ARTICLE

"I SENSE THAT YOU SENSE THAT I SENSE . . . ": SANDER'S RECOGNITION PROCESS AND THE SPECIFICITY OF RELATIONAL MOVES IN THE PSYCHOTHERAPEUTIC SETTING

KARLEN LYONS-RUTH
Harvard Medical School

For more than 30 years, Sander has been one of our foremost theorists of dyadic systems. Sander is also one of the few theorists who have appreciated the problem of accounting for the emergence of a coordinated two-person system. In this pioneering role, he has struggled to create a language and to forge a set of principles and constructs when few other thinkers were grappling with similar issues. The intercoordination of human life at many levels of social organization, such as the family or the culture, is most commonly taken as a given. However, from his perspective both as a psychoanalyst and as an infant observer, Sander found himself engaged in the task of trying to describe the microprocess through which two unacquainted individuals come to know one another's minds in the service of conducting complex coordinated activity.

Sander's initial thinking about the critical role of what he calls *recognition processes* in human relationships grew out of his participation as a research psychiatrist in Eleanor Pavenstedt's longitudinal parent–infant study, in which he observed a wide variety of mother–infant dyads. These observations left him keenly sensitive to the infant's spontaneity and initiative in constructing his or her own direction of activity, as well as to the infant's vulnerability to sacrificing that spontaneity when pressured to engage in a performance desired by the other. This focused his attention on the nature of the negotiations within the mother–infant system. He viewed these negotiations as bringing about workable solutions to the mutual modifications that are necessary for achieving the gradual, but increasingly complex, process of adaptation between the new infant and his or her mother.

Sander came to view this adaptive process of fitting together as epigenetic in early development. That is, without stability at one level of task complexity, new and emergent properties of the system that are essential to the accomplishment of tasks at a next level of complexity may fail to appear. Sander's observations of negotiations within the dynamic tensions of the mother–infant system over the first 3 years of life made clear the wide spectrum of possible outcomes that are emergent properties of such a dyadic system (e.g., Sander, 1965). From these data he proposed an epigenetic sequence of five essential dyadic tasks of adaptation to be

Reprints are available from the author at Department of Psychiatry, Cambridge Hospital, 1493 Cambridge St., Cambridge, MA 02139

INFANT MENTAL HEALTH JOURNAL, Vol. 21(1–2) 85–98 (2000)

negotiated over the first 18 months of life that set the stage in the second 18 months for the negotiation of a sixth adaptive task, which he termed *recognition* (Sander, 1962). He placed this task of recognition in the second 18 months of life because a large body of research indicates that 18 months is a time when self-awareness first emerges, as indicated in mirror self-recognition (Lewis & Brooks-Gunn, 1979) or in the infant's head shaking "No" (Spitz, 1957).

As described in more detail in the next section, the sixth adaptive task involves the toddler's becoming aware that another person is aware of what he is aware of within himself.

However, a tension emerges in Sander's work between this early use of the term *recognition* to refer to a task-specific domain at 18 months and his use of the term in later writing. In his later writing, Sander has used the term *recognition* more broadly, as part of a *recognition process* that occurs within the dyad but lies at the heart of self-organization. This later usage implies that recognition process has a more fundamental role in development than that of a stage-specific or task-specific accomplishment at 18 months.

In this broader usage, Sander references the concept of recognition process to the concept of adaptation, a concept emphasized by psychoanalytic writers such as Hartmann (1939/1958) and Erikson (1950), as well as by Piaget (1952, 1971). The concept of adaptation led Sander to consider the biological basis of fittedness between the individual and his caregiving surround. As detailed in Nahum's overview of his contributions (Nahum, 2000, this issue), he turned to the systems theories elaborated by the biologists Weiss (1947) and Von Bertalanffy (1952) as the most promising and complex models that might capture some essential features of the processes of adaptation in two-person systems. In presenting the biological basis of adaptation, Weiss (1949) proposed a general principle, "the device of specificity," to account for the connectedness in living systems that operates at all levels of complexity from the molecular, to the cellular, to the visual and auditory systems, to the immune system, and to recognition at the level of conscious awareness. Sander views this "device of specificity" as a central organizing principle by which the infant begins to adapt to, or fit together with, its caretaking environment from the beginning of life.

His published writings do not address the potential tension between a view of recognition process as part of a device of specificity fundamental to adaptation and self-organization and the designation of recognition as an adaptive task emerging out of the capacity for self-awareness at 18 months. In addition, in his published work, Sander does not elaborate on the ways that the construct of recognition process might be applied to psychotherapeutic process.

In this article I will take up this tension in Sander's writing regarding the role of recognition process in development, consider the ways that recognition process might be thought to operate outside the realm of reflective self-awareness, then explore how such a recognition process might be conceived to work in the psychotherapeutic setting, in a spirit consistent with Sander's larger theoretical framework. Clinical material will illustrate how the concept of recognition process can begin to specify the microprocess of dyadic relational moves that create the potential for new ways of being together to emerge in the psychotherapeutic relationship. In the final sections of the article I will relate Sander's recognition process to a dynamic systems model of psychotherapeutic change.

