

The Signal



Vol. 6, Nos. 3-4

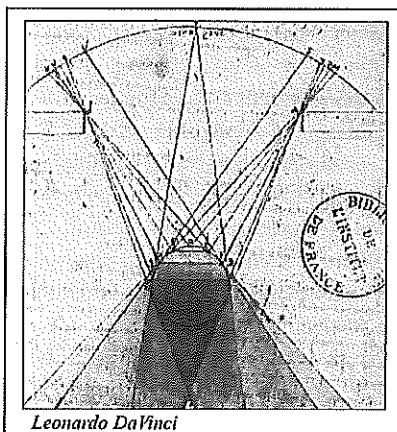
Newsletter of the World Association for Infant Mental Health

July—December 1998

The Developing Mind: Toward a Neurobiology of Interpersonal Experience

by Daniel J. Siegel, M.D.

As we near the end of the 1990's, the "Decade of the Brain," the field of mental health is in a tremendously exciting period. Recent findings in cognitive neuroscience have revealed some new insights into how mental processes emerge from the activity of the brain. Advances in the science of development, especially longitudinal studies in the field of attachment, shed new light on how early experiences influence such fundamental processes as memory, emotion and the regulation of behavior. The often isolated fields of neurobiology and attachment have a fascinating set of convergent findings relevant to clinical work with infants and their families. Examination of these and other areas of research can offer us new ways of understanding how the



Leonardo Da Vinci

developing mind is shaped by the interaction of interpersonal experience and neurobiological processes in the creation of the human mind.

Clinical programs and therapeutic practice can be greatly enriched by a foundation in an interdisciplinary approach to the developing mind. Though the various fields interested in mind, brain and experience have much to offer, there has been little translation and synthesis available to make these findings readily accessible to a clinical audience. For example, very little in cognitive neuroscience, the study of how mental processes emerge from the mind, concerns itself with how social experiences shape development. Likewise, most research in attachment does not draw directly upon

findings from neurobiology. By integrating insights from a variety of domains, including anthropology, developmental psychology, cognitive neuroscience, behavioral genetics, linguistics and other disciplines studying the nature of the mind, we in the field of mental health can greatly enhance our ability to understand how children develop within a matrix of interpersonal experience. Such a perspective can enable us to integrate the most modern findings from neurobiology with a broad understanding of development, experience and human relationships.

The mind develops throughout life as we interact with others in our environment during infancy and beyond. The genetically influenced timing of the emergence of specific brain circuits during the early years of life makes this period a time of exquisite importance for the influence of interpersonal relationships—with parents and other caregivers—on how the structure and function of the brain will develop and give rise to the organization of the mind. But how do the processes of the mind emerge from the neuronal activity of the brain? How can human relationships influence the activity

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and development of the brain? What are the mechanisms by which interpersonal experience can actually shape neuronal activity and growth? These questions have led me to become immersed in a pursuit of a "neurobiology of interpersonal experience": a way of understanding the neurobiological processes by which the mind emerges from the activity of the brain in interaction with other brains – with other minds.

Grounding ourselves in a neuroscience of relationships can allow us in the field of infant mental health to approach our work with all of the scientific foundation that this Decade of the Brain has to offer. In the following pages, I will highlight a few of the major ideas of this perspective. More detailed discussions and references can be found in the *Developing Mind* text.

Mind, Brain and Experience

What is the mind? Though it cannot be seen with or without a microscope, the mind does have an organization to its processes that can be described and studied. Mental processes such as memory, emotion, attention, behavioral regulation and social cognition can be understood by examining the nature of brain activity. Recent technological advances have permitted truly new insights into the nature of the mind. For example, our modern view of the brain and its response to experience has shed some new light on how experience directly affects gene function, neuronal connections and the organization of the mind. While we are at only the barest beginnings of understanding how mind emerges from the brain, it is nevertheless crucial that we embrace the rapidly evolving ideas and findings from neuroscience in order to deepen our

study of how the mind develops within a complex set of social experiences. One general message from a synthesis of neurobiology and attachment is that it is within the vital human connections of interpersonal relationships that many of the neural connections which create the mind are shaped: *Human relationships shape the brain structure from which the mind emerges.*

