming the nonfunctioning auditory mode, not trying other modes, and her infant becomes more and more confused. On the other hand, the youngster who is hyporeactive may require a highly

energetic caregiver. The fit is always a factor. By profiling individual sensory processing differences and motor and affect patterns in infancy, however, it may become possible through counseling to improve the flexibility or intuitive patterns of the caregiver. How well the "informed" environment can find a unique way to provide the stage-specific experiences even for the infants with significant maturational differences will be the focus of future research and is certainly, at this time, an open question. My clinical hunch is that we have not yet found the limits of human adaptability.

Forming Relationships, Attachment, and Engagement: 2–7 Months

Another early level concerns engagement, or a sense of relatedness, a lifelong capacity. Once the infant has achieved some capacity for regulation and interest in the world between 2 and 4 months of age, it becomes more engaged in social and emotional interactions. There is greater ability to respond to the external environment and to form a special relationship with significant primary caregivers. The infant's capacity for engagement is supported by early maturational abilities for selectively focusing on the human face and voice and for processing and organizing information from his senses (Meltzoff, 1985; Papousek & Papousek, 1979; Stern, 1985). A sense of shared humanity, a type of synchrony of relating, is evident in the way both the infant and parent use their senses, motor systems, and affects to resonate with one another (Scaife & Bruner, 1975). The early quality of engagement has implications for later attachment patterns and behavior (Ainsworth et al., 1974; Bates, Maslin, & Frankel, 1985; Belsky, Rovine, & Taylor, 1984; Grossmann, Grossmann, Spangler, Suess, & Unzner, 1985; Lewis & Feiring 1987; Miyake, Chen, & Campos, 1985; Pederson et al., 1990).

Bowlby (1969) described attachment as the affective bond between an infant and his or her primary caregiver. The infant is biologically prepared to use the primary caregiver as a secure base while exploring the environment, turning to the caregiver for comfort when challenges are experienced. The concept of attachment has been expanded to include the infant's capacity to self-regulate emotions and levels of arousal within the context of the parent-child relationship (Sroufe, 1996). When the infant experiences distress, he or she signals the caregiver and a sensitive and re-

sponsive caregiver reads the infant's signals and responds by regulating the infant's emotions.

Attachment or relating with the caregiver is important not only because it represents the capacity to form human relationships, but also because it's been shown that atypical attachment patterns can have a negative impact on developmental outcomes (Carew, 1980). Longitudinal studies have found that securely attached children tend to have better emotional adaptability, social skills, and cognitive functioning (Cassidy & Shaver, 1999). During the school-aged and adolescent years, children who were securely attached as infants were more likely to be accepted by their peers and were better able to form intimate relationships with peers (Sroufe, Egeland, & Carlson, 1999). In addition, a secure attachment seems to provide a protective mechanism for children whose families experience a high level of stress (Egeland & Kreutzer, 1991). The key element that underlies a secure attachment is sensitive and responsive caregiving (Ainsworth, Blehar, Waters, & Wall, 1978; De Wolff & van Ijzendoorn, 1997).

Attachment has a specific research meaning in terms of the studies cited above as well as others. In a clinical as well as normative developmental context, however, it is useful to consider a broader framework for relationships involving the overall pattern of relating between an infant and caregiver. As we will discuss, this involves the depth of pleasure, range of feelings, and meanings given to relationships. The processes that define relationships go significantly beyond definitions used in various research paradigms (Greenspan, 1997b).

The Sensory Organization

In this stage, which involves a growing intimacy with the primary caregiver(s), one can observe babies who are adaptively able to employ all their senses to orchestrate highly pleasurable affect in their relationship with their primary caregiver(s). The baby with a beautiful smile, looking at and listening to mother, experiencing her gentle touch and rhythmic movement, and responding to her voice with synchronous mouth and arm and leg movements is perhaps the most vivid example. Clinically, however, we observe babies who are not able to employ their senses to form an affective relationship with the human world. The most extreme case is where a baby actively avoids sensory and, therefore, affective contact with the human world. Human sounds, touch, and even scents are avoided either

with chronic gaze aversion, recoiling, flat affect, or random or nonsynchronous patterns of brightening and alerting. We also observe babies who use one or another sensory pathway in the context of a pleasurable relationship with the human world but cannot orchestrate the full range and depth of sensory experience. The baby who listens to mother's voice with a smile but gaze averts and looks pained at the sight of her face is such an example.

Thematic Affective Organization

Forming an attachment or relationship organizes a number of discrete affective proclivities—comfort, dependency, pleasure, and joy, as well as assertiveness and curiosity in the context of a pleasurable caregiver-infant relationship. In the adaptive pattern, protest and anger are organized along with the expected positive affects as part of a baby's emotional interest in the primary caregiver. A healthy 4-month-old can, as part of his repertoire, become negative, but then also quickly return to mother's beautiful smiles, loving glances, and comforting. Relationship patterns, once formed, continue and further develop throughout the course of life.

Infants and children can already have major limitations in certain affect proclivities. Rather than evidencing joy, enthusiasm, or pleasure with their caregivers, they may instead evidence a flat affect. Similarly, rather than evidencing (periodic) assertive, curious, protesting, or angry behavior in relationship to their primary caregiver, they may only look very compliant and give shallow smiles. In addition to being constricted in their affective range, babies may also evidence a limitation in their organizational stability. An example is a baby who, after hearing a loud noise, cannot return to his earlier interests in the primary caregiver. Where environmental circumstances are unfavorable or for other reasons development continues to be disordered, early attachment or relationship difficulties may occur. If these are severe enough, they may form the basis for an ongoing deficit in the baby's capacity to form affective human relationships and to form the basic personality structures and functions that depend on the internal organization of human experience.

Clinical Features

Most clinicians have a great deal of experience in monitoring the quality of relatedness. But sometimes the clinician ignores the quality of engage-

ment while working on specific ideas or thoughts, so that indifference, negative feelings, or impersonal or aloof patterns continue longer than necessary.

For example, the child who walks in and goes right for the toys, ignoring the clinician, is different from the child who looks at the clinician with a twinkle in his eye and points to the toys, waiting for a warm accepting smile. The adult who strides in the office and makes a beeline for the new painting on the wall with nary a wave or a nod in the therapist's direction may be eschewing any initial sense of engagement to cement a relationship. One observes if there is a range of affects used for trying to establish a sense of connectedness and relatedness—warmth, pleasure, a sense of intimacy and trust.

Deficits, Distortions, and Constrictions

As indicated earlier, within the developmental structuralist framework, negotiation of these first two stages—achievement of homeostasis (i.e., regulation and interest in the world) and achievement of an attachment to a primary caregiver—establishes the infant's ability to engage in the human world. Accordingly, variations in the capacity for engagement influenced by physical and/or ecological conditions play an important role in the emergence of psychopathology in later childhood and adulthood (Greenspan, 1989). If the early experience of the world is aversive, the affective interest in the human world may be compromised. Significant compromises in the attachment process are seen in autistic patterns, in certain types of withdrawn and regressed schizophrenics, and, intermittently, in children who are diagnosed as having pervasive developmental disturbances.

We also see shallow attachments. There is some involvement with the human world, but it is without positive affect or emotional depth. We see a compromise in the depth of human connectedness in some of the narcissistic character disorders, illustrating a subtle deficit in the range of emotion incorporated into an attachment pattern. A severe lack of regard for human relationships is seen in what used to be called the chronic psychopathic personality disorder (now the sociopathic or antisocial personality disturbance). Although some individuals are involved in sociopathic behavior because of neurotic conflicts or anxiety (i.e., acting out), in the primary sociopathic disturbances, there is a failure to see the human world as human. Human beings are seen as concrete objects, only as a means to

concrete gratifications. Studies of hardened repeat offenders with histories of violent crimes against other individuals (i.e., showing a total disregard for other humans as human) should observe, in addition to the reports on neurologic problems and early abuse, the degree to which there are—and the nature of—different types of compromises in early relationship patterns (e.g., multiple foster care placements, disturbed and withdrawn parents, or unusual constitutional tendencies that interfered with the formation of warm relationships).

Bowlby (1958) and Main, Kaplan, and Cassidy (1985) have hypothesized that early disturbances in the attachment relationship between mother and child contribute to a child's working model of self as unlovable and of others as unresponsive and/or rejecting. The deleterious effects of deficient or disturbed mother-infant attachment on cognitive, social, and emotional development has been documented by many others as well (Bemesderfer et al., 1983; Davenport, Zahn-Waxler, Adland, & Mayfield, 1984; Egeland et al., 1984; Gaensbauer, Harmon, Cytryn, & McKnew, 1984).

In addition to increasing the possibility of developing a deficit in his or her capacity to form affective human relationships (Bowlby, 1958; Bretherton & Waters, 1985) as well as an impairment in those basic personality structures that depend on an internal organization of human experience (Greenspan & Lourie, 1981; Greenspan & Porges, 1984), problems in forming relationships may increase the risks that an infant may experience personal helplessness. Because of sensory deficits, temperamental characteristics, or exposure to repeated noncontingent situations, he or she may be unable to establish control over the environment during interactions with his or her caregiver (Lyons-Ruth & Jacobovitz, 1999; Weisz & Stipek, 1982; Zekoski, O'Hara, & Wills, 1987). Maternal depression (Gaensbauer, 1982; Radke-Yarrow, Cummings, Kuczynski, & Chapman, 1985), unstable caregiving environments (Gaensbauer, 1982), and physical maltreatment (Egeland & Sroufe, 1981; Schneider-Rosen & Cicchetti, 1984) are also likely to have a negative impact on caregiver-child relationships.