RECOGNITION PROCESS IN PARENT-INFANT TRANSACTIONS

In an unpublished article presented in 1965, Sander first developed his views on the role that recognition process plays in the developmental process of the second 18 months of life. As established by a wide range of developmental studies, at 18 months of age the infant reaches

a new level of self-awareness in that he or she first becomes capable of representing the self symbolically (e.g., Kagan, 1981; Lewis & Brooks-Gunn, 1979; Spitz, 1957).

Sander (1965) theoretically ties the emergence of self-representation to "interactions of recognition" between child and parent. He points out that the interaction between parent and toddler is often based on the parent's inferences regarding the toddler's intentions, leaving ample room for errors in the parent's attributions about the goals of the child's behavior. He reasons that accurate recognition by the caregiver of what the child is aware of as his own intentions would, in his words, "facilitate reciprocal coordinations which can achieve the quality of recognition and facilitate a more acute and accurate inner perception—again fostering self-recognition" (p. 11) or, as Sander states later, fostering the child's sense of his inner experience as his *own.* These "reciprocal coordinations that can achieve the quality of recognition" are later described in terms of "the specific matching of communicative exchanges on the part of the mother to the cues which are given expression by the child" (p. 12). He cites Spitz's (1957) converging view that all self-awareness combines awareness of one's own person tinged with the consciousness of the other's reactions to it. Sander (1965) also proposes that the second 18 months of life may constitute "a phase of optimal inner awareness" for "owning" one's own experience. He describes the young child during the period from 18 to 48 months as passing from a toddler phase in which the child expresses his inner world of wants, intentions, and plans more or less directly, through a period in which direct expression becomes conflicted, to a time toward 48 months in which there can be general concealment of the inner world. This leads him to identify the second 18 months as a phase-specific time span for the incorporation of experiences of the other's recognition of one's own inner perceptions into aspects of an accurate and externally validated self-representation.

In the remainder of the article, he describes aspects of the play sessions of three preschool girls with an emphasis on how the spontaneous expression of inner experiences was or was not integrated into their fantasy play and into their reciprocal exchanges with the adult play partner by 36 months of age. He emphasizes that in the context of a high level of reciprocal communication over time with the parent, the child by 36 months could express detailed themes of her inner world *to* the interviewer and, in return, experience recognition and acceptance of her inner world *by* the interviewer, further consolidating her sense of ownership of her own experience.

In this early work, then, Sander embeds the task of recognition within the epigenesis of an ongoing sequence of adaptations of increasing complexity, an epigenetic process that will continue to reorganize how shared awareness, or recognition, will be experienced into adulthood. In later work, however, Sander (1994) also describes instances of specificity in the coordination of joint activity within the infant–parent system that do not require the level of self-awareness emerging in the 18-month-old toddler. For example, he describes an interaction from a film of a father and his 8-day-old baby, taken in the course of the Boston University Longitudinal Study of Personality Development (Sander, 1984). On first viewing, what apparently happened was that the baby became fussy in the mother's arms, was handed to the father, and fell asleep.

When the film was viewed frame by frame, however, the specificity of coordination between baby and father became apparent. Sander describes it as follows:

> It can be seen that the father glances down momentarily at the baby's face. Strangely enough, in the same frames, the infant looked up at the father's face. Then the infant's left arm, which had been hanging down over the father's left arm, began to move upward. Miraculously, in the same frame, the father's right arm, which had been hanging down at his side,

> began moving upward. Frame by frame the baby's hand and the father's hand moved upward simultaneously. Finally they met over the baby's tummy. The baby's left hand grasped the little finger of the father's right hand. At that moment the infant's eyes closed and she fell asleep, while the father continued talking, apparently totally unaware of the little miracle of specificity in time, place, and movement that had taken place in his arms. (p. 155)

Here, he points out that the negotiation between parent and child of increasingly complex forms of specifically fitted activity is the essential process through which development takes place or, in Sander's terminology, the way that new levels of organization emerge in dyadic systems.[1]

How can we reconcile these two levels of description of how specifically fitted activity between parent and child organizes development? Can the term *recognition process* usefully be applied to the interaction between the father and his 8-day-old daughter, as well as to the interaction between the now self-aware toddler and her parent?

SPECIFICITY, RECOGNITION PROCESS, AND FITTING TOGETHER

In his 1991 article on "Recognition Process: Specificity and Organization in Early Human Development," Sander elaborates his thinking about the pivotal role of recognition in early development, adding that, "only the beginnings of the experience of recognition . . . can be dealt with here. . . . The full complexity of experiences of recognition central to developmental processes of later life, or of the healing process of the psychotherapeutic experience, must be taken up elsewhere" (p. 2). He begins his discussion by reiterating a systems view, "Human beings as living systems combine the organizational coherence of an ecological organization, i.e. the environmental context, with a biological organization and with a psychological organization" (p. 3). The concept of coherence of organization is central to Sander's thinking, and he sees increasing coherence of psychological organization as a central overarching goal of development. For Sander, increased coherence implies an increased inclusiveness of organization, so that more parts are integrated in more complex and adaptive ways into an overall wholeness. In his view, recognition process is central to this movement toward coherence. In his words, "As part of this design, psychological organization searches for its own coherence, its own wholeness, and that search is conveyed by something that can be called a recognition process" (p. 4). Emphasizing multiple interrelated levels of organization leads Sander to the potential tension inherent in needing to organize at the dyadic level (being together), as well as at the level of individual psychological organization (being separate). In Sander's writings, recognition process is the device that bridges these levels.

