THE INTERPERSONAL WORLD OF THE INFANT

A VIEW FROM PSYCHOANALYSIS AND DEVELOPMENTAL PSYCHOLOGY

'As both a clinician and an imaginative researcher with infants and mothers, Daniel Stern has been in the forefront of these advances. His splendid book will be welcomed by every thinking clinician.'

John Bowlby M.D.

DANIEL N. STERN

ROUTLEDGE

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PREFACE

THE PATHS LEADING toward my writing this book have been many and interwoven. When I was a resident in psychiatry and in psychoanalytic training, we were always asked to summarize each case with a psychodynamic formulation, that is, an explanatory historical account of how the patient became the person who walked into your office. The account was to begin as early as possible in the patient's life, to include the preverbal and preoedipal influences operating during infancy. This task was always an agony for me, especially trying to tie the infancy period into a coherent life account. It was agonizing because I was caught in a contradiction. On one side, there was the strong conviction that the past influences the present in some coherent fashion. This fundamental assertion of all dynamic psychologies was one of the things that made psychiatry, for me, the most fascinating and complex of all the branches of medicine. Psychiatry was the only clinical discipline for which development really mattered. But on the other side, my patients knew so little about their earliest life histories and I knew even less about how to ask about them. So I was forced to pick and choose among those few facts about their infancies that best fit the existing theories and from these selected pickings come up with a coherent historical account. The formulations for all of the cases began to sound alike. Yet the people were very different. This exercise was like playing a game with limited moves—or worse, smacked of intellectual dishonesty—in an endeavor that otherwise adhered so closely to what felt to be true. The earliest months and years of life held a firm and prominent place in the theories, but occupied a speculative and obscure role in dealing with a real person. This contradiction has continued to disturb and intrigue me. Addressing this contradiction is one of the major tasks of this book.

A second path began when I discovered the current research in developmental psychology. It promised new approaches and tools for finding out more about that earliest period. And I used those tools for the next fifteen years, together with the clinical approach. This

book attempts to create a dialogue between the infant as revealed by the experimental approach and as clinically reconstructed, in the service of resolving the contradiction between theory and reality.

There was a third path—one that supports the argument that the present is best understood with knowledge of the past. When I was seven or so, I remember watching an adult try to deal with an infant of one or two years. At that moment it seemed to me so obvious what the infant was all about, but the adult seemed not to understand it at all. It occurred to me that I was at a pivotal age. I knew the infant's "language" but also knew the adult's. I was still "bilingual" and wondered if that facility had to be lost as I grew older.

This early incident has a history of its own. As an infant, I spent considerable time in the hospital, and in order to know what was going on, I became a watcher, a reader of the nonverbal. I never did grow out of it. So when halfway through my residency I finally discovered the ethologists, it was with great excitement. They offered a scientific approach to the study of the naturally occurring nonverbal language of infancy. And this struck me as the necessary complement to the analysis of verbal self-report as described by the dynamic psychologies. One has to be "bilingual" to begin to solve the contradiction.

Some may say that research or theory that is determined by highly personal factors should not be trusted. Others will say that no one in their right mind would bother with the arduous business of research without a history of personal reasons. Developmentalists would have to cast their lot with the latter.

The most recent path leading directly to the writing of this book has been influenced by several colleagues and friends to whom I am indebted. They have read all or portions of the manuscript at various stages, offering the kinds of suggestions and criticisms that help both to encourage and to reshape a book. In particular, I am most grateful to Susan W. Baker, Lynn Hofer, Myron Hofer, Arnold Cooper, John Dore, Kristine MacKain, Joe Glick, and Robert Michels.

Three groups have been helpful in shaping specific aspects of this book. For a period of time I was privileged to join in regular meetings with Margaret Mahler and her colleagues Annamarie Weil, John McDevitt, and Anni Bergman. While they will probably not agree with many of the conclusions I have drawn, the discussions we had en route to divergent conclusions were always enriching and deepened

my theoretical understandings. The second group, put together by Katherine Nelson to study the crib talk of one child, included Jerome Bruner, John Dore, Carol Feldman, and Rita Watson. Discussions were invaluable in thinking about the interaction between the preverbal and verbal experiences of a child. The third group was brought together by Robert Emde and Arnold Sameroff at the Center for Advanced Study in the Behavioral Sciences to study developmental psychopathology. Discussions with Alan Sroufe, Arnold Sameroff, Robert Emde, Tom Anders, Hawley Parmelee, and Herb Leiderman helped in struggling with the problems of how relational problems get internalized.

I would also like to acknowledge the ubiquitous contributions of the many people who have worked in our Laboratory of Developmental Processes during this period: Michelle Allen, Susan Baer, Cecilia Baetge, Roanne Barnett, Susan Evans, Victor Fornari, Emily Frosch, Wendy Haft, Lynn Hofer, Paulene Hopper, Anne Goldfield, Carol Kaminski, Terrel Kaplan, Kristine MacKain, Susan Lehman, Babette Moeller, Pat Nachman, Carmita Parras, Cathy Raduns, Anne Reach, Michelle Richards, Katherine Shear, Susan Spieker, Paul Trad, Louise Weir, and Yvette Yatchmink.

I also wish to thank those outside of our laboratory with whom I have had the opportunity to collaborate—namely, John Dore at CUNY and Bertrand Cramer in Geneva.

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Finally, I want to thank all of the parents and infants—my ultimate collaborators—who have let us learn from them.

Introduction to the Paperback Edition

REVISITING A BOOK WRITTEN fifteen years ago about a rapidly changing field poses a dilemma. Do I rewrite it entirely—or do I let it stand and go ahead with other things? Finding neither alternative satisfactory, I have opted for a third solution, writing an extensive new Introduction. This revision permits me to correct, add to, subtract from, and elaborate on selected issues. It also permits me to step back and evaluate the book's impact and to respond to some of the criticisms that have been directed at it. Finally, it allows me to trace where the book has led my own thinking.