When children experience disorganized patterns of relating, they are likely to suffer from marked impairments in emotional, social, and cognitive functioning. This disorganized pattern is associated with the caregiver's frightening, frightened, or disoriented behavior with the child (Main & Hesse, 1990). Unresolved trauma or grief related to childhood experiences often causes the disoriented response in the parent (Hesse,

1999). The child experiences the parent as a source of alarm, fear, or terror rather than as soothing and nurturing. One type of psychopathology that has been suggested when disorganized attachment occurred during infancy is "dissociation," whereby the person does not function in an organized and coherent manner (Carlson, 1998; Ogawa, Sroufe, Weinfield, Carlson, & Egeland, 1997). Adolescents with disorganized attachments as infants were found to be at high risk for hostile and violent behavior (Lyons-Ruth et al., 1999) in addition to being at risk for psychopathology (Carlson, 1998). In addition, children with anxious attachments were more likely to experience behavioral and emotional problems from preschool through adolescence (Warren, Huston, Egeland, & Sroufe, 1997).

Two-Way, Purposeful Communication (Somatopsychological Differentiation): 3–10 Months

The next stage involves purposeful communication. It involves intentional, nonverbal communications or gestures. These gestures include affective communication, facial expressions, arm and leg movements, vocalizations, and spinal posture. From the middle of the first year of life onward, individuals rely on gestures to communicate. Initially during the stage of purposeful communication, simple reciprocal gestures such as head nods, smiles or other affective expressions, and movement patterns serve a boundary-defining role. The "me" communicates a wish or intention and the "other" or "you" communicates back some confirmation, acknowledgment, or elaboration on that wish or intention.

The stage of two-way, causal, intentional communication indicates processes occurring at the somatic (sensorimotor) and emerging psychological levels. It is evidenced in the infant's growing ability to discriminate primary caregivers from others and differentiate his or her own actions from their consequences—affectively, somatically, behaviorally, and interpersonally.

These capacities are first seen as the infant develops complex patterns of communication in the context of his or her primary human relationship. Parallel with development of the infant's relationship to the inanimate world in which basic schemes of causality (Piaget, 1962) are being developed, the infant becomes capable of complicated human emotional communication (Brazelton et al., 1974; Charlesworth, 1969; Stern, 1974a;

Tennes, Emde, Kisley, & Metcalf, 1972). There is both a historic and newly emerging consensus among clinicians, developmental observers, and researchers that affects are used for intentional communication (Bowlby, 1973; Brazelton & Cramer, 1990; Mahler et al., 1975; Osofsky & Eberhart-Wright, 1988; Spitz, 1965; Stern, 1985; Winnicott, 1965) and that these affective patterns, for example, for happiness, anger, fear, surprise, and disgust, are similar in different cultures and in both children and adults (Campos, Barrett, Lamb, Goldsmith, & Stenberg, 1983; Darwin, 1872; Ekman, 1972; Izard, 1971). Intentional communication, which involves both intuiting and responding to the caregiver's emotional cues, gradually takes on qualities that are particular to relationships, family, and culture (Brazelton et al., 1979; Bruner, 1982; Feinman & Lewis, 1983; Kaye, 1982; Kimmert, Campos, Sorce, Emde, & Svejda, 1983; Kleinman, 1986; Markus & Kitayama, 1990; Schweder, Mahapatra, & Miller, 1987; Stern, 1977; Trevarthen, 1979; Tronick, 1980).

Kopp (1987; 1989) further elaborates that during this time, the infant learns to modify actions in relation to events and object characteristics. According to Kopp, at approximately 9 months of age the infant shows intentionality in the context of an awareness of situations. For example, the baby learns to use verbal and contextual cues to distinguish between father putting on his coat to go to work or to take her for a stroller ride.

When there have been distortions in the emotional communication process, as occurs when a mother responds in a mechanical, remote manner or projects some of her own dependent feelings onto her infant, the infant may not learn to appreciate causal relationships between people at the level of compassionate and intimate feelings. This situation can occur, even though causality seems to be developing in terms of the inanimate world and the impersonal human world.

Sensory Organization

With the task during this stage to develop the capacity for cause-and-effect, or means-end type communications, we observe even more profoundly the differential use of the senses. Some babies do not possess the capacity to orchestrate their sensory experiences in an interactive cause-and-effect pattern. A look and a smile on mother's part does not lead to a consequential look, smile, vocalization, or gross motor movement on baby's part. This baby may perceive the sensory experiences mother is making available but seems unable to organize these experiences, and ei-

ther looks past mother or evidences random motor patterns. We also observe babies who can operate in a cause-and-effect manner in one sensory pathway but not another. For example, when presented with an object, they may clearly look at the object in a purposeful way and then examine it. However, when presented with an interesting auditory stimulus, instead of responding vocally or reaching toward the person or the object, the infant behaves chaotically with increased motor activity and discharge-type behavior, such as banging and flailing. Similarly, with tactile experience, some babies, instead of touching mother's hand when she is stroking their abdomen, begin evidencing random-seeming or chaotic motor responses that appear unrelated to the gentle stimulus. We observe even more profoundly the differential use of the senses as infants are now also learning to "process" information in each sensory mode and between modes in terms of seeing relations between elements in a pattern. For example, some babies learn quickly and some slowly that a sound leads to a sound or a look to a look. The implications for later learning problems of certain sensory pathways not fully becoming incorporated into a cause-and-effect level of behavioral organization are intriguing to consider (e.g., the differences between children with auditory-verbal abstracting and sequencing problems and those with visual-spatial problems). In organizing cause-and-effect type communications, a compromise in a sensory pathway not only limits the strategies available for tackling this new challenge but also may restrict the sensory modalities that become organized at this new development level. Motor differences, such as high or low muscle tone or lags in motor development or in motor planning, will also obviously influence the infant's ability to signal his wishes. In organizing cause-and-effect type communications, therefore, a compromise in a sensory or motor pathway not only limits the strategies available for tackling this new challenge, but also may restrict the sensory and motor modalities that become organized at this new developmental level and, as will be discussed, the associated drive affect patterns as well.

As babies learn to orchestrate their senses in the context of cause-and-effect type interactions, we observe an interesting clinical phenomenon—in relationship to what has been described in the early neurological literature as "proximal" and "distal" modes. At this time, we may begin seeing a shift toward distal rather than proximal modes of communication. Proximal modes of communication may be thought of as direct physical contact, such as holding, rocking, touching, and so forth. Distal modes may be thought of as involving communication that occurs through

vision, auditory cueing, and affect signaling. The distal modes can obviously occur across space, whereas the proximal modes require, as the word implies, physical closeness. The crawling 8-month-old can remain in emotional communication with his primary caregiver through various reciprocal glances, vocalizations, and affect gestures. Some babies, however, seem to rely on proximal modes for a sense of security. Early limitations in negotiating space will be seen later on to affect the capacity to construct internal representations.

Thematic-Affective Organization

At this stage the full range of affective-thematic proclivities, evident in the attachment phase, become organized in the context of cause-and-effect (means-end) interchanges. The baby joyfully smiles or reaches out in response to a motor movement or affective signal, such as a funny look from the mother, in a reciprocal exchange.

If one divides the emotional terrain into its parts, one can see cause-and-effect signaling with the full range of emotions. In terms of dependency, the 8-month-old can make overtures to be cuddled or held. He shows pleasure with beatific smiles and love of touching (if he does not have a tactile sensitivity). There is also curiosity and assertiveness as the 8-month-old reaches for a rattle in mom's hand. There is also anger and protest as he throws his food on the floor in a deliberate, intentional manner and looks at his caregiver as if to say, "What are you gonna do now?" There is protest, even defiance (e.g., biting, banging, and sometimes butting, as an expression of anger because at 8 months children have better motor control of their mouths, heads, and necks than of their arms and hands).

Where the caregiver does not respond to the baby's signal, such as returning a smile or a glance, we have observed that the baby's affective-thematic inclinations may not evidence this differentiated organization. Instead he or she remain either synchronous, as in the attachment phase, or shift from synchrony to a more random quality. The expected range may be present but not subordinated into a cause-and-effect interchange.

There are also many babies who, because of a lack of reciprocal responses from their caregiver, seemingly evidence affective dampening or flatness and a hint of despondency or sadness. This may occur even after the baby has shown a joyfulness and an adaptive attachment. In some cases at least, it seems as though when not offered the phase-specific "experi-

ential nutrients" (the cause-and-effect interactions he is now capable of), but only the earlier forms of relatedness, the baby begins a pattern of withdrawal and affective flattening. It is as though he needs to be met at his own level to maintain his affective-thematic range. Most interesting are the subtle cases where the baby can reciprocate certain affects and themes, such as pleasure and dependency, but not others, such as assertiveness, curiosity, and protest. Depending on the baby's own maturational tendencies and the specificity of the consequences in the caregiving environment, one can imagine how this uneven development occurs. For example, caregivers who are uncomfortable with dependency and closeness may not afford opportunities for purposeful reciprocal interactions in this domain but may, on the other hand, be quite "causal" in less intimate domains of assertion and protest.

The baby's own affective-thematic "sending power," and the degree of differential consequences he is able to elicit, may have important implications for how he differentiates his own internal affective-thematic life (as well as how he organizes these dimensions at the representational or symbolic level later on).

Clinical Features

During an interview, a child or adult demonstrates mastery of this stage by using purposeful gestures, such as facial expressions, motor gestures (showing you something), or vocalizations. Aimless behavior, misreading of the other person's cues, fragmented islands of purposeful interaction, together with aimless or self-absorbed behavior, indicate challenges at this level. In addition, the ability to be purposeful around some affects, but not others (i.e., around love, but not assertiveness), also indicates limitations.

Deficits, Distortions, and Constrictions

As indicated, early in this stage an infant seems capable of many human emotional expressions. What determines whether these affective inclinations develop and become differentiated from each other or remain undifferentiated, so that eventually pleasure, dependency, and aggression cannot be experienced as separate from one another? During the 4- to 8-month phase, the differential reciprocal signaling of the caregiver tells the child that pleasure is different from pain, that hunger for food is different from hunger to be picked up, that assertiveness is different from

aggressiveness, and so forth. If each of the infant's feelings and expressions receives a different empathetic and overt response from the caregiver, the child experiences each of his own inclinations. Hilda Bruch (1973) anticipated what we now observe directly when she suggested that in some of the primary eating disturbances the dyadic signal system was not well formed because caregivers were rigid and unresponsive to the child's communications. For example, the child never learned to distinguish basic physical hunger from other sensations, such as dependency needs.