Sander locates this recognition process at the heart of the continual, self-initiated exchanges that occur between any organism and its context of environmental support. In these constant exchanges, ". . . the organism modifies itself or modifies the context to achieve that enduring coordination with its context that the biologist knows as the adapted state" (p. 5). To account for how the organism achieves this "enduring coordination with its context," or this coherence of systems organization over time, Sander calls on the concepts of the biologist Paul Weiss.

---

[1] In his 1962 article entitled "Issues in Early Mother–Child Interaction" he had outlined this series of new and increasingly inclusive levels of dyadic organization that emerge over the first 3 years and conceptualized them as a series of adaptive issues that must be negotiated between mother and child.

Weiss views the enduring coordinations that constitute the organization of the organism–environment system as resting on what Weiss (1970) has called, from a biological perspective, the "device of specificity." In Weiss's (1970) words, quoted in Sander (1991), "In the living world such (special determining) qualities are used universally as means of communication, recognition, affinity relations, selectivity—the basic principle being matched specificities—a sort of resonance between two systems attuned to each other by corresponding properties."

Sander (1991) then raises this construct to the level of psychological organization by proposing that such specificity of connection also applies to the organization of awareness and self-awareness, "i.e., the specificity of another's being aware of what we experience being aware of within ourselves. This specificity I have called recognition process and think of it as being experienced in 'moments of meeting' that convey a fittedness that connects inner experiencing with its outer context. Such experiencing of fittedness validates or confirms coherence of psychological organization on the level of the individual as a whole" (p. 9). In Sander's (1991) words, "If, indeed, there is a validity to the choice of a 'recognition process' central to the development of that complexity of psychological organization that we call 'person,' it is because it represents the fulfillment of the same basic principles that characterize the process organizing living systems from their simplest level. This suggests it could be worthwhile to examine the psychoanalytic–therapeutic process within this same framework of principles as a way of defining in a more focused way the moments in the therapeutic process that in fact do lead to basic reorganization of the psychological system" (p. 23).

This view of the pivotal role of recognition process in the experience of the developing child has been central to his thinking over a lifetime. For Sander, the task of coming to know oneself through the way one experiences being known, lies at the heart of self-organization. Because of the critical role that the process of becoming known plays in the individual's sense of integration and well-being, the moment of exposing to another one's own delicate source of self-organizing intention or initiative "remains a life or death precipice at the heart of self-organization" (L. Sander, personal communication, 1999). Thus, consideration of the role of recognition process in development has been a lifelong orienting direction in his work.

RECOGNITION PROCESS AS SPECIFICITY OF FITTEDNESS OF RELATIONAL MOVES

Despite the central role assigned to recognition process in his thinking, Sander has maintained a distinction in his published work between the processes of mutual negotiation and adaptation that occur before 18 months of age and processes of recognition based on self-awareness that occur after 18 months of age. Since 1965, however, developmental research has rendered a more multileveled account of the series of developmental transformations that occur in the child's intersubjective awareness both before and after 18 months of age (e.g. Astington & Gopnik, 1991; Carpenter, Nagell, & Tomasello, 1998, Stern, 1985; Trevarthen, 1980). These increasing elaborations in the complexity of the intersubjective field from birth onward call for a corresponding view of recognition process as a process that itself undergoes transformations in the complexity of awareness that accompanies experiences of specificity of coordination. This view is consistent with, and indeed is implicit in, Sander's epigenetic viewpoint from the beginning of his writing. To capture the process inherent in Sander's concept of recognition process as central to the development both of self-organization and of the dyad as a system, it seems almost required that recognition process be viewed in its broadest possible sense as an organizing process from the beginning of life.

In further support of this broader understanding of recognition process as not necessarily confined to the level of reflective self-awareness, both developmental and cognitive neuroscience are now moving toward a multileveled notion of the parallel brain systems that contribute meaning to experience. The older dichotomy between rational and irrational thought, or between secondary and primary process, a dichotomy that assigned privileged status to logical, symbolized, or self-aware systems of knowledge, is being replaced by a more complex multileveled model of what it means "to know." Recent developmental and cognitive research has made clear that there are other forms of knowing that do not require self-reflective awareness and so have not played a large part in our previous theories of what constitutes meaning or knowing. These forms of unsymbolized knowing are also not adequately captured within the standard psychoanalytic conceptual framework as either primary process or as part of the dynamic unconscious (for more extended discussion, see Clyman, 1991; Lyons-Ruth, 1999).

This realm of knowing has been termed *procedural knowledge* in the cognitive science literature (e.g., Schachter & Buckner, 1998). Stern and colleagues (Lyons-Ruth et al., 1998; Stern et al., 1998), as well as others, have pointed out the relevance of this concept to psychodynamic thinking. Lyons-Ruth (1999) has referred to this form of knowing as enactive representation (see also Bruner, Olver, & Greenfield, 1966), and Stern et al. (1998) have called knowing how to do things with others the domain of implicit relational knowing. Knowing in the procedural or enactive sense is clearly available from earliest infancy and is active continuously throughout adult life, operating in constant interplay with symbolic forms of knowing and meaning (see Lyons-Ruth, 1999).