Revisiting Selected Issues

This book has now been in print for fifteen years in ten languages. Four issues seem to have had the greatest impact.

THE LAYERED MODEL OF DEVELOPMENT

In contrast to the conventional stage model(s) whereby each successive phase of development not only replaces the preceding one but also essentially dismantles it, reorganizing the entire perspective, the layered model postulated here assumes a progressive ac-

cumulation of senses of the self, socioaffective competencies, and ways-of-being-with-others. No emerging domain disappears; each remains active and interacts dynamically with all the others. In fact, each domain facilitates the emergence of the ones that follow. In this way, all senses of the self, all socioaffective competencies, and all ways-of-being-with-others remain with us throughout the life span, whereas according to the stage model, earlier developmental organization can be accessed only by means of a process-like regression.

The shift to a layered model came about for two reasons. First, the classical Freudian model of psychosexual stages (replete with fixations) had not fulfilled its predictive promise for linkage with later psychopathology even after three-quarters of a century; it was not productive of new ideas and had become less persuasive and less interesting. And second, Piaget's stage model, at the time still the dominant paradigm of development, accounted for the infant's encounter with the inanimate physical world (with space, time, number, volume, weight, etc.), for which task it had been constructed—but it was inadequate to conceptualize the encounter with the richer and more complicated social-emotional human world composed of self and others, which is the world that interests me.

In this book's original 1985 edition, I stated—but without the force of solid conviction (yet)—that the infant's encounter with the human world was, if not primary, certainly not secondary, and that it had to be guided by psychological principles separate and different from those that directed his encounter with the inanimate, physical world. The two encounters proceed in parallel: That was the central point.

It had begun to occur to many working in the field that infants, and adults, had (indeed, had to have) two different, parallel systems of perception, cognition, affectivity, and memory, for encountering and making sense of the physical and human worlds. Of course, the two systems interact dynamically. This new view, a radical departure emphasizing the specificity of local knowledge in the broadest sense of those terms, has been gaining evidence and theoretical strength during the past fifteen years. (See, for example, Braten, 1998; Leslie, 1987; Rochat, 1999; Thelen and Smith,

1994.) Currently, it is proving to be extremely productive for both normal and pathological development (particularly concerning autism).

The layered model is not actually new. (The notion of parallel models is far newer.) It was greatly influenced by other nonsequential models such as the spirals of Werner and Kaplan (1963) and others. Some psychologists continue to criticize it for being essentially a model of growth, not development. There is some truth to this criticism, but a model must fit the data it proposes to embrace, and the layered model outlined here was more appropriate than the stage model to the infant's meeting with the unique features of the human world. In any event, it seems to have helped many to push their thinking further than previous models did—at least when dealing with human interaction.

UNPACKING THE SELF

The book's view that self/other differentiation begins at birth or before has been another source of much discussion, particularly in psychoanalytically influenced circles. If such differentiation is not the work of any special life phase, the "final" disentanglement of self from other cannot be dated in any meaningful sense. So instead of seeing the separation of self from other as a phase-limited developmental task, even the developmental task, this book maintains that self/other differentiation is in place and in process almost from the very beginning. Therefore, the infant's major developmental task is the opposite one, the creation of ties with others—that is, increasing relatedness. It is important to note that the research cited above on parallel (perceptual, cognitive, and affective) systems operating essentially from birth supports the contention of differentiated beginnings for self and other.

This view places more emphasis on strategies and problems in attachment when viewing pathology, and it minimizes, even does away with, the need to conceptualize phases of "normal autism," "primary narcissism," and "symbiosis." This is not to say that vaguely similar phenomena do not exist as pathological entities later in life. They do, but they do not have their points of origin in the first two years; thus they cannot constitute specific sources of the pathogenic mechanism to which regression can occur.

In general, the postulated senses of self were based on the developmental appearance of new world- and self-viewing possibilities that became available with the timed emergence of new infant capacities.

As concerns the first three preverbal senses of self—the sense of an emergent self, the sense of a core self, and the sense of a subjective (intersubjective) self—I am now less convinced that they emerge in a clear temporal sequence, each new one to be added to the others in the layered fashion mentioned above. At this point, I am far more inclined to see all three as emerging together, and largely by virtue of their dynamic interactions with one another. So if I were writing the book today, I would describe them as separate subcategories of a nonverbal sense of self, for reasons that will emerge as we proceed.

DEALING WITH THE NONVERBAL

The focus on nonverbal behavior has also stirred debate and rethinking. Developmentalists working with infants are comfortable dealing with nonverbal communication. Most psychoanalysts, however, are not; they are more at ease with words, narrative interpretation, and meaning. Since this book is in part about bringing together ideas from developmental psychology and psychodynamic psychotherapy, a natural tension—a sort of zone of turbulence—exists where the verbal and the nonverbal meet. Many of the notions and influences of the book flow from this encounter.

First of all, there is the size of the units that make up the data. Observers of babies are forced to work with small behavioral units, on the order of seconds or split seconds; larger units appear thanks to repetition and nestings of the smaller units. The method of such observers is chiefly, but not exclusively, microanalytic. Psychotherapists, on the other hand, deal with larger units composed of coherent, not nested, networks of meaning that take on a unitary sense within the narrative format. One way to (try to) bridge the gap is by finding (or attributing) implicit, narrative-like meaning to the smaller behavioral patterns. This is the path that I and others searching for clinical relevance

have chosen. Its advantages and dangers will be taken up further on.

One consequence of the book's application of a narrative perspective to the nonverbal has been the discovery of a language useful to many psychotherapies that rely on the nonverbal. I am thinking particularly of dance, music, body, and movement therapies, as well as existential psychotherapies. This observation came as a pleasant surprise to me since I did not originally have such therapies in mind; my thinking has been enriched by coming to know them better.