What is the brain? The brain is composed of a massively complex network of interconnected neurons which number about one hundred billion. The projections of these long cells reach out to other neurons at a junction called a synapse. At this meeting point, a neurotransmitter is released which diffuses across the synapse and activates or inhibits the adjacent neuron. If enough activating input is received, then an action potential equivalent to a small electrical current passes down the length of this next neuron to cause the release of neurotransmitter at the "down-stream" synaptic ends. The important point here is that the activity of neurons occurs in a network of activation – a certain portion of a spider-web like neural network active across time. It is the specific pattern of this spatiotemporal brain activity that determines the nature of the mental processes created at a given time: the timing and the location of neural activation within the brain determine the "information" contained within the neural net patterns. Activity in sensory regions may mediate perception and the specific nature of this firing may signify the different aspects of perceptual information: a visual stimulus, auditory input or tactile sensation, for example. Information carried within perceptual regions often becomes integrated into a larger "cross-modal" perceptual system. Such an integrat-

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ing process is an example of how the brain functions as a hierarchical set of layers of relatively distinct component elements whose neuronal activity may become clustered together into a functional whole. The complexity of the brain as an interconnected system is revealed by the fact that an average neuron directly connects with (has synaptic connections to) about ten thousand other neurons! This means that there are trillions of connections and an imponderably large number of combinations of potential neural net activation patterns. It is for this reason that neuroscientists (with the bias of their own human brains, of course) suggest that the brain is the most complex entity in the universe!

The brain as a system is composed of hierarchical layers of component parts that can be examined at a number of levels of analysis: single neurons, neuronal groups, circuits, systems, regions, and hemispheres. At birth the brain is the most undifferentiated of any "organ" in the body. As development unfolds, neural pathways are created as synapses are formed which allow for the creation of these component parts to become differentiated and to carry out such features as attention, perception, memory and emotional regulation. A huge number of genes encode for the timing and general details of how circuits are to develop early in life. However, the creation, maintenance and elaboration of neural connections may often also require that they be activated in a process called "experience-dependent" development. Experience activates specific neuronal connections and allows for the creation of new synapses and the strengthening of existing ones. In some cases, the lack of use leads to impaired synaptic growth and to a dying away process—called prun-

ing—in which connections are lost and neurons themselves may die. The differentiation of the brain during the early years of life is thus dependent upon genetic information and the proper experiential stimulation. It is for this reason that the

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early years of life, the time when the basic circuits of the brain are becoming established that mediate such processes as emotional and behavioral regulation, interpersonal relatedness, language and memory, are the most crucial for the individual to receive the kinds of experience that enable proper development to occur.

But *how* does experience influence neurons and the genes which encode, in part, their growth and development? Numerous studies demonstrate that genes have two major functions: 1) genes store information in their "template" function; and 2) genes are expressed in their "transcription" function in which they lead to the production of specific proteins which alter cell structure and function. In this manner, the activation of neurons during experience leads to new synapses by the activation of genes that cause the production of the proteins necessary for neuronal growth and synapse formation. Genes do not exist in a vacuum but require experience for their

expression. Genes are activated by experience. This view allows us to see how the heated arguments about "nature versus nurture" or "heredity versus experience" do little to further our understanding of the biological reality that experience directly shapes brain structure via the activation of genes.