In recent work with the Change Process Study Group, Sander has applied the concept of recognition process to this domain of procedural knowing, and in doing so implicitly broadens the applicability of the concept beyond the domain of self-reflective awareness (Lyons-Ruth et al., 1998; Stern et al., 1998). Sander's biologically based conceptual frame is especially well-suited to this broader usage. If knowing and being known is fundamentally about achieving the possibility of specifically fitted activity with another or, put another way, of finely coordinated or attuned interactions with another, the emphasis shifts from the end result of dyadic fittedness to the process that gives rise to the fittedness itself. The ability to represent the experience of being recognized at the level of conscious recall and reflection becomes just another level of complexity in a broader underlying process of dyadic interactions of recognition beginning at birth.

Extending the term *recognition process* to the achievement of finely coordinated joint action or interaction with another illuminates aspects of therapeutic and developmental process that have defied conceptualization. As noted earlier, Sander has repeatedly returned to the problem of accounting for the directionality in human growth and development. He sees both biological and psychological organization as directed toward increased inclusiveness and coherence of adapted organization, which is experienced psychologically as a sense of wholeness or, in the vernacular, as "having it all together." As noted earlier, recognition process is central to this search for coherence. If there is a fundamental directionality to human behavior to increase the inclusiveness of fit between the self and the environment, there must also be feedback mechanisms for sensing and moving towards increased fittedness.

Sander sees this feedback mechanism expressing itself in consciousness as a sense of vitalization accompanying experiences of specifically fitted interaction (personal communication, 1999). His choice of the term *vitalization* makes clear that he views this enhanced sense of agency as an aspect of primary experiencing rather than as an aspect of self-reflective knowing. As an aspect of primary experiencing, this sense of vitalization could accompany experiences of fittedness occurring at the enactive level as well as experiences of recognition that are represented at various levels of self-reflective symbolization.

RECOGNITION PROCESS AND IMPLICIT RELATIONAL KNOWING IN THE PSYCHOTHERAPEUTIC ENCOUNTER

How can Sander's concept of recognition process illuminate the process of change in psychotherapeutic encounters? In a previous article of the Change Process Study Group, Stern et al. (1998) advanced a model of how change occurs in the psychoanalytic setting through processes parallel to, but different from, interpretation. In that article they described another set of processes that contribute to therapeutic change but operate at an enactive rather than an interpretive level, that is, at the level of relational acts between patient and therapist. Such relational acts are often highly nuanced "speech acts" (Searle, 1969) rather than the kinds of actions commonly referred to as "acting out." In such verbally conveyed acts, nuances of timing, word choice, prosody, and shifts in content from the previous utterance, as well as aspects of the content itself, constitute choices of action on the part of both participants. That continued flow of action choices, in turn, conveys in multiple subtle ways how each person's central intentions and affect states are implicitly understood by the other. These action choices are informative to the partner regarding what modes and levels of being together, or doing together, might be available in the next moment or moments of this particular relationship. This nuanced, multileveled flow of spoken action conveys or embodies the implicit relational knowing of the two parties.

In addition to the construct of implicit relational knowing, Stern et al. (1998) identified another needed construct for accounting for psychotherapeutic change as a "moment of meeting," a moment that included Sander's recognition process. As described in Lyons-Ruth et al. (1998)

> the implicit relational knowings of patient and therapist intersect to create an intersubjective field that includes reasonably accurate sensings of each person's ways of being with others . . . . This intersubjective field becomes more complex and articulated with repeated patient–therapist encounters, giving rise to emergent new possibilities for more coherent and adaptive forms of interaction. During a transactional event that we term a moment of meeting, a new dyadic possibility crystallizes when the two partners achieve the dual goals of complementary fitted actions and joint intersubjective recognition in a new form. We argue that such moments of meeting shift the relational anticipations of each partner and allow new forms of agency and shared experience to be expressed and elaborated. (p. 1)

As noted earlier, there is a tension in Sander's writing regarding what level of awareness is necessary at such moments of complementary fitted actions and joint intersubjective recognition. Stern et al. (1998) imply that some level of self-reflective awareness would be required for patient and therapist to mutually recognize and ratify between them that an important and new way of being together had been negotiated. Such moments of highly reflective mutual awareness *do* ratify some important moments of change in adult psychoanalytic treatments. However, these moments are relatively rare, may not occur at all, and when they do occur tend to mark unusually major reorganizations in the patient–therapist relationship. Therefore, they may not characterize much of the day-to-day business of conducting psychoanalytically oriented treatment.

How then do we understand *recognition process in* terms congenial with both infant research and more ordinary moments of change in psychoanalytic treatment? Although any given relational move may be the outcome of very abstract thought processes, most relational transactions rely heavily on a substrate of affective cues that give an evaluative valence or direction to each relational communication, and these communications are carried out at an implicit level of rapid cueing and response that occurs too rapidly for simultaneous verbal translation and

conscious reflection. (e.g., Beebe & Lachmann, 1994). Therefore, the fittedness of a relational move to the joint goals of the dyad is probably more typically sensed or apprehended directly, rather than known reflectively in the moment.