Perhaps the most significant result of dealing with the nonverbal world at the appropriate (micro)level of analysis is the light it sheds on framing such questions as What is an internal object? and How does it form?

INTERNALIZATIONS VERSUS WAYS-OF-BEING-WITH

The book took notions that had recently emerged in developmental psychology and applied them to the material of greatest relevance to psychodynamics. This had not been done before.

The central idea that internal objects are constructed from repeated, relatively small interactive patterns derived from the microanalytic perspective. Such internal objects are not people; nor are they parts or aspects of others. Rather, they are constructed from the patterned experience of self in interaction with another: What is inside (i.e., represented internally) comprises interactive experiences.

At various points in the book, these internal objects are referred to as representations of interactions that have been generalized (RIGs). Subsequently, I have preferred to call them ways-of-being-with, deemphasizing the process of formation in favor of describing the lived phenomenon in a more experience-near and clinically useful way.

This view of the internal object world was a departure from most of those prevailing at the time in dynamic psychotherapies. It was criticized as leaving out of the picture the subjective world—in particular, the influence of fantasies (especially "original" or innate fantasies)—and, more generally, as being a behav-

iorist view that regarded the baby as an accurate reader and constructor of what was happening to her objectively, as recorded by an observer.

The essence of the actual approach was different. The idea was to survey the data on nonverbal interaction that was then becoming accessible, thanks to new methodologies, and to take this data and imagine, on the basis of other available concepts, how an infant might mentally construct a subjective world of his experience of self and other. This is not behaviorism but, rather, a technique that involves using new observations of behavior together with informed speculations about how behavior can be mentally construed. In encompassing both, it takes a long (and often shaky) step beyond behaviorism.

The intent behind this step was not to replace notions of innate fantasies but to see how clinically relevant a subjective world could be constituted before it became necessary to resort to and explore specific innate features—fantasies, action tendencies, preferences, values, and so on. In a sense, the approach could be seen as a defining exercise to better delimit and focus on what as-yet-unknown innate features were requisite. The outcome was the opening up of a wider dialogue on both the nature of the infant's (and adult's) internal world and the process of its formation.

Selected Chapter Discussion

"The Sense of an Emergent Self" (Chapter 3)

The most exciting chapter for some, this has been the most confusing for others, due, I suspect, to the often unclear boundary between what is process and what is content. The distinction is probably hardest to make when the focus is on the (subjective) experience of arriving at a mental content.

Chapter 3 describes the several ways that organization can form in the infant's mind. The notion of the process of organization coming into being is readily graspable; it can even be inferred by observing from the outside. It is the next step that is difficult—the experience of the process of organization coming

into being. And the emergent sense of self has to do with the experience of this process.

Although there are many examples of kinds of experience (e.g., transmodal), what I now believe is missing from the list is some notion of consciousness. The experience of process must be a discrete, bounded event or moment, a sort of "coming-into-being at the present moment" (Woolf, 1923). If it does not have this feature, there is no way to distinguish the emergent sense of self from all other unattended mental and physical activities that result in the progressive organization of the mind.

The next questions thus become What kind of consciousness are we talking about? And emergence into what kind of moment? I avoided these questions in the original book. To approach them we will need a notion of primary consciousness that is applicable to infants early in life.

Researchers working within the new perspective of an embodied mind, where the traditional sharp separation between body and mind is no longer maintained, have provided insights into the nature of a primary consciousness that is usable in infancy (e.g., Clark, 1997; Damasio, 1999; Varela, Thompson, and Rosch, 1993). Primary consciousness is not self-reflective, it is not verbalized, and it lasts only during a present moment that corresponds to "now."

The basic idea consists of several parts. The first is that all mental acts (perception, feeling, cognition, remembering) are accompanied by input from the body, including, importantly, internal sensations. The internal input includes the momentary states of arousal, activation, tonicity, levels of motivational activation or satiety (in various systems), and well-being. This input is what Damasio (1994, 1999) has called "background feelings," which are similar to the vitality affects introduced in the present book. (See, especially, Damasio 1999, p. 287.) The other input from the body includes all the things the body does or must do to permit, support, amplify (etc.) the ongoing mental activity (perceiving, thinking, etc.), such as postures formed or held, movements (of the eyes, head, or body), displacements in space, and contractions and relaxations of muscular tone. The body is never doing nothing. (Envision Rodin's Thinker. He sits immobile, posing his head on his hand and an elbow on his knee. True, he is not moving, but

there is extraordinary tension in his posture, suggesting active, intense proprioceptive feedback from almost every muscle group. This feedback, along with the Thinker's presumably heightened arousal, provides the background feeling against which his specific thoughts are etched. It is the contrast between the foreground and the background that captures the viewer and expresses the message.)

All of these body signals come from the self—an as-yet-unspecified self. Such signals need not be attended to. They need not enter into awareness. Yet they are there in the background. They are the continuous music of being alive. That is why I refer to changes or modulations in this music as vitality affects. It is this music that will permit the emergent self—the "proto-self" in Damasio's (1999) terms—to appear. But first it must be yoked with a mental activity.

The second element, then, is an intentional object, as the notion is used in philosophy. The intentional object is whatever the mind is stretching toward. It is whatever is "in mind." (There need not be an intention in the psychological sense of a motivated goal-directedness.) It could be a red ball, an internal pain, the sensation of the nipple in the mouth, a thought, a memory.

Primary consciousness is the yoking together, in a present moment, of the intentional object and the vital background input from the body. The body input specifies that it is you who is now having the experience of the intentional object. And a sense of the self emerges as the living vital experiencer of the intentional object. This is what I mean by a sense of an emergent self—experiencing being alive while encountering the world (or encountering yourself) at a given moment, an awareness of the process of living an experience. The contents of the experience could be anything.