In the early years of life, the most important form of experience is within interpersonal relationships with parents and other caregivers. Certain interpersonal experiences appear to be common in the majority of attachment relationships in all cultures which have been studied. This common feature has been called "contingent" or "collaborative" communication between caregiver and infant. How does this form of reciprocal, emotionally attuned, interpersonal communication shape the development of the brain? Writers such as Myron Hofer (1994), Allan Schore (1994), Allan Sroufe (1996), Daniel Stern (1985), Colwyn Trevarthen (1994, Aiken and Trevarthen, 1997), and Edward Tronick (1989), have offered a variety of ways of understanding the link between early experience, emotional development and self-regulation. One way of pursuing possible answers to this basic question about how interpersonal communication shapes neuronal connections is by first defining in a more general manner what the mind is, and then looking toward attachment as a way in which the more mature mind of the caregiver directly interacts with the less mature mind of the infant to facilitate its development.

The Mind: Patterns in the flow of energy and information

A variety of disciplines explore the nature of the mind in its ability to

process information and to regulate the function of the individual in adapting to the environment. These various conceptualizations of mind often share the notion that the mind is more than a physical entity – such as brain activity alone – and yet emerges from and also regulates the “self” and the physiological processes from which it emerges. The mind is thus often seen as a “process” fundamental to each person. A dictionary definition of the psyche includes the terms soul, intellect, spirit and mind. In attempting to put these various perspectives into a broader framework, it has been useful to have a working definition that views the mind as emerging from the patterns in the flow of energy and information within the individual and between individuals. In this way, the mind is created by both neurobiological processes within the individual and interpersonal interactions between individuals.

The activity of the brain serves to process information within its energized neural patterns. Information is processed in the brain by means of neural activity which serves to “represent” aspects of the internal or external world. The “mental symbol” or “code” is conceptualized as being embedded within patterns of neural net firing. For example, when we recall a visual image, such as the room we grew up in, the firing of a pattern of neural circuits within our visual system is similar but not identical to the pattern that fired when we were actually there years ago. Memory, as with other mental processes including ongoing perception, is an actively constructive process that draws on a range of neural systems and is shaped by a wide variety of factors influenced by external and internal factors. Within the brain, the pattern of activation

(energy) of distributed neurons acts as a symbol (information) of some experienced event that is constructed by the mind itself.

The brain is capable of creating mental symbols or representations that signify some aspect of the outer or inner world. As we perceive and encode into memory various forms of representations, we can then later reactivate these mental symbols, these neural net profiles, and be able to recall various aspects of past experience. Information is thus represented in the mind by way of the flow of neural activity across various spatially distributed circuits. The way in which these representations cause further effects in the mind – such as contrasting, clustering into categories, extracting general properties – is the essence of information processing. The resultant neural activity becomes a mental symbol itself and creates a cascade of representational processes that are at the heart of the flow of cognition. Most of these processes occur without the involvement of consciousness, a subject we will not even begin to attempt to address in this article!

Colwyn Travarthen (1994) and Don Tucker and colleagues (Tucker et al 1995) have described the ways in which the right and left hemisphere are dominant for the mediation of distinct modes of representational processing. From before birth, the brain reveals an asymmetry in its structure and development. For the infant, the right hemisphere is dominant in its growth during the first three years of life. Recent discoveries over the last several decades have resulted in a number of fascinating notions about the divided brain and mental processes. For the purposes of this article, I will highlight those findings that are particularly relevant to early development and attachment.

The left hemisphere is dominant for the semantic aspects of language, syllogistic reasoning (drawing cause-effect relationships), and linear analysis. The right hemisphere is dominant for nonverbal aspects of language (tone of voice, gestures), facial expression of affect, the perception of emotion, the regulation of the autonomic nervous system, the registration of the state of the body and for social cognition including the process called “theory of mind.”

These findings suggest a possible view of secure attachments in which the right hemisphere—dominant in the first three years of the infant’s life—is crucial for the collaborative communication between parent and child. Secure attachments involve contingent communication that can be thought to involve the parent’s sensitivity to the child’s signals and the capacity of the parent to perceive the mind of the child. Examination of the adult attachment interview findings from Mary Main and others (Main, 1995) also reveals that parents of securely attached children tend to have a coherent autobiographical process. This research interview actually has the most robust predictive power for the security of attachment of child to parent and may reveal some way in which the parent’s mind has come to integrate a number of mental processes that emerge within memory and narrative. This finding raises the important question of how an intra-individual process like the parent’s autobiographical narrativization would relate to the parent’s ability to have contingent communication with a child and the capacity to create a secure attachment.