Sander's linking of the sense of fitted activity between partners to the creation of increased coherence in the system is an important additional contribution in that he suggests that human partners have an intrinsic ability to apprehend when more coherent fittedness of activity in the service of joint goals is achieved. Furthermore, in his view, this fitting together carries with it the experience of positive affective enhancement or vitalization.

In this more general application of Sander's concepts, recognition process occurs at the level of relational moves that are unreflected upon and hence often unavailable to introspection. Recognition is then experienced as a direct apprehension of the increased fitting together of the two partners' behaviors in the service of jointly held goals. Such fitting together, if it can be reliably repeated, constitutes increased coherence or organization of the dyadic system as a whole.

In Sander's thinking, as in the biological theorizing of Weiss (1947), the concept of recognition process provides the directional element to clinical or development encounters; it is how we feel our way along in unscripted relational transactions.

The process of regular encounters between the organization of the infant's and parent's relational moves, or of the patient's and therapist's relational moves, creates a field of tension between the two diverging organizations. The resolution of this tension requires a creative and improvisational process by which both parties make exploratory attempts to find accessible points of fitting together in the service of collaborative activity. In this improvisational field, all exchanges will alter the experience of the other and elaborate each person's implicit awareness of the other's available relational moves. This universe of possible moves is not finite, as in a rule-bound game like chess, however, but is varied by the creative and self-organizing properties of complex living systems in interaction with one another.

Although the two partners might have some overarching goals for being together, the pathways for getting there and the series of more local goals that occur along the way are constructed dyadically out of the encounters of the moment. The sense of increased fittedness of actions between the two partners will guide their choices of moves to be repeated and those to be varied or discarded. Such recognition by the patient of the fittedness of the therapist's move is most often conveyed back to the therapist by a responding move on the part of the patient, a move that builds on the therapist's move in a way that deepens the dialogue in the service of the therapeutic goals. The increased coherence or coordination of the dyad in the service of systems goals is apprehended or recognized through the recognition of the increased fittedness of the partner's response to the self's capacity for coordinated action. By apprehending how the partner's next move builds (recognizes) or fails to build on one's own prior initiative, each senses the current state of fit with the other. Both partners sense the fittedness of their actions to the relational potential of the other, and hence to the achievement of more complex joint dyadic activity in the service of joint goals.

RECOGNITION PROCESS IN THE CLINICAL MOMENT

A brief example to illustrate these processes in the clinical encounter can be taken from a recent meeting with a self-destructively acting out adolescent patient. For several months we had been struggling to build an alliance through a tumultuous early phase of anger and testing on her part. In one of her more alienated sessions when she was listing her disappointments in all her treatment providers and rejecting all of my attempts to join the dialogue, she finally looked at

me with a hard querying look and fell silent. I asked what she was thinking that made her lapse into silence. She said, "You never know what these people are thinking. I mean they're human. They're probably thinking about the errands they need to do, you know, go to the cleaners and things." I heard this partly as her reference to feeling unseen within her family as well as in her treatment with me. We had talked several times before about her pervasive sense that who she was was not recognized by the people who were important to her. At this point, to reiterate this sense of feeling unseen again in relation to me felt sterile and abstract. Instead she seemed to be challenging me to say who I was and what I was thinking at that moment as a way of probing more directly whether I was able to deal with the intensity of her feelings and to invest in the work with her in a way that she felt recognized.

I also felt attacked and exhausted by the continuing intensity of her struggle with me as one of the unseeing others, an experience that I thought might reflect her own sense of being internally attacked and depleted. After I thought about these implications for a second, I said, "Would you like to know what I've been thinking about as I was listening to you?" She nodded and I continued, "I was thinking what a difficult adversary you are to yourself. You're very thoughtful and disciplined and insightful (all obvious traits in this excellent student) and right now all those strengths are being used against you rather than in the service of furthering your life." At this point, she began to talk at a very meaningful level about her inner experience of feeling like an abused wife who couldn't separate from an abusive husband, the "husband" who was embodied in her self-destructive behavior, because she feared that he was the only one who could love her.

Although this was a verbal exchange and my response contained what might be called an interpretive side, my understanding of what had transpired between us had more in common with a theory of complementary fitted action and recognition process than a theory of interpretation. She had brought a central "way of being with" into the treatment room that involved angry opposition to the unseeing others, but opposition directed away from the important others in her life and towards herself. I was improvising as best I could to recognize implicitly a number of levels of her communication to me in a way that opened new avenues for collaboration, without overpowering her defenses or undermining her self-esteem. Many, or even most, such therapeutic improvisations early in the treatment process are misses, in that little perceptible intersubjective joining, or fitting together, in Sander's terms, occurs. In this moment, however, a deepening of her willingness to share her inner world with me occurred that was perceptible to us both (although this exchange was not explicitly referred to until many sessions later).