Each time there is a moment of primary consciousness, the self as experiencer is felt and is situated in the world. At that moment, the sense of an emergent self appears. This must happen many times an hour, or minute. Although these moments of primary consciousness are short and periodic, they offer rehearings of the continual music of living. The sense of an emergent self is a sort of "pulse," as Damasio (1994) calls it, which continually respecifies

the living self in the process of experiencing. Furthermore, the dynamic quality of vitality affects ensures that the experience has a contoured time line.

There is no reason not to believe that dogs and higher animals experience something similar to primary consciousness. And among humans, moments of primary consciousness in early infancy appear to occur most markedly during the states of alert inactivity and alert activity.

Many of the examples given in Chapter 3 concern the yoking together of two different intentional objects. What I want to emphasize is that these yokings must, in themselves, be yoked to the vital bodily feelings and shifting vitality affects of experiencing. With that understood, the chapter can be reread in the light of a more precise definition of what is emerging, and when.

"The Sense of a Core Self: I. Self Versus Other" (Chapter 4)

In Chapter 4, the sense of a core self is described as consisting of four relatively invariant experiences: self-agency, self-coherence, self-history (continuity), and self-affectivity. Today, I would reduce the number to three by eliminating self-affectivity, which is no longer needed because it becomes subsumed by the expanded notion of the emergent self described above and by the sense of continuity described below. (My intent is not, however, to minimize the central and omnipresent role of affect in mental life.)

I would also change the descriptor self-history to self-continuity. History is too rich a term, implying a sense of past and its connectedness to a present. All I really mean is that each time the infant is confronted with herself at moments of primary consciousness, she feels the "same" by virtue of the invariants created from her vital background feelings and her vitality affects and their expression. Continuity as a sense, not as a fact, is actually a consistently refound continuity, since the sensation of going-on-being emerges only when an experience is brought forward into a present moment. Effectively, then, one feels continuous even if most of the time the sense of continuity is nowhere in play. But when it is, one refinds the sense of being the same.

"The Sense of a Core Self with Other" (Chapter 5) and "The Sense of a Subjective Self" (Chapters 6 and 7)

If, as mentioned above, the infant starts life with three partially distinct systems for experiencing self, others, and inanimate objects, certain changes are required in the developmental schema as originally described. A crucial set of findings bears on this issue.

Recent evidence for the presence of mirror neurons and adaptive oscillators along with the deepening literature on early imitation suggest that, probably from the beginning of life, infants have the capacity for what Braten (1998) terms altero-centric participation or what Trevarthen (1979) has long called primary intersubjectivity.

The crucial findings are as follows. In monkeys, mirror neurons have been found in the premotor cortex (Rizzolatti and Arbib, 1998). When one monkey executes a gesture involving the hands and mouth, certain neurons in this area fire. When a second monkey watches the first monkey perform the gesture, mirror neurons in the second monkey's brain fire in the same area as in the performing monkey. Presumably, this phenomenon provides the watching monkey with a neurobiological basis for, in some fashion, feeling in his own body an act that occurred in another's body. The implications for affective resonance, imitation, intersubjectivity, and empathy are evident. These experiments have not yet been repeated in humans. According to Rizzolatti and Arbib (1998), however, when an adult human watches another person make a gesture, the threshold for firing in the same muscles is reduced.

Another set of experiments points in the same direction. Researchers have found adaptive oscillators that permit us to synch our movements to those of others who are moving (McCauley, 1994; Port, Cummins, and McCauley, 1995; Torras, 1985). Apparently, there are "clocks" in different systems within us that fire at a given periodicity but can be reset by an incoming stimulus such as a movement external to us made by another. This resetting permits our system to establish, and remain in, synchrony with the timing of another system. Such findings supply a biological mechanism for the long-observed human (including infant) capacities to feel another's action and to act accordingly, in an age-appropriate way.

Yet another line of research bears on recognition of the self versus the other, the timing of this capacity, and a possible mechanism underlying different perceptual processes for self versus other.

It has been argued that infants have a precocious and exquisite appreciation of contingent relations. Further, they can distinguish perfect contingency from high but imperfect contingency (Watson, 1994). Perfect contingency is the necessary consequence of self-generated behavior, whereas high but imperfect contingent relations are the almost inevitable result of parental mirroring, attuning, and parental responsivity in general.

Other findings suggest that infants orient more to perfect contingencies (i.e., to self-generated events) during the first several months of life, and that after three months of life it is the high but imperfect contingencies (i.e., other-generated events) that become more interesting to the infant. These phenomena occur quite early, indeed (Bahrick and Watson, 1985; Gergely and Watson, 1999; Rochat and Morgan, 1995; Watson, 1994).

The importance of perceiving the different contingency relations as mechanisms for helping to distinguish self from other was noted in the original edition; however, this newer body of research carries such ideas much further, puts them on a more solid footing, and, along with the expanding perspective on early imitation, necessarily alters not only our view of the infant's experiences of self-with-other but also our dating of the onset of intersubjectivity.

I will start with the first of these concerns. Originally, most of the emphasis was placed on the infant's experience of a self-regulating-other. I do not intend to alter the centrality of that experience. What is needed, however, is a more extended repertoire of experiences of self-with-other, which will include the extraordinary yet common situation whereby one's nervous system is captured, so to speak, by the nervous system of another, thanks to mirror neurons and adaptive oscillators, and probably other as-yet-undiscovered mechanisms. At such times, the invariants that specify a core sense of self are not completely co-opted by the other. The core sense of self is not swept away. There is only a partial overlapping. Still, the experience will have its own quality and make up yet another ultimately discernible way of being-with-another. I call this latter phenomenon self-resonating-with-another.