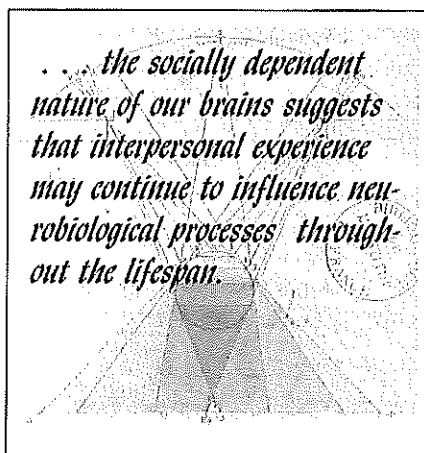
Interpersonal experience can be seen as involving the flow of energy and information from one mind to another. At the neurobiological level,

this involves the sending of signals from one brain to another via interpersonal communication that involves a variety of levels of messages and receiving sensory capacities. In attachment relationships, the infant's emerging capacities to receive and send energy/information shape the nature of the communication. In secure attachments, for example, the parent is able to perceive the signals of the infant with a fair degree of reliability and respond in a manner that is contingent to the state of the child.

Looking to the notion of minds in attachment has been described by Mary Main (1991) and by Peter Fonagy and Mary Target (1997) and their respective colleagues. From these perspectives, having a metacognitive capacity or reflective function that enables the parent to think about mental states of the self or of the child—such as emotions, thoughts, memories, perceptions, intentions, beliefs and attitudes—may be at the heart of secure attachments. From the concept of mind proposed here, secure attachments can be seen as the way in which the mind of the parent is able to directly and collaboratively communicate with the mind of the child. As we will see, mental processes such as memory, emotion, representations, states of mind, self-regulation and the integration of a range of mental processes each may be fundamentally influenced by interpersonal experience. These influences are greatest during infancy because of the development of basic brain structures at that time. However, the socially dependent nature of our brains suggests that interpersonal experience may continue to influence neurobiological processes throughout the lifespan.

Memory

Recent discoveries in the development and neurobiology of memory have yielded some exciting and relevant insights into the nature of how our minds respond to experience and influence later functioning (Milner, Kandel and Squire, 1998). Two major forms of memory have



been described: implicit and explicit. Implicit memory includes a range of processes such as emotional, behavioral, perceptual and possibly somatosensory memory. These forms are present at birth and involve circuitry that does not require focal attention for encoding nor does it include a sense of "I am recalling something" when retrieval occurs. For example, an infant bitten by a dog may have the emotional memory of fear when seeing a dog in the future, but may have no sense that she is "recalling" anything when having this sensation. In this manner, implicit memory is NOT the same as nonconscious memory in that the effects of the recall are indeed within conscious awareness but only experienced in the "here and now" and not with the subjective sense of that something is being recalled. These implicit forms of memory are thought to be carried out in areas of the brain that subsume

their functions such as the amygdala and other areas of the limbic system (emotional memory), basal ganglia and motor cortex (behavioral memory), and the sensory cortex (perceptual memory). These regions are relatively well developed at birth and capable of responding to experience by alterations in the synaptic connections within their circuitry, the essence of "memory encoding."

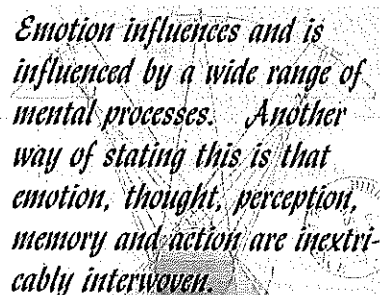
Another important aspect of implicit memory is the ability of the mind to form schema or mental models of experience. These generalizations can be across experiences and across sensory modalities and reflect the brain's inherent capacity to function as an "anticipation machine"—deriving from ongoing experience an anticipatory model of what may occur in the future. Such mental models are a fundamental part of how attachment experiences are thought to influence the child's later relationships as expressed in John Bowlby's notion of an "internal working model" of attachment (Bowlby, 1969).