Therefore, during this stage, the affect system is differentiated to the degree to which the caregiving environment subtly reads the baby's emotional signals. Some infants do not experience reciprocity at all; others experience it selectively and have selective limitations. No family will be equally sensitive and responsive in all areas. Some families are conflicted around dependency, and others around aggression. Thus, there will be more anxiety in some areas than in others, and children will receive different feedback for different emotional areas. Although this is, in part, what makes people different, when a whole area like dependency, pleasure, or exploration does not receive reciprocal, purposeful cause-and-effect feedback, early presymbolic (prerepresentational) differentiations may be limited.

It is also useful to think of this stage of development as a first step in reality testing. At this time, prerepresentational causality is established. The child is learning that reaching out, smiling, vocalizing, pleasurable affect, and aggressive affect all have their consequences. Causality is the sense of one's own behavior and emotions as having consequences. Cause-and-effect experiences teach a child that the world is a purposeful place. When cause-and-effect behavioral patterns do not occur, the most fundamental aspect of the sense of causality may be compromised. Later in development, ideas or representations are also organized according to the cause-and-effect patterns. It may prove interesting to separate psychotic patients who have a failure of reality testing at the level of behavioral causality (4–8 months) from those who have a failure of reality testing at the later representational level (the 2 to 4-year level of representational causality). For example, some psychotic individuals tend to think and talk irrationally (they can be hallucinating, delusional, and have thought disorders), but they behave realistically. Other individuals talk in an organized way, but at the behavioral level, they seem to operate in an irrational way. It may prove useful, therefore, to consider two levels of reality testing and related disorders.

At the stage of somatopsychological differentiation, the fundamental deficit is in reality testing and basic causality. There are also subtle deficits, which may be part of a lack of differentiation along a particular emotional-thematic proclivity. In various character disturbances and borderline conditions, we observe patients who are undifferentiated when it comes to aggression but not dependency, or vice versa. Certain areas of internal life remain relatively undifferentiated; yet in other areas, differentiation and reality testing are progressing. This uneven pattern is part of many definitions of borderline syndromes.

A variety of symptoms may be seen in relationship to problems at this stage. They include developmental delays in sensorimotor functioning, apathy, intense chronic fear, clinging, lack of explorativeness and curiosity, lack of emotional reactions to significant caregivers, biting, chronic crying and irritability, and difficulties with sleeping and eating. Additional symptoms may be evident if, secondary to the lack of forming differentiated patterns, there are compromises in the infant-primary caregiver relationship (e.g., the infant becomes frustrated and irritable as his new capacities for contingent interactions are ignored or misread). If the basic comforting and soothing functions that support the baby's sense of security begin to falter, we may then see compromises in attachment and regulatory patterns leading to physiologic disorders and interferences in already achieved rhythms and cycles such as sleep and hunger. Where disorders of differentiation are severe and are not reversed during later development, they may set the foundation for later disorders. These disorders may include primary personality (ego) defects in reality testing, the organization and perception of communication and thought, the perception and regulation of affects, and the integration of affects, action, and thought.

Behavioral Organization, Problem-Solving, and Internalization (A Complex Sense Of Self): 9–18 Months

The next stage involves the child's capacity for engaging in a continuous flow of complex organized problem-solving interactions (e.g., taking mom to the refrigerator and pointing to the juice) and the formation of a presymbolic sense of self. With appropriate reading of cues and differential responses, the infant's or toddler's behavioral repertoire becomes complicated, and communications take on more organized, meaningful configurations. By 12 months of age, the infant is connecting behavioral

units into larger organizations as he or she exhibits complex emotional responses such as affiliation, wariness, and fear (Ainsworth et al., 1974; Ainsworth et al., 1978; Bowlby, 1969; Sroufe et al., 1977). As the toddler approaches the second year of life, in the context of the practicing subphase of the development of individuation (Mahler et al., 1975), there is an increased capacity for forming original behavioral schemes (Piaget, 1962), imitative activity and intentionality, and behavior suggesting functional understanding of objects (Werner et al., 1963).

It is recognized that at this stage the infant takes a more active role in developing and maintaining the reciprocal relationship with his/her parent (Bell, 1977; Goldberg, 1977; Reingold, 1969). In addition, much has been written about the growing complexity of the reciprocal dyadic interaction (Cicchetti et al., 1984; Greenspan et al., 1984; Talberg, Couto, O'Donnell, & Cuoto Rosa, 1988; Tronick & Gianno, Jr., 1986). These types of complex interactions enable the child to utilize and respond to social cues and eventually achieve a sense of competence as an autonomous being in relationship with a significant other (Brazelton et al., 1979; Lester, Hoffman, & Brazelton, 1985).

There is now in evidence, therefore, a stage of behavioral organization or a complex sense of self as interactions become more complex and social patterns involve many circles of intentional communication that negotiate intimacy exploration, aggression, and limit setting, for example, using emotional signals to figure out if a behavior is acceptable or not (Dunn, 1988; Emde, Johnson, & Easterbrooks, 1988; Kagan, 1981; Radke-Yarrow, Zahn-Waxler, & Chapman, 1983; Zahn-Waxler & Radke-Yarrow, 1982).

Sensory Organization

This stage involves a baby's ability to sequence together many cause-and-effect units into a chain or an organized behavioral pattern (e.g., the 14-month-old who can take mother's hand, walk her to the refrigerator, bang on the door, and, when the door is opened, point to the desired food). Wish and intention are organized under a complex behavioral pattern. This organized behavioral pattern can be viewed as a task that involves coordinated and orchestrated use of the senses. Here the toddler who is capable of using vision and hearing to perceive various vocal and facial gestures, postural cues, and complex affect signals is able to extract relevant information from his objects and organize this information at new levels

of cognitive and affective integration. A toddler who is not able to incorporate certain sensory experiences as part of his early cognitive and affective integration. A toddler who is not able to incorporate certain sensory experiences as part of his early cognitive and affective abstracting abilities (Werner et al., 1963) may evidence a very early restriction in how his senses process information.

Balanced reliance on proximal and distal modes of communication becomes even more important during this phase of development. The mobile toddler enjoying his freedom in space presumably can feel secure through his distal communication modes (e.g., looking and listening across space). It is interesting in this context to examine traditional notions of separation anxiety and the conflicts that some toddlers have over separation and individuation (Mahler et al., 1975). With the use of the distal modes, the toddler can "have his cake and eat it too." If he can bring the caregiving object with him through the use of distal contact with her, he does not have to tolerate a great deal of insecurity. He can "refuel" distally by looking at mother or listening to her voice and signal her back with vocalizations or arm gestures. He can use proximal contact, such as coming over for a cuddle when necessary. The youngster who has difficulty in using his distal modes to remain in contact with the primary caregiver may need more proximal contact. While this reliance on proximal contact can occur because of feelings of insecurity generated by an ambivalent primary caregiver, the limitations of a child's own sensory organization may also be an important factor in this pattern.

From a motor and sensory perspective, therefore, to master this stage, the toddler needs to be able to process sounds and sights, employ reciprocal motor gestures, and comprehend spatial relationships.

Thematic-Affective Organization

The piecing together of many smaller cause-and-effect units of experience involves a range of types of experience, such as pleasure, assertiveness, curiosity, and dependency, into an organized pattern. For instance, it is not unlikely for a healthy toddler to start with a dependent tone of cuddling and kissing his parents, shift to a pleasurable, giggly interchange with them, and then get off their laps and invite them to engage in an assertive chase game in which he runs to a room that is off-limits, such as the living room. When the parents say, "No, you can't go in there," protest and negativism may emerge. Under optimal circumstances, the interaction may come to a relative closure with the toddler back in the playroom, sitting on his parent's lap, pleasurably exploring pictures in his favorite book.

Here the child has gone full circle, suggesting that he has connected the many affective-thematic areas.

Around 18 months, as children begin to abstract the meaning of objects, their understanding of the functions of the telephone or brush may have its counterpart in their experiencing the caregiver as a "functional" being invested with many affective-thematic proclivities. Between 12 and 18 months, although children are able to integrate many behavioral units, they do not seem to be able to fully integrate intense emotions. For the moment at least, they do not fully realize that person they are mad at is the same person they love and experience pleasure with. By 18 to 24 months, the sense of split-off fury seems, at least in clinical observations, to be modified at some level by an awareness of love and dependency.

Clinical Features

This stage involves the many preverbal, behavioral interactions that begin in the second half of the first and beginning of the second year of life. Patterns that began with these early capacities can be seen in many behaviors in older children and adults, including simple gestural cues, involving eye contact, finger pointing, interjections or vocalizations, facial expressions, motor gestures, and different subtle affect expressions. The therapist should note whether the patient initiates such gestures and if she in turn responds to the clinician's countergesturing with a further gesture of her own.

The different emotions the patient reveals suggest the range and type of affect gestures they can communicate. The range and degrees of specific affects can be very broad. In the aggressive domain, for instance, there are gradations that run from assertive, competitive, and mildly aggressive behavior to explosive and uncontrolled rage. The same is true for the affectionate and caring domain, which ranges from promiscuous emotional hunger to mild affection, a sincere sense of warmth, compassion, and the other developmentally appropriate forms of caring. Affects can be combined with verbal themes showing a pattern during a session.

How does the person begin the session? What happens as he or she moves through the first third to the middle of the session, and then from the last third to saying good-bye? Follow the change in affect. For example, an individual may come in showing apprehension and tentativeness, become warm, and then competitive; show concern with issues of sibling or spousal jealousy and rivalry, and then express concern about separat-

ing from the therapist toward the end of the interview. Although several specific feelings have been elaborated in the above example, another patient may show only one or two affects during the entire interview.

The basic emotional messages of life—safety and security vs. danger, acceptance vs. rejection, approval vs. disapproval—can all be communicated through facial expressions, body posture, movement patterns, and vocal tones and rhythm. Words enhance these more basic communications, but most of us form quick, split-second judgments regarding a new person's dangerousness or approachability from his or her gestures before the conversation even gets started. In fact, if a person looks threatening and says, "You know, I'm your friend," we tend to believe the gestures and discount the words.