The second modification to the original schema concerns the developmental onset of intersubjectivity. But here I must make a correction. In my references to the sense of a subjective self in Chapters 6 and 7, what I really meant was the sense of an intersubjective self. That is the descriptor I have always used in speaking about it.

The main question is When does intersubjectivity begin? In Chapter 6, I maintain that it begins, properly speaking, around nine months of age with the advent of interattentionality (e.g., pointing), interintentionality (e.g., expecting motives to be read), and interaffectivity (e.g., affect attunement and social referencing). In light of the new evidence on other-centered-participation shown by infants in their many forms of imitation, as well as the new findings on mirror neurons and adaptive oscillators, I am now convinced that early forms of intersubjectivity exist from almost the beginning of life.

This represents a shift in my thinking, especially since I took issue with Trevarthen (in Chapter 6) for positing a "primary intersubjectivity" from birth to around nine months and then a "secondary subjectivity" after nine months (Trevarthen, 1979; Trevarthen and Hubley, 1978). I am now in agreement with these findings on the earlier origins. However, in order to preserve the special features of secondary intersubjectivity (again, as noted in Chapter 6), I will still refer to the secondary intersubjectivity that arises around the ninth month as simply intersubjectivity. (Although there is a fairly clear boundary between primary and secondary intersubjectivity, these terms must be considered provisional until we have a fuller picture of which developmental domains, as they emerge, are encompassed into a coherent intersubjective field, and at what ages.)

In any event, the most important point is that a primary intersubjectivity starts from the beginning, as does the sense of an emergent self, as does the sense of a core self (as reconfigured). Accordingly, the developmental schema in Figure 2.2 (p. 32) needs to be revised.

We now find the following main subcategories of the sense of self-with-other:

- The first is the self-regulating-other, described in Chapter 5, which concerns the regulation of security, attachment, arousal,

activation, pleasure, unpleasure, physiological gratification, self-esteem, and so on.

- The second includes the various experiences of primary intersubjectivity whereby the self is linked to the other by way of other-centric-participation—including self-resonating-with-another, as described above.
- The third is the self-in-the-presence-of-the-other. This refers to the being-with that may occur when the infant is perceiving, thinking, or acting, alone but in the physical proximity of a caregiver, whereby the physical presence (without any interactive, psychological presence) serves as a framing environment in which the infant can continue to be psychologically alone, on his own. In a sense, this subcategory is a special variation of the self-regulating-other (Stern, 1995, ch. 6).
- There is yet a fourth subcategory, but the extent to which it expands and elaborates the previous three is still to be clarified. It is the sense of self-with-others, particularly as part of the family triad. Accumulating evidence suggests that the infant (at least by three months) starts to form expectations and representations of self as part of a triadic constellation (Fivaz and Corboz, 1998). This is to be expected when so much time is spent in triads as well as in dyads. But the question remains: To what extent should the sense of self within a triad be seen as parallel to the sense of self in dyads, and how and when do the two influence one another?

Together these senses of self form the main ways-of-being-with-another. As development proceeds, all are in constant dynamic interaction, helping to define their separate boundaries.

"The Sense of a Verbal Self (and a Narrative Self)" (Chapter 8)

In the 1985 edition, the ability to create an autobiographical narrative was given a very small role as merely a tag-on to the verbal self. I no longer see it that way. The ability to tell a narrative about your own experience is a separate fundamental capacity, beyond and independent of fashioning words from symbols and thus verbally referring to yourself and your world. The narrative capacity

evolves much later (at around three years of age) than language per se (around eighteen months), and it requires different aspects of mind. Granted, an infrastructure of language ability must exist before the telling of a narrative can manifest itself. (A narrative format for perceiving can precede language, however.)

At this writing, I am convinced that the development of the narrative capacity opens the way to completely new domains of the self—namely, the narrative self, or selves, whose importance is evident when the following considerations are taken into account.

1. The narrations told to self and others about your experience become the official history of your life. They constitute your autobiography and, as such, are the primary data of talking therapies that deal with the past—both the past of one minute ago and the far past of childhood.
2. In childhood most autobiographical narratives are co-constructed with others, usually the parents or siblings. Daily history is established by parental questions as ordinary as "What happened at school today?" and "What did you and your brother do this morning?" The narrative that results from these questions is truly a co-construction, whereby the parent and child work together to gather the pieces of the story, order them sequentially, give them a coherence as a story, and then evaluate the story by establishing its emotional highpoints and values. The product becomes the official history shared by the family and a part of family lore.

A new body of research views the process of co-construction between parent and child as a form of regulation having much in common with other forms of regulation (e.g., attachment). Different regulatory styles are now recognized, each having different consequences for the contents of the narration. An important aspect of the co-constructing is that it is highly asymmetric. If the parent weren't there, only the child could know what happened. Still, the parent is more expert in recognizing where pieces of the told story are missing or not likely (etc.) and in creating a coherent whole. The two must negotiate a final product that always has an

uncertain relationship with the historical truth (de Roten, 1999; Favez, 1996; Stern, 1990).

Another aspect of creating a narrative of "what happened" is that the process of construction acts as a sort of laboratory in which a narrative self is forged, mistakes are corrected, elaborations added, and adjustments fine-tuned. The resulting narrative self will use implicit and explicit material from all the other senses of self discussed above; it is the one that will be both subject and currency of the clinical process.

In light of the foregoing, I now offer the following revised version of Figure 2.2.