By the end of the first year of life, infants begin to have a sense of the sequence of experienced events marking the beginning of explicit memory (Bauer, 1996). Explicit memory is what is commonly considered as "recollecting." It requires focal attention for its encoding that appears to activate a region of the brain called the medial temporal lobe, including the hippocampus. The postnatal neurogenesis of parts of the hippocampus may explain the delayed onset of explicit memory until after the first years of life. When explicit memory is retrieved, it has the subjective sense of "something being recalled." Explicit memory includes two major forms: Semantic (factual) and episodic (autobiographical). This latter form

of memory has the unique features of a sense of self and time. Recent brain imaging studies suggest that episodic memory is mediated by a number of regions including an area of the brain called the orbitofrontal cortex. Ernst Tulving and colleagues (Wheeler, Stuss and Tulving, 1997) use the phrase, "autonoetic consciousness" to refer to the ability of the mind to know the self and to carry out "mental time travel"—seeing the self in the past, present and possible future. The development of the orbitofrontal regions during the first years of life may help us to understand the onset of this autonoetic capacity during the toddler and preschool years.

There is a tremendously exciting convergence of findings regarding the orbitofrontal region which suggest a number of highly relevant processes subsumed by this coordinating area of the brain. Located in the prefrontal cortex just behind the eyes, and sitting between the "limbic system" and the associational regions of the neocortex, this convergence area receives input from and sends neural pathways to a wide array of perceptual, regulatory and abstract representational regions of the brain. In this manner, the orbitofrontal cortex serves to integrate information from widely distributed systems and also to regulate the activity of processes ranging from memory representations to the physiological status of the body, such as heart-rate and respiration. The orbitofrontal cortex : 1) is dependent upon attachment experience for its growth and it mediates emotionally "attuned communication" (Schore 1994, 1996); 2) mediates autonoetic consciousness (Wheeler, Stuss and Tulving, 1997); 3) monitors the state of the body and regulates the autonomic nervous system as well as being a primary circuit

of stimulus appraisal which evaluates "meaning" of events (Damasio, 1994); and 4) it appears to be an important region subsuming social cognition and "theory of mind" processing (Baron-Cohen, 1995). Interestingly, it appears that it is the orbitofrontal cortex on the right side of the brain that is dominant for most of these processes. These findings may help us to understand the possible mechanisms underlying how contingent emotional communication between infant and caregiver within attachment relationships has such profound influences on a range of



Emotion influences and is influenced by a wide range of mental processes. Another way of stating this is that emotion, thought, perception, memory and action are inextricably interwoven.

domains including autobiographical memory and narrative, physiological regulation, and interpersonal relatedness. Each of these basic aspects of the developing mind are mediated by the same self-regulating, experience-dependent circuits that have their initial differentiation during the early years of life!

Emotion

The contingent communication between infant and caregiver is often considered as a manifestation of the parent's sensitivity to the child's emotional signals and a form of affective attunement between the members of the pair. How can we understand the ways in which this

communication with and about emotion has such a profound influence on the development of such a wide range of functions? Researchers have addressed the topic of emotion by looking at the level of psychological function, attachment theory and more recently at neurobiological substrates of emotional development. My own approach is to examine the fundamental role of emotion by drawing on various levels of analysis—from neuronal processes to interpersonal relationships—in viewing the individual mind as a system and the relationship between individuals as a way in which two minds come to function as a dyadic system. This "interpersonal neurobiology" perspective allows us to move back and forth between neuronal activity and mental function and between individual and dyadic processes.