In my experience of the moment, the recognition process that occurred between us was at a procedural or enactive level. One possible narrative at the level of relational moves might read as follows: She was aggressive and indirectly attacking. She lapsed into silence to inhibit a direct attack. I queried her silence to invite a more direct angry engagement. She took the chance to move out of her silence and confront me indirectly around whether therapists were really listening. I took up the challenge to respond to the implicit confrontation more directly. My direct response to her indirect confrontation encouraged her to confront her tormenters (including myself) more directly. This occurred implicitly in that it was inherent in the structure of the dialogue, whether or not her tendency to inhibit her aggression was part of the explicit content of the conversation. She then built on the implicit invitation to be more direct by reflecting more directly but also more collaboratively with me on the internal forces that held her back. Thus each of us improvised step by step into a new possibility, each was observed by the other, and each of us sensed the expansion of the repertoire that became possible. In Sander's conceptual framework, we constructed a series of specifically fitted responses that opened new possibilities for collaborative therapeutic activity, accompanied by a sense of

vitalization of the relationship that was palpable to us both. Although this happened through a verbal exchange, the essential structure of the exchange itself was never verbalized or even reflectively recognized in the sense that it could be easily rendered in words. However, the procedural fit was apprehended by both parties through the apprehension of each one of us of the fittedness of the other's next relational move.

The flux of energy-infused interactions that culminate in new areas of dyadic organization cannot be specified in advance and depend exquisitely on the timing of their occurrence in relation to all the prior movements of the relationship. The same therapist or patient response earlier or later in the treatment relationship might have no effect or have a deleterious effect because its relation to the overall state of the relationship would be different. Recognition process requires a fittedness to the overall gestalt of the relationship at many levels. Nevertheless, in both the fine structure of session-to-session work, as well as in the more encompassing organizational shifts that are observed in treatment after a period of months or years, those moments of recognizing and building on the fittedness of one another's responses constitute the fulcrum of change to new and more complex levels of coordinated activity. Although we might have some general representation of where we want to go therapeutically or developmentally, the pathways for arriving there are always indeterminate and created out of encounters of the moment. In the example above, my young patient and I had gone through a series of microencounters with one another for several months in which signals of anger and question and confrontation were exchanged between us until a new and fuller fitting together began to emerge.

These microencounters with many nonverbal components are also the units out of which our ways of being with others are constructed developmentally. These relational processes are apprehended directly, however, and are only translated into the foreign medium of reflective verbal description with great effort. Even the most penetrating verbal description of how two people negotiate an affectively charged issue together rarely captures all the subtle elements of how they really go about doing it because the essential medium of the exchange is not primarily verbal. As we hit on relational moves that work, we repeat them, elaborate on them, try variations on them, and slowly expand the shared repertoire of what we can experience and accomplish together. Although language is increasingly incorporated into these encounters with development, the structure of the encounter itself may never be represented in words. It is simply enacted and grasped implicitly in its enacted form. Under positive developmental conditions, parent and child will elaborate an intersubjective repertoire of "what can be done together" that will function smoothly across many developmental and life challenges to maintain responsive communication and to regulate physiological arousal within an adaptive range (see Lyons-Ruth, 1999; Lyons-Ruth & Jacobvitz, 1999).

These moments of specifically coordinated action represent the goal states of dyadic collaboration. As achieved goal states of a dyadic system, they function as psychic organizers, as feedback to both parties that they are on the path toward achieving joint action. In psychoanalytic treatment, the overarching goal is to enhance the individual adaptation of the patient. Joint action in this context, then, means the collaboration of therapist and patient toward increasing the flexibility, range, and effectiveness of the patient's adaptive capacities, along with the reduction of the experience of maladaptive behavior and dysphoric states.

Tronick et al. (1998) has pointed to the enhanced inclusiveness, range, and adaptive potential that is inherent in the collaboration of two minds, or in his terms, in "the dyadic expansion of consciousness." A second mind is brought to the task of solving the adaptive challenges faced by the first. Two heads are better than one, especially if the second has experience or training not shared by the first and vice versa.

I would expand further on Tronick's expansion-of-consciousness thesis to note that consciousness is not only expanded. When two minds attend to one another, something new and unique is created, namely, an intersubjective field. Only in an intersubjective field is one able to make initiatives to explore, to play with, to influence, and, ultimately, to carry out complex activities in collaboration with another mind. One requires a fluid medium for learning how to swim and one requires a joint psychological field for learning how to do things with other minds. The joint intersubjective state is desirable not simply because it is an end in itself, but because it allows the construction of ever more complex intersubjective activities or interactions between the two partners, in therapy or in development more generally. The need for an intersubjective field in which to develop the abilities that support coordinated dyadic activity provides a powerful impetus for the achievement of intersubjective dyadic states.

RECOGNITION PROCESS AND NON-LINEAR DYNAMIC MODELS OF PSYCHOTHERAPEUTIC CHANGE

Sander cites Paul Weiss (1949, 1969) regarding the two great mysteries in biology, namely:

1. How do organisms maintain stability of organization of the whole?
2. What biological principle governs the formation of bonds that result in structure formation and maintenance?