At a more subtle level, gestural communication also relays to us what aspects of our own emotions are being accepted, ignored, or rejected. The raised eyebrows and head nods we perceive quickly tell us whether the person hearing our message is reacting with excitement, anger, curiosity, or detachment. More importantly, our ever-emerging definition of the uniqueness of our very self is dependent on how others react to our own special tendencies with preverbal gestures. Differential responses stir different affects and are part of the process that refines and defines our maturing behavior and sense of self. How is our mischievous behavior and devilish grin responded to—with an accepting smile or a head-shaking frown? Our natural inclinations toward mischievousness, laziness, and a whole host of other personality traits are in part either accepted and supported, or refined or squelched, as a result of the impact of this nonverbal communication system. The nonverbal, gestural communication system is therefore a part of every dialogue contributing to our sense of who we are and what we perceive.

The clinician who only focuses on a person's words may miss an underlying, critical lack of organized gestural communication ability. For example, the "spacey" child who floats in and out of the room, or misreads the implied social rules of the playroom and hides toys, ignoring the therapist's facial expressions and sounds, and the adult who misreads the intentions of others, seeing, for example, assertiveness as anger or dependence as rejection, both betray an inability to fully process organized gestural communications.

As one observes gestures expressing a complex sense of self, one should take note not only of the range of affects but the richness and depth of affects observed. Are they superficial, as if the person is simply

play-acting or imitating someone? Or do they convey a sense of personal depth? In other words, is one able to empathize with the way the patient is feeling?

As we have been describing, complex, self-defining gestures involving opening and closing many circles in a row (30 or 40) emerges in the second year of life and is seen thereafter in complex, nonverbal interactions, where patterns are communicated and comprehended.

Deficits, Distortions, and Constructions

As the child moves closer to 18 months, the ability emerges to gradually relate to the world in a more functional way and to see objects according to their functional properties. Werner and Kaplan (1963) describe how babies can take a comb or toy telephone and use it purposefully. This is not yet imaginary play guided by mental representations or ideas; it is semirealistic play with an understanding of the functional use of the object. Children can also understand the emotional proclivities of their parents in a functional sense. They sense either nurturing, warm, supportive patterns or undermining, controlling, intrusive patterns. One little girl was able to see her mother as a teasing, envious person, although she did not understand what her mother was saying. She would pull away whenever her mother verbally teased her.

As indicated above, we have also observed that toddlers shift from an early stage (12–13 months), akin to ego splitting in adults, to a stage of greater integration of different self-object organizations by 18 to 19 months. When I am involved in therapeutic play with a 12- to 13-month-old and that child becomes angry, it feels as though if he had a gun at that moment he could shoot me. It feels much like it does with the adult patient who has a borderline personality or character structure. Connections between stages of childhood and adult pathology, however, are never so simple as a direct expression of a behavior or function from one age to another (it is more often an early capacity that is not established, or vulnerably established, that influences subsequent stages in terms of organization, flexibility, or context). For the early toddler, it appears that when you are the bad object, there is no simultaneous connection with you as the object of security and comfort. For that moment, you are all bad and your sense of the toddler's affect is one of rage. By the time a child is 18 months old, you may feel the toddler's anger, but you also sense that he sees you as an object of security, love, and dependency. You feel more like you

would with a typical adult. There is anger, but the backdrop of security and relatedness is still there.

Thus, during the stage of behavioral organization, problem-solving, and internalization, we observe a progression from a type of ego splitting or part-object relatedness to a more cohesive sense of the functional, emotional proclivities of the object. Presumably, this integration is also occurring in the sense of self. Just as toddlers are sensing their parents as loving or undermining, or both, they are also abstracting their own patterns of feelings and behaviors. They no longer see themselves as islands of discrete behaviors or feelings, aggressive one moment and pleasurable the next. They are abstracting a pattern. These are higher-level abstractions of feelings and behaviors, but still at a prerepresentational level.

One way to think of the second year of life is as involving the development of a conceptual attitude toward the world. In the first year of life, what might be called a somatic attitude is in evidence because events are experienced somatically and physiologically and through sensorimotor and affect patterns.

As the toddler communicates more and more effectively by using gestures (e.g., facial expressions of affect—happy, sad, angry; motor movements—clenching fists, reaching out to be hugged; body postures—turning away or toward another person; vocal patterns—sound sequence, tone, rhythm, and so forth), gestural communication reaches a crescendo and creates a critical foundation for representational communication.

The importance of the gestural level of communication cannot be overestimated. Consider the critical information that is conveyed presymbolically; for example, safety vs. danger, acceptance vs. rejection, concern vs. indifference, respect vs. humiliation, support for a person's uniqueness vs. undermining and controlling patterns. The most basic emotional messages of life needed for survival (e.g., danger vs. safety) and for a sense of security (e.g., acceptance vs. rejection) are communicated presymbolically through the gestural system. In fact, we tend to trust this system more than the representational one. If someone says, "I am a nice person," but acts in a menacing fashion, we tend to trust what we perceive in terms of their gestures over the meaning of their words.

This gestural level, which we have in common with other members of the animal kingdom, is surprisingly well mastered by 18 to 24 months of age. Toddlers can make their own intentions known and are learning to comprehend the intentions of others.

When this system is not mastered and children progress to higher representational levels, they seem to try to use higher representational modes to master what for others have become automatic tasks. Rather than listening to the teacher's instructions on how to match the "ah" sound to the letter A, they might be working very hard to figure out what she intended with her stern look: "Is she dangerous?" "Will she hurt me?" Many adults with mental health problems evidence this same pattern of preoccupation with figuring out the basic intentions of others. A deficit in this system of gestural interaction is, therefore, a contributor to various types of psychopathology (Greenspan, 1997a).

The potential value of this line of thinking was highlighted recently when, while working with a group of children who had difficulties controlling their impulses, I noticed a subtle deficit in gestural communication. This was a group of bright, focused (not hyper) children who would suddenly poke another child or adult. Both these children and their parents showed very little affect variation in their facial expressions, looking like good poker players (poker-faced). Perhaps, the lack of gestural variation removes the early warning system, so to speak. Children don't learn to modulate their behavior because there is no graded gestural feedbacks, only all or nothing punishments, much like the all or nothing quality of their own behavior. Our gestures, in part, help us define our feelings (e.g., muscle tension and anger). Gestures also are a form of expression of feelings (it could be viewed as a very early form of sublimation as well as a safe form of affective discharge). The intricate posturing and signaling so characteristic of safe negotiations among both animals and people seemed to be missing in these families. We often expect to see impulsiveness in children who are distractible, overly active, and/or have information-processing problems. Perhaps they share a similar mechanism with the children described above. The "processing" problems of these children often make successful negotiation of the gestural level quite difficult. It was surprising to see "poker faces" in a group of maturationally advanced children and their families. For these children, it appeared that the lack of gestural communication was predominantly related to psychosocial issues and a failure of early learning.

There are many types of problems that stem from deficits or constrictions in the capacities ordinarily mastered during this stage. These include ego splitting, a lack of a cohesive sense of one's self, or a lack of an ability to abstract the range of emotional properties of self and others. These also include the tendency to remain concrete rather than to develop

conceptual and, eventually, a representational self-object organization. Many adult patients, for example, talk of themselves in terms of discrete behavioral patterns (e.g., "I pushed her; she bit; I went out drinking"). Life is a series of interrelated but somewhat discrete behaviors. There is no sense of, "She is a frustrating person; therefore, I get upset," or "I go out drinking because I can't tolerate the pain and anguish of her frustrating me," or "She's a sweet person who loves me, but I get scared of the closeness, and therefore I can't handle it and I go out and drink."

In therapy, often one inadvertently supplies the missing piece. The patient says, "I hit her." We say, "You must have felt angry." In fact, the patient's problem is that he does not have the capacity for fully experiencing or labeling the affect states. He only feels the tendency to hit and not the feeling of anger in a gestural or representational mode. For many with severe character disorders and borderline conditions, life is a series of discrete behavior patterns. In normal development—as early as 18 to 19 months—a more conceptual attitude toward the world is developed. But many patients do not develop this capacity in the emotional spheres of their life. They possess it intellectually; they can do math and other abstract impersonal problems, but when it comes to emotions they are not able to operate at the 18- to 19-month level. Or they may operate at different developmental levels with different emotions, for example, pleasure and dependency at one level, assertion and anger at another (depending on their caregiving environment).

Therefore, two extremes were observed. At one extreme, the capacity for organizing behavior, emotions, and a conceptual stance toward the world is not formed at all. We see fragmented images of the self and the world. These individuals can relate to others, but they are at the mercy of moment-to-moment intentions or feelings. There is no integration of discrete experiences. It is not surprising that borderline patients have affect storms and keep shifting their behavioral and emotional inclinations. Their part-self and object images are not tied together; they have not made it to the 18-month level where they have a sense of themselves and their significant others as operating individuals. Their part-selves are fueled by unconnected drive-affect proclivities.

This is an especially interesting stage of development because most of the severe character and borderline conditions (which are probably the most frequent conditions we treat today) have important normative parallels in the second year of life.

We also see in the second year of life the emergence of an internal signaling system. Affect, as a signal, seems to develop both as part of a more general conceptual attitude toward the world and as an outgrowth of the gestural communications. By 18 to 19 months, we see a toddler who, when he does not get what he wants, is not necessarily driven to temper tantrums or other driven behavioral patterns. There is now a capacity to pause and make a judgment regarding what to do. The toddler can consider alternative behavioral patterns. Most 18- to 19-month-olds, for example, may pester mother, pull at her leg, and so forth, but with one look from mom they can go back to their play area and wait for a while longer. Or, a toddler will want to do something, and you will look at him and make the gesture, "No, no, no." He may stop in his tracks, challenge you, stop again, and so forth. The signal function of affects is in the process of being developed. To be sure, many toddlers may not use this new capacity at all or may not yet have it.