Though there are a wide range of details about how researchers attempt to define emotion, many authors point to a number of common features (Sroufe, 1996, Garber and Dodge, 1991). Emotion is often considered as a way in which the mind appraises the meaning of a stimulus, is a response to engagement with the world, and prepares the self for action. Emotion is also seen as having a number of levels of manifestation, including subjective, cognitive, physiological and behavioral components.

A fascinating recursive finding has been noted by a number of authors in terms of the regulation of emotion: Emotion is both regulated and is regulatory. In other words, the process of emotion serves to regulate other mental processes and is itself regulated by mental processes. This view supports the more recently held perspective that there are no discernible boundaries between our "thoughts" and "feelings."

Emotion influences and is influenced by a wide range of mental processes. Another way of stating this is that emotion, thought, perception, memory and action are inextricably interwoven. This linkage is exemplified by the idea that perception is the brain's preparation for action: There is no perception without the potential for action upon incoming stimuli. Thus, regions mediating "perception" are directly influenced by those which respond, internally and behaviorally, to perceptual representations. Likewise, modern views of the brain circuitry subsuming emotional processes support the view that all layers of the brain are influenced by the "limbic" regions. In fact, recent views of the neurobiology of emotion suggest that the limbic region—which includes the orbitofrontal cortex, anterior cingulate and amygdala—has no clearly definable boundaries. This suggests that the integration of a wide array of functionally segregated processes, such as perception, abstract thought and motor action, may be a fundamental role of the brain. Such an *integrative process* may be at the core of what emotion *does* and indeed what emotion *is*.

The brain as a system can be seen to function as a set of differentiated neuronal groups and circuits that can be clustered into a functionally integrated set of activations. Edelman (1992) has described the importance of such a cluster of interacting parts as having a "value" system that can reinforce or "select" certain stimuli and neuronal responses as valued preferentially over others. A range of neuromodulatory systems, including the limbic regions, can be proposed to meet the criteria for a value system of the brain. Such a value system must have extensive innervation to far reaching areas of

the brain, have the effect of enhancing the excitability and activation of neurons, and influence their plasticity (the capacity to strengthen and form new neuronal connections). In this manner, the limbic system may be conceptualized as a primary source of "value" for the brain.

What we can now say about the neuronal functions directly related to emotion is that there is believed to be an interdependence of several important domains of mental processes: stimulus appraisal (the evaluation of meaning), neural circuit activation, social communication, bodily state and autonomic regulation each appear to be mediated by a closely linked system of neural circuits. The significance of this finding is that it explains how communication within attachment relationships is the primary experience that regulates and organizes the development of those circuits in the brain that mediate self-regulation and social relatedness. Early in life, when the infant's brain is developing the circuitry responsible for these domains, attachment relationships help the experience-dependent growth of crucial neuromodulatory regions responsible for emotional regulation (Schor, 1994).

The infant has the capacity for interactive regulation as well as an emerging capacity for self-regulation. Repeated experiences in which interactions with the caregiver help to alleviate distress and amplify positive emotional states serve to organize the growth of the circuits that allow for more mature and complex levels of self-regulation as the child matures. Later in life, when these circuits are fairly well established, interpersonal relationships may continue to be important in the healthy reliance upon interactive regulation of adulthood. In this manner, resilience may be based on healthy early experience

but is a capacity—not a final product—that provides the individual with the internal resources to continue to draw on a balance of self-regulation and on interactive regulation within interpersonal relationships for continued functioning and adaptation throughout the lifespan.

Sharing emotional states is a direct route by which one mind becomes connected to another. The brain's evaluation of the meaning of events—the information—is linked to the activation of neural circuits—the energy. Our internal experience of emotion becomes in essence the "music of the mind" — the rhythmic flow of energy and information through our neural circuitry. Our interpersonal sharing of emotion, seen within attuned communications of secure attachments, is the way in which the flow of energy and information occurs—often nonverbally—between two individuals' minds.