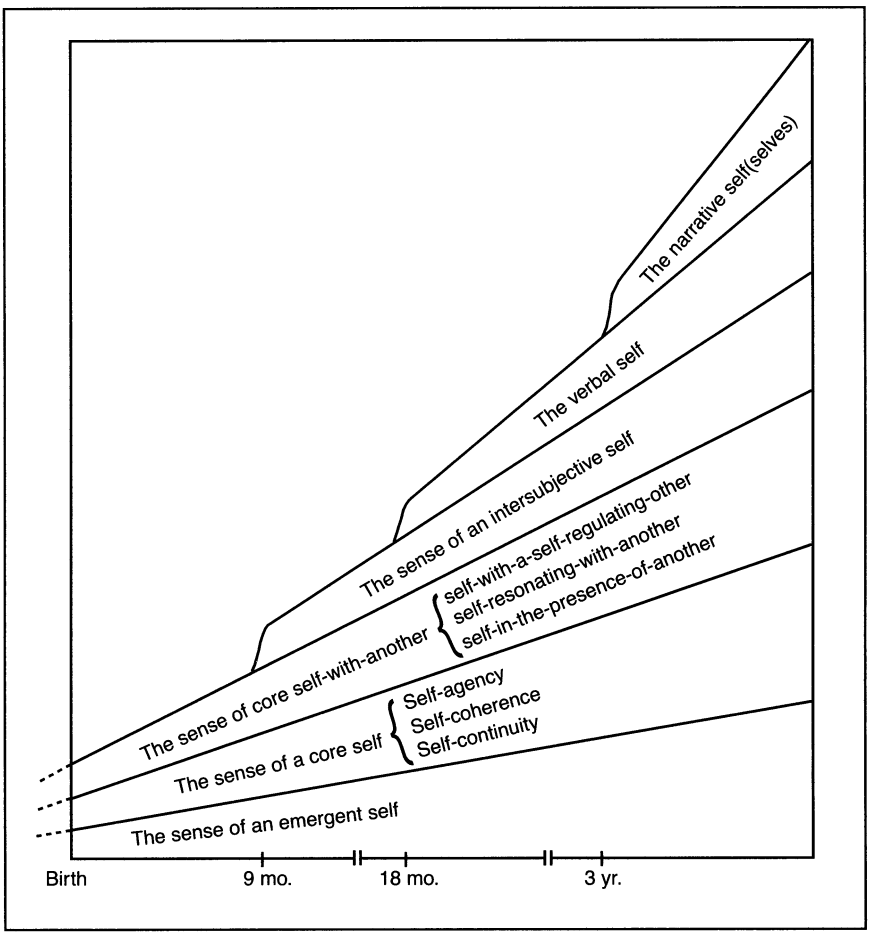

FIG.2.2

"Some Clinical Implications" (Chapters 9, 10, and 11)
The chapters in Part III concern the clinical implications of Parts I and II. To significantly add to this section requires a second book. In fact, the original plan for The Interpersonal World of the Infant was to break it into two volumes, the second to consist of the clinical implications and applications of the first. This second book is still brewing.

Response to Major Criticisms

THE SOCIAL-CONSTRUCTIONIST CRITIQUE
Social constructionists have criticized The Interpersonal World of the Infant for being decontextualized because I do not specify in detail the local culture in which the work takes place (Western, late twentieth century, middle and upper class, mostly white, etc.) and because I do not examine how the assumptions, methods, and nature of this local culture (which I share) determine the results of the study and hence, ultimately, the theory that emerges from it. Accordingly, I can discover only what I already know. I do not remedy this situation by comparing the local assumptions, methods, and findings with those known from cross-cultural work. And, finally, I imply that what I find in this very local culture is universal and innate because I don't say otherwise (see, for example, Cushman, 1991).

I agree with much of this social-constructionist critique. It is necessary and useful for political as well as scientific reasons. I count on the social constructionists to write about it, but to have done so myself in the depth required to do justice to the effort would have resulted in my writing a different book. So two books are needed—theirs as well as mine.

It is within the context of my general appreciation of the social-constructionist criticism that I want to clarify where I believe it goes too far and becomes unproductive.

The Interpersonal World of the Infant is primarily about the process whereby sociocultural contexts are enacted so as to shape

people's behavior, their inner worlds, their relationships. In short, it is about the process of culturally contextualizing the developing infant. The social constructionists, however, seem to ignore what is a very nuanced appreciation on the part of most developmentalists concerning the difference between culture as viewed from the outside, at a distance, and its specific enactment in terms that could influence an infant. For instance, we well know that socioeconomic status in this Western culture is the most potent statistical variable affecting many global outcome measures. But that tells us nothing about how it acts.

In the context of the book's importance, the results of the contextualizing process (which, granted, are locally determined) matter less in the long run than the process itself at this stage of our knowledge. There is not an infinite number of variables through which any culture can be enacted early in life such that they will be perceivable by the infant. The repertoire comprises facial expressions, or the lack thereof; visual regards, or their avoidance; vocalizations, or silences; body orientations; physical distances; gestures; ways of being held; the rhythms, timing, and duration of acts and activities; and so on. No other human alphabet for sociocultural contextualization exists. To continue the analogy: Different cultures can make different sentences with this same alphabet, but first we must examine how such an alphabet can (not must) work. I'd have thought that the social constructionists would have been delighted to find an alphabet—and a way of using it—so systematically described.

Suppose that at the very beginning of the book I had written a clear disclaimer, something like "The role played by the study's population, methods, hypotheses, and basic assumptions in determining the study's findings will not be examined. I assume that the readers are deeply familiar with white, middle- and upper-class, late-twentieth-century Western society. This book is about how, given our basic assumptions, our infants develop into people like us. Obviously, then, no conclusions drawn here need pertain to any other culture." (All of which I, too, believe—and take for granted—and probably should have said to avoid any confusion.) Would that disclaimer have satisfied the social-constructionist critics? Would the book, even with the disclaimer, still have been

criticizable on political grounds as a description that inevitably obscures a proscription—and is thus a concealed political act? To avoid this outcome, how often must the disclaimer be recalled to the reader? Or must all the cultural variations be put into play and examined? And if they were, would it not then be another book, possibly a lesser one? To what extent is the social-constructionist critique primarily "politically correct," overly confining, and only secondarily helpful?