Nemiah (1977) has suggested that in certain psychosomatic conditions, and in many drug abuse and impulse disorders, there is the lack of a signal affect capacity. Hence, there is a lack of the transitional capacity to elevate dysphoric affect into a conceptual (i.e., a co-regulated, interactive) and, subsequently, representational, signal.

It is interesting to consider what helps the child develop a signal affect function. One component is the capacity to shift from proximal modes to distal modes of relating. An infant relates to the adult world relatively more with proximal modes, through being held and being touched, as distal modes are getting organized. These modes are proximal in the sense that the infant is using his skin, a sense of pressure, and so forth. By 4 to 8 months, one begins seeing the distal modes come into use more fully as vision and hearing are used in reciprocal signaling, and infants stay in touch by vision and hearing, as well as with direct touch. By 12 to 18 months, the toddler, although across the room, can stay connected to mother or father through these distal modes. Vocalizations, visual signals, and affect gestures (a grin or smile) are used to remain in emotional contact. The refueling that Mahler et al. (1975) discuss, therefore, as we discussed earlier, occurs not only through proximal modes (coming back and hugging mother), but also through distal modes. The youngster, while playing, looks, sees mother's alert attentiveness, and feels reassured. Studies on social referencing (Sorce & Emde, 1982) show that children are more exploratively confident when their mother is looking at them and taking an interest in their play, compared to when she is reading a newspaper in the same room. A child can explore, have the freedom of space,

and still feel connected. Although the child, at this time, relates across space, he cannot yet relate across time. He does not possess the ideational or representational mode.

A child may not establish this distal communication capacity because a parent is overanxious, overprotective, or overly symbiotic. Or the child may not have optimal use of the distal modes because of a unique maturational pattern or processing problem. Consider, for example, the child who has an auditory processing problem; he may not be able to decode the emotional intent or tone of mother's "that's a good boy." Or he may have a visual-spatial processing limitation and have difficulty reading facial gestures or interpersonal distance. He may need to rely more on the proximal modes. He may have to be held to feel secure.

The use of distal modes may be an important key in the transition to the development of the ideational or representational mode. With the ideational or representational mode, one has mobility not only across space but also across time because one can create ideas (one can conjure up the object). As Mahler et al. (1975) suggests, one feels security through the fantasy of the object.

In adults, there is a balance between proximal modes (to be held and cuddled, in close tactile and physical contact with our loved ones) and distal modes (we enjoy warmth and security through the nodding and gesturing of a close friend in a good conversation, or even a new acquaintance at a cocktail party). Adults who cannot receive experience through the distal modes often feel deprived and isolated. They often resort to proximal modes. This makes adult life very difficult. As far as I know, this deficit has not been looked at as a significant part of borderline disturbances and severe character disorders in which there is an inordinate sense of isolation, emptiness, and loneliness. The transition to distal and then to ideational modes, therefore, creates flexibility. One can carry with one the love object, first over space and eventually over time. One sees a failure at this stage in deficits in the functional-conceptual self and object, and limitations in functional-conceptual self-object affective-thematic proclivities.

A special type of functional, conceptual self-object limitation at this age may be evidenced in the lack of an emerging sense of gender. Normally an abstracted sense of being more masculine or feminine appears to be emerging at this stage. A lack of abstracting a sexual gender sense, however, can be in evidence at this time in children who become fragmented with different sexually relevant body parts operating in isolation from an overall sense of gender (Greenspan, 1989).

In summary, a severe disorder at this phase affects the basic capacity for organizing behavior and affects. Most worrisome is the toddler who pulls away entirely from emotional relationships in the human world or remains fragmented as he develops his affective-thematic proclivities. A less severe disorder at this stage will be reflected in the narrowness of the child's range of experience organized, as seen in extreme character rigidities (e.g., the child who never asserts himself or is always negative, or has difficulties with affiliative behavior, or cannot use imitation in the service of temporary gratification and delay). As such children are tied to concrete and immediate states of need fulfillment, they may never form the intermediary warning and delay capacities that complex internal affects are used for. They often will tend to see people only as fulfilling their hunger for physical touch or candy, cake, or other concrete satisfactions.

Symptomatic problems at the stage of behavioral organization are chronic temper tantrums, inability to initiate even some self-control, lack of motor or emotional coordination, extreme chronic negativism, sleep disturbance, hyperirritability, withdrawal, delayed language development, and relationships characterized by chronic aggressive behavior. In addition, if basic attachments and comforting functions are secondarily disrupted, one may see attachment and regulatory or homeostatic disorders.

Representational Capacity: 18–30 Months

The next level involves the creation, elaboration, and sharing of symbols and meanings. The individual's ability to represent or symbolize experience is illustrated in the pretend play, the verbal labeling of feelings ("I feel happy"), and the functional use of language.

This level begins as the toddler approaches the end of the second year. Internal sensations and unstable images become organized as multisensory, affective images or representations that can be evoked and are somewhat stable (Bell, 1970; Fenson & Ramsay, 1980; Gouin-Decarie, 1965; Piaget, 1962). While this capacity is fragile between 16 and 24 months, it soon becomes a dominant mode in organizing the child's behavior.

Related to the ability to create representations is the capacity for "object permanence." This capacity, which is relative and goes through a series of stages, refers to the toddler's ability to search for hidden inanimate objects (Gouin-Decarie, 1965).

Infants progress from engaging in actions with themselves (e.g., feeding self) to using themselves as the agents to act upon others (e.g., toddler uses a doll to feed another doll). The development of language and the capacity to share meanings with others facilitates children's capacity to describe themselves and to understand the difference between themselves and others. This development of perspective coincides with the early stages of empathy and prosocial behavior (Butterworth, 1990; DesRosiers & Busch-Rossnagel, 1997; Meltzoff, 1990; Pipp-Siegel & Pressman, 1996; Stern, 1983).

The elaboration of ideas or representations gradually becomes more complex as does the sense of self, which now involves symbols, not just behaviors (e.g., use of words for intent and descriptions, use of personal pronouns, improved recognition of self in mirror; Fein & Apfel, 1979; Fenson, Kagan, Kearsely, & Zelazo, 1976; Inhelder, Lezine, Sinclair, & Stambak, 1972; Pipp, Fischer, & Jennings, 1987; Rubin, Fein, & Vandenberg, 1983). Pretend play and intentional interpersonal use of language illustrate these new capacities (Erikson, 1940; Fein, 1975; Kraus & Glucksberg, 1969; Lowe, 1975; Nelson, 1973; Peller, 1954; Waelder, 1933).

Over time, causal schemes are developed at a representational level (McCune-Nicholich, 1977; Sinclair, 1970), leading to thinking capacities. In addition, as ideas and behaviors are being elaborated, they reflect not only ongoing relationships, but prior negotiations as well. A large number of studies on early attachment patterns and later behavior illustrate the importance of early patterns as well as later relationships (Aber & Baker, 1990; Arend, Gove, & Sroufe, 1979; Cassidy, 1990; Cassidy & Marvin, 1988; Easterbrooks & Goldberg, 1990; Egeland et al., 1984; Goldberg & Easterbrooks, 1984; Main, Kaplan, & Cassidy, 1985; Marvin & Stewart, 1991; Maslin-Cole & Spieker, 1990; Matas, Arend, & Sroufe, 1978; Pastor, 1981; Sroufe, 1983; Sroufe, Fox, & Pancake, 1983; Waters, Wippman, & Sroufe, 1979). As children elaborate their ideas, they use them to make more sense of their experiences and themselves (Bretherton & Beeghly, 1982; Dore, 1989; Dunn, 1988; Dunn, Bretherton, & Munn, 1987; Nelson & Gruendel, 1981; Schank & Abelson, 1977).

Sensory Organization

A mental representation or idea is a multisensory image that involves the construction of objects from the perspective of all the objects' properties (including levels of meaning abstracted from experiences with the object).

Therefore, the range of senses and sensorimotor patterns the youngster employs in relationship to his objects is critical, for the object is at once an auditory, visual, tactile, olfactory, vestibular, proprioceptive object, and an object that is involved in various affective and social interchanges. Where the range, depth, and integration of sensory experiences are limited, the very construction of the object and representation will obviously be limited in either its sensory range and depth or affective investment and meaning. Therefore, in such a situation, important limitations in the child's early representational world may result.

Thematic-Affective Organization

As the child learns to construct his own multisensory, affective-thematic image of his experiential world, he organizes affective-thematic patterns at a level of meanings. This new level of organization can be thought of as operating in two ways. The youngster with a representational capacity now has the tool to interpret and label feelings rather than simply act them out. A verbal 2-year-old can evidence this interpretive process by saying "Me mad," or "Me happy." Pretend play is, perhaps, an even more reliable indicator than language of the child's ability to interpret and label. Pretend play is an especially important indicator because many children have language delays. For example, a child soon provides a picture of his representational world as he plays out dramas in different thematic realms, for example, dependency (two dolls feeding or hugging each other), etc.

The representational capacity also provides a higher-level organization with which to integrate affective-thematic domains. Therefore, we observe new experiences as the child develops from 2 to 5 years of age. These include empathy, more consistent love (including object constancy, a love for self and others that is stable over time and survives separations and affect storms such as anger; Mahler et al., 1975), and later on the ability to experience loss, sadness, and guilt.

Because of the complexities of representational elaboration, the conceptualization of this stage may be aided by subdividing the representational capacity into three levels or subcategories. The first level is the descriptive use of the representational mode (the child labels pictures and describes objects). The second level is the limited interactive use of the representational mode (the child elaborates one or two episodes of thematic-affective interactions, such as statements of "Give me candy," "Me hungry," or a play scene

with two dolls feeding, fighting, or nuzzling). The third level is elaboration of representational, affective-thematic interactions.

Clinical Features

One can observe the representational capacity by engaging a child in pretend play and seeing if he can elaborate ideas, such as having the dolly eating or hugging. Often by the age of 2 or 3, the child sequences a number of representational units into a drama—the doll eats, goes to sleep, awakens, goes to school, spanks the teacher, comes home and has a tea party, becomes overexcited, is comforted by mommy, and then goes back to sleep. Initially, the elements in the complex drama may not be logically connected. Over time, along with representational differentiation (the next stage), the causal-logical infrastructure of the child's representational world emerges in his pretend play and use of language. Over time, the child's thematic elaboration can be observed to include a range of themes, including dependency, pleasure, assertiveness, curiosity, aggression, self-limit-setting, and eventually empathy and love.