Within neural circuits, the systems that mediate the perception of social communication—especially the nonverbal messages within facial expressions, gestures and tone of voice—are closely linked to those that appraise the meaning of stimuli and regulate the activation of the autonomic nervous system. Thus, information and energy flow are directly regulated by the regions that carry out and perceive interpersonal communication! It is with this new awareness that we can see the mechanisms underlying the long held belief in how powerful human relationships are in organizing our continually emerging minds.

States of mind and self-regulation

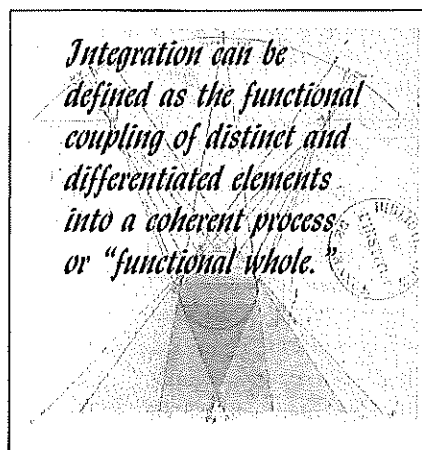
The capacity of the mind to self-organize can be explored by examin-

ing the nonlinear dynamics of complex systems, or complexity theory. Modern applications of this systems view to the human mind have yielded some powerful ideas for understanding development. In essence, these applications suggest a number of relevant concepts: self-organization, the movement toward increasingly complex states of activation, and the regulation of the state of activation of a system by both internal and external factors called "constraints." For our discussion of infant development, the relevant point is that one can view the relatively undifferentiated brain of the child as using the more specialized brain of the parent as an "external constraint" to organize its own functioning. The parent's mind acts to both alter the present state of the child's mind and to help form the neural circuits which will enable the child's brain to regulate itself in increasingly sophisticated ways as the child matures. Interaction between parent and child thus serves to help self-organization both in the interactive moment and in creating self-organizational neural capacities for the future.

The organization of attachment relationships may reveal characteristic ways in which the state of mind of the parent becomes linked to that of the child. For example, a securely attached child-parent relationship may have an ease in the creation of what can be called "dyadic states" in which the minds of two individuals become "joined" and function as a single adaptive and flexible system.. Such a system can be seen as both highly integrated and highly differentiated in a manner that creates maximal complexity of the system's flow of states across time. This feature of complexity theory has profound implications at a number of levels. One implication is that integration

occurs when there is a functional coupling of differentiated components. In the case of secure attachments, this coupling can be seen to allow for a balance in the patterns of regularity and novelty within the flow of states of the pair that enables the achievement of maximal complexity. Such a balance is observed as "attuned" or contingent communication and from this complexity view can be said to allow the system to achieve the most flexibility and stability.

Avoidantly attached children and their parents may be seen to have



interactions as isolated individuals who never enter such adaptive and flexible complex dyadic states. Highly differentiated but poorly integrated as a functional dyadic system, these pairs may lack the sense of joy and connection present in the experience of the securely attached child and parent's interactions. In contrast, ambivalently attached children experience the intrusive and inconsistent behavior of their parents which may lead to an excessively hypervigilant "matching" of child to parental states. Such a condition leads to excessive coupling (Beebe and Lachman, 1994) and poor differentiation that we can propose may severely limit the complexity and hence adaptive and flexible nature of the

states achieved by these dyads.

For the disorganized attachments, a child may have experienced abrupt shifts in state on the part of the parent that can result in fear and disorientation in the child's mind as described by Mary Main and Erik Hesse (1990). The hypervigilant stance seen clinically in these children may also reveal highly coupled communication with poor differentiation that may be seen as minimizing the level of complexity achievable by the dyad. The parent seems unable to perceive distress in the child and is thus unable to provide interactive regulatory experiences that would enable the child to use the parent to enter more tolerable levels of arousal. Repeated experiences within disorganized attachments has been shown to be associated with the process of dissociation in which mental processes fail to become integrated into a coherent whole (Main and Morgan, 1996, Ogawa et al, 1997). Adult attachment narratives of the parents of disorganizedly attached children reveal the unique finding of narrative discontinuity and disorientation during the interview that are considered to be signs of unresolved trauma or grief. These findings suggest that the "unresolved state of mind" of the parent has a profound effect on the capacity of that adult to not only provide a coherent autobiographical narrative but to offer the coherent parenting that organized attachments require.