Weiss proposes that specific determining qualities are used as a means of recognition of one part of the system by another to achieve matching specificities or resonance between two systems or parts of systems; for example, specific properties of sound waves are matched by specific qualities of the ear; specific properties of nerve endings are matched or recognized by specific properties of tissue to be innervated; specific properties of light are matched or recognized by specific detectors in visual systems.

Drawing from Weiss's writings, Sander emphasizes that infant and caregiver form a new regulatory system that is distinct from either individual considered separately. Integrating Sander's writings with recent work on dynamic systems theory by Thelen (1989), Thelen and Smith (1994), and others, one can also propose that, as energy is invested in a new complex dyadic therapeutic system, the system will give rise to spontaneous emergent properties. Emergent properties, in dynamic systems terms, are forms of organization that are not specified a priori but that emerge in the interaction between organism and environment, or, in the dyadic case, between two individuals. In the developmental model of Thelen and Smith, for instance, there is no "walking centre" or "walking icon" in the brain or in the genes. Instead, walking is discovered or constructed de novo by each infant in interaction with his or her environment. When a fit is discovered between the properties of the infant's body, such as his weight, leg strength, and coordination, and properties of the environment, such as gravity and surface characteristics, the fit is exploited in the service of producing upright locomotion and elaborating more complex ways of moving in the world. Sander also illustrates how the individual and the environment form a single complex dynamic system with emergent properties by such examples as the entrainment of the sandflea's biological rhythms to the rhythms of the tides that inundate it, or the entrainment of the infant's endogenous sleep cycles to the 24-hour day–night cycle.

Current dynamic systems models also emphasize selectionist principles. For example, in developmental neuroscience, Edelman (1987) has described the process of "neural Darwinism" or neuronal group selection. In his dynamic systems model, some preexisting neuronal

groupings are strengthened and elaborated by exposure to environments within the range of adaptive fittedness, whereas others are not matched or recognized by available environmental inputs and are pruned away.

An important aspect of Edelman's theory is his resolution of the paradox between the unique, idiosyncratic, and redundant nature of the neural connections developed in all areas of the brain by a particular individual, and the highly reliable, species-typical adaptive behavioral capacities that result from such idiosyncratic neuronal groupings. Edelman uses the example of the frog's visual system, in which the underlying idiosyncratic neural connections characterizing each individual result in the highly reliable visual capabilities typical of the species. Edelman introduces the concept of biological value to account for the uniformity of function that emerges from idiosyncracy of structure. Once the goal (or value) of the neural system is set, for example, to distinguish dark from light, the system will recognize certain inputs as providing more specificity of fit to the requirements of the neural system. However, there are numerous overlapping sets of synaptic connections that can be selected or strengthened to achieve the same outcome.

At the level of behavior, similar principles apply. As in the examples of walking described by Thelen and Smith (1994), many redundant locomotor behaviors and behavioral adjustments are explored by the infant. Those that match the requirements of the environment are repeated, strengthened, and refined further.

Two-person systems are also nonlinear, idiosyncratic, and unpredictable in that interaction is inherently improvisational and creative. In the past, the concept of *repetition compulsion* has captured the conservative aspects of our emotionally central ways of being with others and highlighted the recognizable outlines that recur in these patterns. However, closer inspection reveals that the microstructure is never an exact repetition of the past. Instead, every new rendition is a variation on the theme, colored in turn by all past repetitions or variations. Something is always changed in each variation, as recognized in such concepts as "repetition in the service of mastery." In the concept of repetition in the service of mastery, the possibility of finding a new repetition or variation that leads towards a new solution is made explicit. Thus, something is always changed. One can never fully unregister one's experience, nor can one ever go back exactly to a prior organization of experience.

Dyadic psychological systems also have certain qualities not shared with biological systems. At the level of dyadic psychological systems, the recognition process that creates new emergent relational organization requires the intersubjective coordination of complex psychological states rather than simply the coordination of verbal or physical acts per se. As in the above clinical example, these recognition processes may require extensive mutual negotiation, failure of recognition, and efforts at repair (see Lyons-Ruth, 1999; Tronick, 1989). This psychological recognition process links inner experiencing, and later reflective awareness of experience, with the experience of other minds, allowing complex coordination of activity at the dyadic systems level.

How two such directional but unique and not fully predictable psychological systems fit together to form enduring and coordinated developmental relationships has been Sander's central concern and his biologically grounded constructs offer the scaffolding of a new developmental base for psychoanalytic theory.

REFERENCES

Astington, J.W., & Gopnik, A. (1991). Theoretical explanations of children's understanding of the mind. Journal of Developmental Psychology 9, 7–31.

Beebe, B., & Lachmann, F.M. (1994). Representation and internalization in infancy: Three principles of salience. Psychoanalytic Psychology, 11, 127–165.

Bruner, J.S., Olver, R.R., & Greenfield, P.M. (1966). Studies in Cognitive Growth. New York: Wiley.

Carpenter, M., Nagell, K., & Tomasello, M. (1998). Social cognition, joint attention, and communicative competence from 9 to 15 months of age. Monographs of the Society for Research in Child Development, 65, 971–991.

Clyman, R. (1991). The procedural organization of emotions: A contribution from cognitive science to the psychoanalytic theory of therapeutic action. Journal of the American Psychoanalytic Association, 39, 349–382.