This level in relating not only involves using representations or symbols in both play and verbal communication, but also sometimes is evidenced by the use of subtle spatial communications, such as building complicated towers or houses with passages in them. Older children and adults can sometimes use a picture to convey a feeling or complex meaning. Adults often use descriptions of visual imagery from dreams or free associations. One can obscure the depth and range of themes developed at the representational level. Are there only shallow, repetitive dramas or rich deep ones with a range of emotions?

Deficits, Distortions, and Constrictions

If, for any reason, the child is not getting practice through interactive pretend play and/or functional language use, we often see the beginnings of a deficit or constriction in representational capacity. Deficits or constrictions may occur because mother or father becomes anxious in using ideas in emotionally relevant contexts. For example, they may be afraid of emotional fantasy in general, or in specific thematic-affective areas such as separation or rejection, aggression, or assertiveness. Many adults are more frightened or conflicted by the representation of a theme such as sexuality or aggression than the behaving or acting out of the same theme.

Parental anxiety often leads to overcontrolling, undermining, hyperstimulating, withdrawn, or concrete behavioral patterns (i.e., let's not talk or play; I will feed you). In addition, because of unique constitutional-maturational patterns or early experiences, the child may become overly excited and thus afraid of his own use of ideas and new feelings (e.g., sexual themes in the play). As a result, he may regress to concrete prerepresentational patterns. If the parent cannot help the child return to the ideational level (i.e., the child is beating the ground and cannot reorganize and get back into the play), the child does not practice affective-thematic proclivities at the ideational level, and remains at the behavioral action pattern mode (acting out).

The ideational mode allows for trial action patterns in thought (to contemplate and choose among alternatives). One can reason with ideas better than with actual behaviors. Therefore, one has an enormous deficit if a sensation or series of sensations that are distinctly human do not have access to the ideational plane. Parents often ask about aggression ("Should I take away aggressive toys?"). If parents ignore elevating aggression to the representational plane, they are leaving aggression to the behavioral discharge mode. As children go from the conceptual mode to being able to label most of the basic feelings and begin to deal with them in their pretend play.

The capacity for mindsight or the ability to take another's perspective may be disturbed when there are problems in forming representation. Children with autism often evidence this challenge (Baron-Cohen. 1994). The child with autism often has problems at earlier levels that form a foundation for representing experience as well (e.g, the ability to imitate gestures, facial expressions, and vocalizations of others; Hobson, 1986; 1989). A deficit in connecting affect, gesture, and language (Harlow, 1953) may contribute to why autistic children struggle with developing representational and empathic responses, evidence deficits in organizing joint attention, and have difficulty in perceiving the emotional states of others (Atlas, 1986; Hoffman, 1998; Roth-Hanania, Busch-Rossnagel, & Higgins-D'Alessandro, 2000).

Using a chart review of 200 cases of children on the autism spectrum, Greenspan and Wieder (1997) documented differences in children with this disorder in the areas of sensory processing and reactivity, object use, and symbolic play capacities. Specific problems with play interactions included an absence of any play, odd use of toys, inability to generate symbolic play, and difficulties sequencing symbolic play actions.

In addition, children with parents who are overly intrusive may also have a diminished capacity to represent thought (Fonagy & Target, 1997). It has been suggested that the ability to form mindsight (e.g., representational thinking, theory of mind, social cognition) develops from an intact, neurologically sound person who experiences joint, collaborative, nonintrusive, and supportive attachments (Siegel, 2001).

In summary, disorders in this phase include children who remain concrete and never learn to use the representational mode and show impulsive or withdrawn behavior. They also include children who have developed a representational capacity in both the inanimate and animate spheres but show severe limitations or regressions with even minor stress in certain areas of human experience. For example, they may be able to use symbolic modes only around negativism, dominance, and aggression and consequently look solemn, stubborn, and angry, showing little range of representational elaboration in the pleasurable or intimate domain.

Representational Differentiation (Building Logical Bridges Between Ideas and Emotional Thinking): 30–48 Months

The next level involves creating logical bridges between ideas. Shared meanings are used both to elaborate wishes and feelings and to categorize meanings and solve problems. The child elaborates and eventually differentiates those feelings, thoughts, and events that emanate from within and those that emanate from others. The child begins to differentiate the actions of others from his or her own. This process gradually forms the basis for the differentiation of self-representations from representations of the external world, animate and inanimate. It also provides the basis for such crucial personality functions as knowing what is real from unreal, impulse and mood regulation, and the capacity to focus attention and concentrate in order to learn and interact.

As logical bridges between ideas are established, reasoning and appreciation of reality grow, including distinguishing what's pretend from what's believed to be real, dealing with conflicts and finding prosocial outcomes (Dunn & Kendrick, 1982; Flavell. Green, & Flavell, 1986; Harris, Brown, Marriott, Whittall, & Harmer, 1991; Harris & Kavanaugh, 1993; Wolf, Rygh, & Altshuler, 1984; Wooley & Wellman, 1990). As children become capable of emotional thinking, they begin to understand relationships between their own and others' experiences and feelings. They also

illustrate these relationships in their narratives. Emotional thinking also enables children to begin to reason about right and wrong (Buchsbaum & Emde, 1990; Emde & Buchsbaum, 1990; Harris, 1989; Nelson, 1986; Smetana, 1985; Stewart & Marvin, 1984; Wolf, 1990). As children move into subsequent stages—for example, latency—and become more concerned with peers, they begin to appreciate emotional complexity such as mixed feelings (Donaldson & Westerman, 1986; Harter & Whitesell, 1989).

The capacity for differentiating internal representations becomes consolidated as object constancy is established (Mahler et al., 1975). As the child moves into the Oedipal stage, both reality and fantasy become more complex (Bruner, 1986, 1990; Dore, 1989; Fivush, 1991; Greenspan & Salmon, 1993; Singer & Singer, 1990). In middle childhood, representational capacity becomes reinforced with the child's ability to develop derivative representational systems tied to the original representation and to transform them in accordance with adaptive and defensive goals. This permits greater flexibility in dealing with perceptions, feelings, thoughts, and emerging ideals. Substages for these capacities include representational differentiation, the consolidation of representational capacity, and the capacity for forming limited derivative representational systems and multiple derivative representational systems (structural learning; Greenspan, 1979). Throughout these stages, but especially in the last three (the formation of complex behavior patterns and rituals, the elaboration of ideas, and in creating bridges between ideas), one observes cultural influences, for example, in the way girls and boys construct aspects of their inner worlds (Reiss, 1989). The now-well-known finding that in Western cultures men tend to be more assertive and competitive and women more caring and relationship-oriented (Gilligan, 1982) is evident during development with, for example, greater early signs of empathy in girls' and parents' inclinations to talk more to boys about anger and girls about sadness (Zahn-Waxler, Robinson, & Emde, 1992).

At the level of building bridges between ideas, the child can make connections between different ideas and feelings ("I am mad because you took my toy") and balance fantasy and reality. An adult using capacities begun during this stage can similarly hold logical conversations about wishes and feelings and make connections. ("I feel lonely and needy, and I get helpless when I feel that way. Sometimes I get mad because I can't stand being so vulnerable.")

Sensory Organization

For the child to meet the challenges of organizing and differentiating his internal world according to "self" and "other," "inside" and "outside," dimensions of time and space and affective valence, he is, in part, dependent on the integrity of the sensory organization that underlies his experiential world. Now, as earlier, the capacity to process sensory information is critical, including sequencing auditory-verbal and visual-spatial patterns according to physical, temporal, and spatial qualities in the context of abstracting emerging cognitive and affective meanings. The child is now challenged to understand what he hears, sees, touches, and feels, not only in terms of ideas, but in terms of what is me and not-me; what is past, present, and future; what is close and far; and so forth. These learning tasks depend on the ability to sequence and categorize information through each of the sensory systems and through all of them working together. Therefore, if anywhere along the pathway of sensory processing there are difficulties, the subsequent ability to organize impersonal or affective information will likely be compromised. For example, if sounds are confused, words will not be easily understood. Similarly, if spatial images are confused, spatial configurations will not be easily negotiated. If short-term memory for either verbal or spatial symbols is vulnerable, information will be lost before it can be combined with, and compared to, other information to abstract meanings. And if higher level auditory-verbal symbolic or visual-spatial symbolic abstracting capacities are less than age-appropriate, the very capacity to categorize experience will be limited. When one considers that the challenge is now to process and organize not only impersonal, cognitive experiences, but also highly emotional, interpersonal experiences (which keep moving, so to speak), this challenge to the sensory system is formidable. Furthermore, categories such as "me," "not me," "real," and "make-believe" are high-level constructs that depend on organizing sensory information.

Thematic-Affective Organization

The child appears to use his new representational capacity to simultaneously elaborate and differentiate experience, in contrast to earlier views by Freud (1900) and Mahler et al. (1975). There does not appear to be a period of magical representational thinking followed by one of reality thinking. The child continually differentiates affective-thematic organizations along lines that

pertain to self and other, inner-outer, time, space, and so forth. This differentiation is based on the child's capacity to experience the representational consequences of his representational elaborations with the emotionally relevant people in his world, usually parents, family, and friends. The parent who interacts with the child using emotionally meaningful words and gestures, and engages in pretend play in a contingent manner (offering, in other words, logical representational feedback), provides the child with consequences that help him differentiate his representational world. In this view, reality testing—the capacity to separate magical from realistic thought—appears to be a gradual process beginning with the onset of the representational capacity proper and reaching some degree of selective stabilization prior to the child's formal entry into school.