Cushman (1991) states that because I do not specify and examine my context, my findings and resulting theory are implied to be universally applicable, when in fact they apply only to the local context I work in. This implication, he claims, gives a misleading and unjustifiable weight to predesign, to the innate.

In this book I have tried to indicate whenever there appears to be an innate preference, or tendency, or capacity, or timing of appearance. These factors are viewed as guidelines within which different specific uses can be created under different (cultural or other) conditions. But Cushman misunderstands my broad use of the term predesign when he states, for example, that I have no evidence that the process of attunement is predesigned. His argument would be that attunement is not seen in the same form, or perhaps not at all, in another culture. But what I mean by predesigned is that there is an innate human capacity to feel the effortful, temporal form of another's action. For example, the aforementioned findings regarding mirror neurons and adaptive oscillators supply a biologically based mechanism for the human capacity to feel another's action. The fact that this capacity can take different cultural forms does not make the capacity less innate; it only suggests how different cultures might use it. This was very clearly the sense in which I was using the term predesign. Misunderstanding that could only be in the service of another agenda.

There is yet another aspect of context that developmentalists must be sensitive to. Although the culture may be present in all human behaviors, to the infant the cultural manifestations of some behaviors are more opaque and those of others more transparent. The infant also has less access to the entire culture than adults do. Most cultural elements of a society have to be filtered

and varied through subgroups, then through individual family or kin groupings, and finally through the immediate caregiver(s) and peers. Only then does the cultural enactment reach the young infant's effective immediate surround.

As the infant develops, her exposure and access to cultural features undergo changes. Accordingly, the very nature of the cultural element is, in itself, a developmental variable. Language is a good example. In the beginning the paralinguistics carry the cultural enactments. Later, the arbitrary sound symbols do so as well. (This is why I insist that a sharp distinction be made between language as music and language as lyrics—not because one is cultural and the other isn't, as Cushman suggests, but because the cultural penetration, or surroundedness, is different in depth, breadth, and nature.)

THE RELEVANCE OF INFANT OBSERVATION FOR PSYCHOANALYSIS

Green (1997), whose field is psychoanalysis, and Wolff (1996), in infant research, both conclude that infant research and observation have no relevance for psychoanalysis. Aspects of their position are similar inasmuch as Green has relied heavily on Wolff's criticisms.

The first question ought to be Relevant for which psychoanalysis? Psychoanalysis is many things to many people. Wolff chooses to define its domain in the limited terms of the early, traditional, Freudian psychoanalysis of roughly seventy-five years ago—one that embodies the unconscious, particularly unconscious fantasies, and whose goal is making the unconscious conscious. But that definition leaves out many issues of major concern to more modern psychoanalysis, especially the world of object relations, inasmuch as they concern internal representations, transference, intersubjectivity, and the creation of narratives—even though it is in exactly these areas that infant research has been most pertinent and helpful to psychoanalysts. In effect, Wolff's definition precludes the possibility of relevance.

Green has imposed different but equally strict boundaries on what psychoanalysis is and, accordingly, what can possibly matter to it. He chooses to accept as psychoanalytic only data that have been gathered within, and ideas that have directly emerged from, the tightly defined psychoanalytic situation and its technique.

Given these constraints, infant observation could have only indirect relevance at best, and even then no more than anthropology, say, or literature. So minimalist a position jeopardizes the relationship of psychoanalysis to all other knowledge of human beings. The result is a severely isolated field of dwindling interest and pertinence to other sciences and humanities.

Green disqualifies the relevance of infant observation on another basis as well, insisting that the data of psychoanalysis consist of words, symbols, narratives, and meanings, all outside the infant's capacity. The infant's raw experience cannot be reorganized après coup—that is, by deferred action—because that would require the mediation of language. Yet deferred action is the central point of interest in psychoanalysis.

This position does not take into account the fact that the infant starts to accumulate nonverbal, nonsymbolic, implicit knowledge about his object relations, and that such knowledge is now recognized as containing far more elaborate representations than previously thought possible. These early representations form the basis for later conscious and unconscious object relationships, including what surfaces in the transference.

Green, along with and following Wolff, also claims that the approach taken in The Interpersonal World of the Infant is in many respects pseudoscientific, circular, or heavily saturated with theory that directs observation—even that it is anthropomorphic and pathomorphic. (See also Barratt, 1996; Wilson, 1996). Both argue that I had a preexisting theory of infant experience based on my view of adult psychopathology and that I selectively identified a few developmental research findings to prove what I already assumed. Such reasoning would indeed have been circular, but it is not what I did.

Rather, I did the following. I explored all the scientific observations in the developmental literature as of 1984. My aim was to describe which capacities the scientific community thought were available to infants at different ages. (Recall that this was time when the explosion of research about infants had been in full swing for almost two decades, although most psychoanalysts and other psychotherapists were unfamiliar with the domain.) Toward this end I established an objective set of limiting (and starting)

conditions that could inform inferences about what infants could conceivably do or not do in constructing their subjective experience. This phase was the outgrowth of more than twenty years of reading and contributing to the literature on infant development—hardly a matter of picking and choosing a few findings that supported some preconceptions. It is pertinent to point out that there are over 400 references in the book, mostly to the work of others, on the basis of which I attempted to determine the consensus of the field so as to set parameters for making inferences and perhaps offer new possibilities. These sources were largely independent of psychoanalytic theory and considerations of psychopathology in general.

Such an approach constitutes a necessary and valid way to use the findings in one domain of knowledge to inform another. It is not circular up to this point. Yet Green and Wolff ignore or dismiss this essential first step of defining the context in which inferences, speculations, and hypotheses can be generated.