Edelman, G.M. (1987). Neural Darwinism. New York: Basic Books.

Erikson, E. (1950). Childhood and society. New York: Norton.

Hartmann, H. (1939/1958). Ego psychology and the problem of adaptation. New York: International Universities Press.

Kagan, J. (1981) The second year: The emergence of self-awareness. Cambridge, MA: Harvard University Press.

Lewis, M., & Brooks-Gunn, J. (1979) Social cognition and the acquisition of self. New York: Plenum.

Lyons-Ruth, K. (1999). The two-person unconscious: Intersubjective dialogue, enactive relational representation, and the emergence of new forms of relational organization. Psychoanalytic Inquiry: Special Issue on Psychoanalytic Theory and Attachment Research: Theoretical Considerations, 19, 576–617.

Lyons-Ruth, K., & Jacobvitz, D. (1999). Attachment disorganization: Unresolved loss, relational violence, and lapses in behavioral and attentional strategies. In J. Cassidy & P. Shaver (Eds.), Handbook of attachment theory and research (pp. 520–554). New York: Guilford Press.

Lyons-Ruth, K., Stern, D., Sander, L., Nahum, J., Harrison, A., Morgan, A., Bruschweiler-Stern, N., & Tronick, E.Z. (1998). Implicit relational knowing: Its role in development and psychoanalytic treatment. Infant Mental Health Journal, 19, 282–289.

Nahum, J. (1994). New theoretical vistas in psychoanalysis: Louis Sander's theory of early development. Psychoanalytic Psychology, 11, 1–19.

Piaget, J. (1971). Biology and knowledge. Chicago: University of Chicago Press.

Piaget, J. (1952). The origins of intelligence in children. New York: International Universities Press.

Sander, L. (1965). Interactions of recognition and the developmental processes of the second eighteen months of life. Paper presented at Tufts University Medical School, Boston, MA.

Sander, L.W. (1962) Issues in early mother child interaction. Journal of the American Academy of Child Psychiatry 1, 141–166.

Sander, L.W. (1984). The Boston University Longitudinal Study–Prospect and retrospect after twenty five years. In J. Call, E. Galenson, & R. Tyson (Eds.), Frontiers of infant psychiatry (Vol. 2, pp. 137–145). New York: Basic Books.

Sander, L. (1991). Recognition process: Specificity and organization in early human development. Paper presented at University of Massachusetts conference, The Psychic Life of the Infant.

Sander, L. (1994). Paradox & resolution: From the beginning. In J. Noshpitz, S. Greenspan, S. Wieder, & J. Osofsky, J. (Eds). Handbook of child & adolescent psychiatry. Vol. 1, Infants and preschoolers: Development and syndromes (pp. 153–160). New York: John Wiley & Sons.

Schacter, D.L., & Buckner, R.L. (1998). Priming and the brain. Neuron, 20, 185–195.

Searle, J.R. (1969). Speech acts: An essay in the philosophy of language. New York: Cambridge University Press.

Spitz, R.A. (1957). No and yes—On the genesis of human communication. New York: International Universities Press.

Stern, D.N. (1985). The interpersonal world of the infant. New York: Basic Books.

Stern, D., Sander, L., Nahum, J., Harrison, A., Lyons-Ruth, K., Morgan, A., Bruschweiler-Stern, N., & Tronick, E.Z. (1998). Non-interpretive mechanisms in psychoanalytic therapy. International Journal of Psychoanalysis, 79, 903–921.

Thelen, E. (1989). Self-organization in developmental processes: Can systems approaches work? In M. Gunnar & E. Thelen (Eds.), Minnesota Symposia in Child Psychology (Vol. 22, pp. 77–117). Hillsdale, NJ: Lawrence Erlbaum.

Thelen, E., & Smith, L.B. (1994). A dynamic systems approach to the development of cognition and action. Cambridge, MA: MIT Press/Bradford Books.

Trevarthen, C. (1980). The foundations of intersubjectivity: Development of interpersonal and cooperative understanding in infants. In D. Olson (Ed.) The social foundations of language and thought (pp. 382–403). New York: Norton.

Tronick, E. (1989). Emotions and emotional communication in infants. American Psychologist, 44, 112–119.

Tronick, E. (1998). Dyadically expanded states of consciousness and the process of therapeutic change. Infant Mental Health Journal, 19, 290–299.

Von Bertalanffy, L. (1952). Problems of life. New York: Harper.

Weiss, P. (1947). The problem of specificity in growth and development. Yale Journal of Biology and Medicine, 19, 234–278.

Weiss, P. (1949). The biological basis of adaptation. In J. Romano (Ed.), Adaptation. Ithaca, NY: Cornell University Press.

Weiss, P. (1969). The living system—Determinism stratified. In A. Koestler & J.R. Smythies (Eds.), The Alpbach Symposium 1968—Beyond Reductionism—New perspectives in the life sciences. Boston: Beacon Press.

Weiss, P. (1970). Whither life science? American Scientist, 58, 156–163.

Winnicott, D. (1971). Mirror role of mother and family in child development. In D. Winnicott (Ed.), Playing and reality (pp. 111–118). London: Tavistock.