One observes the child's elaborate representational themes along two dimensions. In the horizontal dimension, the child broadens the range of his or her themes to eventually include a range of emotional domains or drive-affect realms, including closeness or dependency, pleasure and excitement, assertiveness, curiosity, aggression, self-limit-setting, the beginnings of empathy, and consistent love. For example, not infrequently one observes repetitive pretend play of a feeding or hugging scene suggesting nurturance and dependency. Over time, however, the dramas the child may initiate (with parental interactive support) will expand to include scenes of separation (one doll going off on a trip and leaving the other behind), competition, assertiveness, aggression, injury, death, recovery (the doctor doll trying to fix the wounded soldier), and so forth. At the same time, the logical infrastructure of the child's pretend play and functional use of language becomes more complex and causally connected. The "he-man" doll is hurt by the "bad guys" and therefore "gets them." After the tea party, the little girl doll goes to the "potty" and then decides it is time to begin cooking dinner. In discussions, the 3-year-old sounds more and more like a lawyer with "buts" and "becauses"—"I don't like that food because it looks yucky and will make me sick." There is, therefore, both thematic elaboration and differentiation. Even though the themes may be pretend and phantasmagoric, the structure of the drama becomes more and more logical. The rocket ship to the land of "he-man" uses NASA rocket fuel.

As indicated, representational differentiation depends not only on a child being representationally engaged in thematic-affective areas but experiencing cause-and-effect feedback at the representational level. Parents have to be able not only to engage but also to interpret experiences correctly. The parents who react to play with a gun as aggression one day, as

sexuality another day, and as dependency on a third day, or who keep shifting meanings within the same thematic play session, will confuse the child. This child may not develop meanings with a reality orientation. Parents who confuse their own feelings with the child's feelings, or cannot set limits, may also compromise the formation of a reality orientation.

Clinical Features

Shared differentiated meanings involve the communication of ideas to another person and building on the other person's responses. Some people only communicate their own ideas, never building on the responses of the other person. In both childhood dramas and adult conversations they talk, but do not easily absorb or reply to someone else's ideas and comments. For example, whenever a 4-year-old little girl came home from preschool, she played out scene after scene of being a princess, letting her mother hold her imaginary ermine robe, while her mother's casual questions, such as "What does the princess want me to do next?" and "Who did you play with today?" were ignored. Similarly, a 40-year-old businessman seen in therapy could elaborate at great length about how "No one satisfies me." He was unable to wrench his thoughts away from this theme and would obsessively return to it, regardless of the therapist's comments or questions. Without the ability to form bridges between various feelings states, including his own and someone else's, that patient was incapable of exploring a fuller range of feelings. Other individuals are just the opposite; diligently following instructions, listening to every word, but rarely elaborating their own feelings about events or their understanding of them.

Children operating at the level of creating logical bridges between different islands of symbolic or representational communication do not just negotiate via pretend dramas. They also begin to negotiate the terms of their relationship with the clinician in a more reality-based way. "Can I do this?" or "Can I do that?" the child may say. "What will you do if I kick the ball into the wall?" the child may further inquire. The child may also want to know if he and the clinician can play after the session is over because he enjoys the playroom so much (and seems to yearn for a little extra contact with other people). A child's negotiations about bringing parents into the playroom, wanting either to continue or end the session early, or curiosity about where the clinician lives and what his family is like, clearly indicate a use of symbols or words in a logical interactive way. These logical bridges between one thought and another suggest that this

more advanced level of negotiating relationships has been mastered. The adult who shifts between free associations and logical reflection, or who wonders about how two feelings are connected, or who makes such connections, also reveals this level.

The stages of representational elaboration and further differentiation can be observed and further assessed as one looks at the way in which individuals organize the content of their communications and deal with anxiety. First it is important to look at the overall organization in terms of the presence or absence of logical links connecting the thematic elements. A certain level of thinking can be expected with adults. With a child, however, the standards vary according to age, and the organization of themes must be weighed against the age-expectations.

Deficits, Distortions, and Constrictions

The child needs to learn how to shift gears between the make-believe and the real world. Ordinarily, we see this occur gradually between the ages of 2 and 4. As part of this process, we see more planning in children's play, as Piaget (1962) highlighted (e.g., going upstairs to get just the right-cup for the tea party). What happens if there are failures of development during this stage? Earlier it was suggested that if representational elaboration is not occurring, the child is left with a pre-ideational or prerepresentational, somatic, and behavioral orientation. If there are limitations in representational differentiation (confused meanings), a child's self and object differentiation at the representational level may be compromised. It is interesting to consider those people who can engage others warmly (have mastered attachment) and organize their behavior, but who have irrational thoughts. They often cannot separate their own thoughts from someone else's. They may have organized delusions, but are extremely warm and can relate to others.

On the other hand, one may also see constrictions; that is, individuals who cannot represent or differentiate aggression or sexuality and are left only with the behavioral-action mode who are confused about their own and others' ideas or feelings in these thematic areas but not other thematic areas. Constrictions at this stage may be associated with relatively more differentiated and internalized conflicts (i.e., between opposing differentiated tendencies).

It is also interesting to discuss psychosexual trends at this stage. The phallic trend is clearly present beginning at ages 2 to 4. Kids love to build

towers, pretend to be Superman, and undress to show off their bodies. One does not see an equal preoccupation with the anal concerns (eliminative or retentive patterns). Therefore, the anal body interest may not be elaborated as much in the representational sphere as is the phallic one (i.e., may be part of prerepresentational behaviors).

It may be useful to consider the oral, anal, and phallic stages of psychosexual inclinations in terms of observable thematic-affective inclinations. There may be a sensory, tactile, or oral mode early in life. In the second year of life, muscle control may predominate (better gross and fine motor coordination, including anal control by the end of the second year). Then, by 2 years, one sees the phallic inclinations as part of the ever-increasing body control and investment in the body and its parts (which begins at 17 to 18 months). The phallic inclinations become part of an emerging more differentiated sense of childhood sexuality as the interest in the genitals becomes integrated with the overall emerging sense of the body as part of an internal bodily representation. In summary, even though there is fascination with feces, I have not observed the representational derivatives of anal body interest in normal children to the same degree as phallic derivatives. On the other hand, where development is not progressing optimally, either exaggerated phallic trends or excessive anal preoccupation is not uncommon.

To return to the earlier discussion, inclinations that do not have access to the representational mode and its differentiation, even in mild degrees, are perhaps sowing the seeds for severe character pathology and/or neurotic conflicts. What is often referred to as magical thinking is more probable where representational elaboration and differentiation have not fully occurred. Later on, in the triangular, Oedipal, and latency phases of development, earlier patterns obviously are reenacted and reworked.

In summary, it is useful to clinically observe and assess the representational capacity along the two simultaneous dimensions of representational elaboration and representational differentiation. Clinically one observes defects and constrictions in both domains. These are evidenced by the child who

• remains concrete and never learns to use the representational mode to elaborate "inner sensations" to the level of meanings;

• is severely constricted and is only able to represent a few of the affective-thematic domains characteristic of human functioning;

THE FUNCTIONAL EMOTIONAL ASSESSMENT SCALE

- evidences the full range of representational affective-thematic life but remains undifferentiated along the dimensions of ideas or thoughts (thought disorder), affective proclivities (mood disturbances), self and object organizations (reality testing and "self" and "other" boundary disturbances), intentionality (impulse disorders), and sense of time and space (disorders of learning, concentration, and planning);

- in order to differentiate a representational world, gives up or avoids certain affective-thematic realms, such as aggression or competition, because they are potentially disruptive (e.g., character disorders).

Contributing to these limitations is the caregiver who cannot engage representationally and logically in all domains because he or she is fearful of certain affective-thematic realms and therefore withdraws or becomes disorganized. The child's own limitations from earlier maturationally based processing problems and psychosexual difficulties also contribute to representational disorders.

Summary of Developmental Levels

The organizational levels described and discussed above are not difficult to observe in either children or adults, but are often taken for granted. When a child comes into the playroom ready to play or talk, there is often some rapport or emotional relatedness that soon develops between therapist and child. As soon as the therapist opens the door and the child makes eye contact with him or her, or perhaps follows a few facial or arm gestures, indicating where the toys are kept, we have an intentional, preverbal communication system going. Therapist and child are engaged and intentional with each other.

As the child begins complex play, staging mock battles with appropriate sound effects—or making noises and pointing to indicate "Get me that!"—more complex intentional communication is occurring. When the child puts feelings into words and elaborates pretend play themes, the level of shared meanings or representational elaboration is reached. The next level will be reached when the child not only elaborates themes, but constructs bridges between domains of experience: "I'm scared when I'm mad." The ability to categorize experience indicates emotional thinking

(i.e., representational differentiation). A symbolic "me" and a symbolic "you" are now in evidence: "I always get so scared of everything." Most importantly, the capacity for categorizing experience helps an individual elaborate feelings and build on another's communications. The individual can have a logical two-way dialogue and tell the difference between fantasy and reality.

Individuals may have clear compromises in their attainment of these organizational levels, such as the adult who comes in to therapy and can only partially engage. When anxious or frightened, this person typically disengages and becomes aloof or withdrawn. Not infrequently, he also gets disorganized and cannot even gesture purposefully and intentionally. His gestures and speech both become disjointed. His capacity for representational elaboration is limited to either disorganized emotional communications or organized descriptions of impersonal events. There is little capacity for balancing subjective elaborations and an appreciation of reality. The person then uses words in a fragmented way, tends to be concrete and impersonal in his descriptions of the world, gesturally signals in a disorganized and chaotic way, and, while capable of engaging with others, easily disengages and becomes aloof.

As the clinician looks at the tendency to use verbal descriptions of behavior and organize these descriptions rather than put them into acting out behaviors,[1] he further looks to see if the person can represent global, somatically based affects; simple, general affects; polarized affect states; or more differentiated, abstracted affects (i.e., specific feelings). He also looks for the ability to make connections between different affective domains and categories of feelings and behaviors, and the ability for self-observation and reasoning about one's emotional inclinations and tendencies. One can further look at this last category in terms of the ability to observe oneself and reason in different dimensions: in the here-and-now, which is the easiest in a historical sense, to anticipate the future, to do all the above as part of an active exploration, and, obviously, finally to integrate them.