The second step in my work is the more problematic one: drawing inferences or hypotheses from the objective constraints. There is no way that inferences about another's subjective experience can escape at least some contamination from the experiences and beliefs of the person doing the inferring. But Wolff is incorrect in diagnosing the origins of that inevitable contamination in my work. It arose not from my clinical experience with patients but, rather, from the totality of my empathic, acculturated understanding of normal human behavior, of which my knowledge gained from patients is only a very small part.

We are stuck with circular contamination in our inferences about others' subjective experience. This is an old dilemma endemic to all theorizing, psychoanalytic or otherwise. The problem cannot be avoided, only confined and recognized. However, when we have been broadly inclusive rather than highly selective in identifying consensual objective constraints, and when we have used the totality of our human experience as opposed to the tenets of any preexisting theory in the process of inference making, then we have skirted circularity scientifically insofar as this is possible. There are not many such partial escapes in our common endeavor to understand human subjective experience.

Both critics also failed to make the crucial distinction between the criteria acceptable for hypothesis generating and those acceptable for hypothesis testing. The Interpersonal World of the Infant is an attempt to define the former. The real question now is whether the hypotheses generated in the book have anything of interest to say for the ongoing psychoanalytic and psychotherapeutic discourse and vice versa. In the minds of most, it does.

The Book as a Map to Future Work

A book such as this foreshadows the direction of one's own future work. Below are some of the threads, some clearly visible and others less so, that I have picked up and developed further during the fifteen years since its writing.

STUDIES ON CHILDREN'S NARRATIVES

As it became more and more evident that the narrative sense of self/selves was key to later clinical issues, and as the co-constructing process increasingly showed itself to be crucial, several colleagues and I initiated a study of children's narratives (Favez et al., 1994). (A move in this direction had already been stimulated by the group put together by Katherine Nelson [1989] to analyze the bedtime monologues of a two-year-old.) Children from four to six were engaged in a highly novel and emotionally charged standard play situation, each session of which was televised. Half the mothers watched the session through a one-way mirror; the other half did not see what happened. Immediately after the session, each child and mother reconstructed a narrative of the events just experienced by the child, who simply reported "what happened and what he felt." We could thus compare the narration with the objective record. Indeed, it is important that we could know objectively what happened and how the child reacted, because in much of the research on narrative reconstruction there is no objective referent.

The most striking results were those that showed how different were the styles of negotiating the reconstruction. Some mothers

went mainly after the facts and the sequence of events, with less emphasis on the coherence of the story and the emotional evaluation of what happened. Others were more interested in the coherence and emotional evaluation. Still others were altogether passive, in the sense of being nondirective. As might be expected, the style of co-narration was a powerful determinant of the form and content of the final narrative, regardless of whether it was inconsistent with what actually happened. Distorted or not, the co-narratives remained relatively stable over several months (Favez et al., 1994; Favez, 1996).

Each type of co-narration was found to be associated with specific dyadic interactive patterns during the process of co-construction (Favez et al., 1994; de Roten, 1999). The style of co-construction emerged as a regulatory strategy that demanded an integration of cognitive, affective, and nonverbal action. The co-construction of autobiographical history can thus be added to the list of crucial dyadic activities—such as attachment, free-play, and feeding—that demand coordinated strategy to accomplish. Different such strategies exist, and each has potentially different clinical consequences.

Turning to the Mother's Experience

Although its emphasis is on the infant, The Interpersonal World of the Infant is all about dyadic interaction at the interpersonal and intrapsychic levels. The conceptualization of the dyad is symmetrical, providing the basic model for exploring mothers' overt interactive behaviors and the mental representations in constant silent dialogue with them. Over the years, I had treated many mothers both with and without their babies, and had observed many others while doing research with the infants. Ultimately, for reasons that are not entirely clear to me, the mothers in the background of The Interpersonal World of the Infant came to the foreground as the subject of a focused reflection.

The most surprising consequence of this reflection was the realization that mothers create a new mental/psychic organization upon becoming mothers—a phenomenon I call the motherhood constellation. This constellation was a unique, independent, fundamental organization of mind, and not, as many people have as-

sumed, a derivative or new version of old complexes, or a coloration added to a previously operating organization in the mothers' life. The resulting book (Stern, 1995) concluded with an examination of that constellation.

The Triad

Since infants appear to live in triads, quartets, and so on, as well as in dyads, I deemed it necessary to expand the dyadic work to include the triad at least. This might seem a simple task, but first it was necessary to grapple with a fundamental question: Is the triad, for an infant, a set of three interrelated dyads, or is it an entity in itself that can be represented? Through the work of Fivaz and Corboz (1998) I was convinced that the triad is a unit in itself. This conclusion led to a series of collaborations exploring the infant's ability to deal with different triadic configurations and their transitions. Our observations suggested that, between three and six months of age, infants start to form schemas of the triadic configurations of which they are a part (Fivaz et al., 1995; Stern and Fivaz-Depeursinge, 1997).

The World of Subjective Experience

The problem of how we can know the nature of the infant's subjective experience is always lurking in The Interpersonal World of the Infant. Of course we can't know it. And even with the onset of speech, any close mapping of narration to experience is uncertain and fraught with difficulties. The solution opted for in the book was to hypothesize, conservatively and not too specifically, about the infant's subjective life based on the aggregate of available objective findings and on the scientific zeitgeist on such questions.

Despite the need for great caution in such an endeavor, I decided to go even further in The Diary of a Baby (Stern, 1990). This was a "fun" book, written during the relocation of my laboratory—a sort of "pony" of The Interpersonal World of the Infant, intended mostly for parents. However, for that project, I could no longer be conservative and nonspecific. There could be no story if there were no specific happenings and specific experiences. So I made up these happenings and experiences. I was guided by accepted objective data, but I made them up nonetheless. This exer-