Also, as a person is involved in more differentiated self-observing capacities, he or she can apply this to different types of relationship patterns. Therefore, in terms of comprehending relationships, various levels of representational differentiation can also be noticed. An early level has to do

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[1] The acting out behaviors are usually characteristic of the person who hasn't yet mastered the complex interchange of behavioral intentions and expectations and who is somewhat arrested between the simple gestural and complex gestural stages.

with being able to explore feelings that occur in dyadic relationship patterns, a later one has to do with triangular relationship patterns. A still later level involves group patterns that have many different dyads and triads as well as the relationship between all the members of the group and the group as a whole. Finally, signposts of higher levels of organization can be seen in the ability to move into explorations of feelings having to do with stable internal values and principles, and being able to look at an emerging sense of self against these aspirations and principles.

(See the following tables for an overview of this developmental framework. Also see chapters 8 and 9 for further discussion of these issues.)

Table 1-1.
Developmental-Structural Delineation of Stage-Specific Capacities[2]

Stage	Illustrative Adaptive Capacities	Illustrative Maladaptive (Pathologic) Capacities	Adaptive Caregiver	Maladaptive Caregiver
0–3 months Self-regulation and interest in the world (homeostasis):	Internal regulation (harmony) and balanced interest in the world	Unregulated (e.g., hyperexcitable) or withdrawn (apathetic) behavior	Invested, dedicated, protective, comforting, predictable engaging, and interesting	Unavailable, chaotic, dangerous, abusive; hypo- or hyperstimulating; dull
2–7 months Forming relationships, attachment, and engagement	Rich, deep, multisensory emotional investment in animate world (especially with primary caregivers)	Total lack of or nonaffective, shallow, impersonal involvement in animate world	In love and woos infant to "fall in love"; effective, multimodal, pleasurable involvement	Emotionally distant, aloof and/or impersonal (highly ambivalent
3–10 months Two-way purposeful communication (Somatopsychological differentiation):	Flexible, wide-ranging, affective multisystem contingent (reciprocal) interactions (especially with primary caregivers)	Behavior and affects random and/or chaotic or narrow, rigid and stereotyped	Reads and responds contingently to infant's communications with a range of senses and affects	Ignores or misreads (e.g., projects) infant's communications (e.g., is overly intrusive preoccupied or depressed)
9–18 months Behavioral organization, problem-solving, and internalization (a complex sense of self):	Complex, organized, assertive, innovative, integrated behavioral and emotional patterns	Fragmented, stereotyped, and polarized behavior and emotions (e.g., withdrawn, compliant, hyperaggressive or disorganized behavior)	Admiring of toddler's initiative and autonomy, yet available tolerant and firm; follows toddler's lead and helps him organize diverse behavioral and affective elements	Overly intrusive, controlling; fragmented, fearful (especially of toddler's autonomy); abruptly and prematurely "separates"
18–48 months Representational elaboration and differentiation:	Formation and elaboration of internal representations (imagery); organization and differentiation of imagery pertaining to self and nonself; emergence of cognitive insight; stabilization of mood and gradual emergence of basic personality functions	No representational (symbolic) elaboration; behavior and affect concrete, shallow and polarized; sense of self and "other" fragmented, undifferentiated, or narrow and rigid; reality testing, impulse regulation, mood stabilization compromised or vulnerable (e.g., borderline psychotic and severe character problems)	Emotionally available to phase-appropriate regressions and dependency needs; reads, responds to, and encourages symbolic elaboration across emotional and behavioral domains (e.g., love, pleasure, assertion) while fostering gradual reality orientation and internalization of limits	Fears or denies phase-appropriate needs; engages child only in concrete (nonsymbolic) modes generally or in certain realms (e.g., around pleasure) and/or misreads or responds noncontingently or unrealistically to emerging communications (i.e., undermines reality orientation) overly permissive or punitive

Source: Greenspan (1981), Psychopathology and Adaptation in Infancy and Early Childhood: Principles of Clinical Diagnosis and Preventive Intervention. Clinical Infant Reports No. 1 New York International Universities Press

[2]This chart is an illustrative summary and should not imply a level of precision or finality to this conceptualization beyond a relative approximation of important events in early development

Table 1-2.
Overview of Functional Emotional Developmental Levels with Descriptions of Different Degrees of Maladaptive and Adaptive Patterns

Self-Regulation and Interest in the World (Homeostasis)
0–3 Months

Maladaptive	Adaptive
Attention is fleeting (a few seconds here or there) and/or very active or agitated or mostly self-absorbed and/or lethargic or passive	When very interested or motivated or captivated can attend and be calm for short periods (e.g., 30 to 60 seconds). • Focused, organized, and calm except when over-stimulated or understimulated (e.g., noisy, active, or very dull setting); challenged to use a vulnerable skill (e.g., a child with weak fine motor skills asked to write rapidly), or ill, anxious, or under stress. • Focused, organized, and calm most of the time, even under stress.

Forming Relationships, Attachment, and Engagement
2–7 Months

Maladaptive	Adaptive
Aloof, withdrawn, and/or indifferent to others	Superficial and need-oriented, lacking intimacy. • Intimacy and caring is present but disrupted by strong emotions, like anger or separation (e.g., person withdraws or acts out). • Deep, emotionally rich capacity for intimacy, caring, and empathy, even when feelings are strong or under stress.

Two-Way Purposeful Communication (Somatopsychological Differentiation)
3–10 Months

Maladaptive	Adaptive
Mostly aimless, fragmented, unpurposeful behavior and emotional expressions (e.g., no purposeful grins or smiles or reaching out with body posture for warmth or closeness).	Some need-oriented, purposeful islands of behavior and emotional expressions. No cohesive larger social goals. • Often purposeful and organized, but not with a full range of emotional expressions (e.g., seeks out others for closeness and warmth with appropriate flirtatious glances, body posture, and the like, but becomes chaotic, fragmented or aimless when very angry). • Most of the time purposeful and organized behavior and a wide range of subtle emotions, even when there are strong feelings and stress.

Behavioral Organization, Problem-Solving, and Internalization (Complex Sense of Self)
9–18 Months

Maladaptive	Adaptive
Distorts the intents of others (e.g., misreads cues and, therefore, feels suspicious, mistreated, unloved, angry, etc.)	In selected relationships can read basic intentions of others (such as acceptance or rejection) but unable to read subtle cues (like respect or pride or partial anger). • Often accurately reads and responds to a range of emotional signals, except in certain circumstances involving selected emotions, very strong emotions, or stress or due to a difficulty with processing sensations, such as sights or sounds, e.g., certain signals are confusing. • Reads and responds to most emotional signals flexibly and accurately even when under stress (e.g., comprehends safety vs. danger, approval vs. disapproval, acceptance vs. rejection, respect vs. humiliation, partial anger, etc.).

Table 1-2. Continued

Representational Elaboration and Differentiation
18–48 Months

Maladaptive	Adaptive		
Puts wishes and feelings into action or into somatic states ("My tummy hurts"). Unable to use ideas to elaborate wishes and feelings (e.g., hits when mad, hugs or demands physical intimacy when needy, rather than experiencing idea of anger or expressing wish for closeness).	Uses ideas in a concrete way to convey desire for action or to get basic needs met. Does not elaborate idea of feeling in its own right (e.g., "I want to hit but can't because someone is watching" rather than "I feel mad").	Often uses ideas to be imaginative and creative and express range of emotions, except when experiencing selected conflicted or difficult emotions or when under stress (e.g., cannot put anger into words or pretend).	Uses ideas to express full range of emotions. Is imaginative and creative most of the time, even under stress. Thinking is logical, abstract, and flexible across the full range of age-expected emotions and interactions. Thinking is also relatively reflective at age-expected levels and in relationship to age-expected endeavors (e.g., peer, spouse, or family relationship). Thinking supports movement into the next stages in the course of life.
Ideas are experienced in a piecemeal or fragmented manner (e.g., one phrase is followed by another with no logical bridges).	Thinking is polarized. Ideas are used in an all-or-nothing manner (e.g., things are all good or all bad. There are no shades of gray).	Thinking is constructed (i.e., tends to focus mostly on certain themes like anger and competition). Often thinking is logical, but strong emotions, selected emotions, or stress can lead to polarized or fragmented thinking.	

Additional Functional Developmental Stages
Throughout the life cycle, these stages build on emotional thinking

* *Triangular Thinking*—Triadic interactions among feeling states ("I feel left out when Susie likes Janet better than me").

* *Relativistic Thinking (Playground Politics)*—Shades and gradations among differentiated feeling states (ability to describe degrees of feelings around anger, love, excitement, love, disappointment—"I feel a little annoyed.")

* *Internalized sense of self (the world inside me)*—Reflecting on feelings in relationship to an internalized sense of self. ("It's not like me to feel so angry." Or "I shouldn't feel this jealous.")

* *Extending representational capacity to new realms of biological, psychological, and social experience*—Expanding reflective feeling descriptors into new realms, including sexuality, romance, closer and more intimate peer relationships, school, community, and culture, and emerging sense of identity ("I have such an intense crush on that new boy that I know it's silly; I don't even know him.").

* *Extending representational capacities in time and space*—Using feelings to anticipate and judge future possibilities in light of current and past experience ("I don't think I would be able to really fall in love with him because he likes to flirt with everyone and that has always made me feel neglected and sad.") Broadening reflective capacities to include the larger community and culture.

* *Extending representational capacities into reflections and anticipatory judgment with regard to new levels and types of feelings associated with the stages of adulthood, including*

  ability to function independently from, and yet remain close to, and internalize many of the capacities initially provided by one's nuclear family
  inner-sense of security
  judgment and self-monitoring of behavior and impulses
  regulation of mood
  reality-based, organized thinking;
  intimacy (serious long-term relationships);
  the ability to nurture and empathize with one's children without over-identifying with them;
  the ability to broaden one's nurturing and empathetic capacities beyond one's family and into the larger community;
  the ability to experience and reflect on the new feelings of intimacy, mastery, pride, competition, disappointment, and loss associated with the family, career, and intra-personal changes of mid-life and the aging process.

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