Integration

The interweaving of findings from attachment research, complexity theory and neurobiology yield some intriguing possibilities. One idea is that the mind functions as a system that develops the ability to self-organize utilizing the modulation of both internal and external constraints.

Internal mechanisms include neuromodulatory processes that enable the mind to regulate its states of activation, representational processes and behavioral responses. Such a well-developed capacity for neuromodulation would be mediated by circuits capable of integrating a range of neural processes, from abstract representations to bodily states. As we've discussed, these circuits may confer "value" to stimuli and are functionally connected to the systems that mediate interpersonal communication. Attachment can be understood as the way in which the child's mind comes to organize itself as a system both within itself and as a part of the larger system of human relationships. We each carry forward elements of these early organizing experiences in our neurally mediated capacities for emotional regulation, interpersonal relationships, and autobiographical narrative processes.

"Integration" can be proposed to be a central self-organizing mechanism that links these many disparate aspects of internal and interpersonal processes. Integration can be defined as the functional coupling of distinct and differentiated elements into a coherent process or "functional whole." This concept has been used by a wide range of researchers including those studying group behavior ("inter-individual integration"), development across the lifespan ("individual integration"), and brain functioning ("neural integration"). Within a coherently integrated process, adaptive and flexible states are achieved as individual components remain highly differentiated AND become functionally united. Such states may also be seen as moving toward conditions that maximize complexity. Coherent narratives and flexible self-regulation may reflect such an integrative process within the

individual mind. Interpersonal integration can be seen when the mind of one person has the free and collaborative exchange of energy and information with another mind. Such adaptive and flexible states flow between regularity and predictability on the one hand, and novelty and spontaneity on the other, to yield a maximal degree of complexity in their functional coupling. Such dyadic states may be seen within the interactions of securely attached children and their parents. The "mind" – defined as the flow of energy and information – can thus be conceptualized as an inherently integrating system. This "system" may be viewed from a wide range of levels of analysis, from groups of neurons to dyads, families, and even communities. Such a view may allow us to synthesize our understanding of the neurobiology of the individual brain with insights into the interpersonal functioning of people within dyads and larger social groups.

Another application of the concept of integration can be seen in unresolved trauma or grief. Unresolved states may be conceptualized as an ongoing impediment of the mind to achieve coherent integration. Lack of resolution thus implies a blockage in the flow of information and energy within the mind and may also manifest itself as an impairment in the capacity to achieve a coherent transfer of energy and information between minds. This may help us to understand the finding that the most robust predictor of disorganized attachment is a parent's unresolved state of mind as revealed in the adult attachment narrative. One example of this failure to achieve integration is in the various forms of dissociation that may accompany lack of resolution. For example, unresolved states may involve the intrusion of ele-

ments of implicit memory, such as emotions, behaviors and perceptions, in the absence of an explicit memory counterpart for aspects past traumatic experiences (Siegel, 1996). Such "dis-associations" of mental processes may be at the core of clinical "dissociation" and an outcome of both trauma and earlier histories of disorganized attachments. A parent with lack of resolution is at risk of having the sudden and inexplicable intrusion of these traumatic implicit elements and the concomitant rapid shift in internal states which may dramatically impair the parent's ability to perceive, tolerate and respond contingently to the child's signals. In this manner, we can see that impaired internal integration may lead to impaired interpersonal integration.

A further application of the concept of integration can be seen in an analysis of the nature of our life-stories. The structure of the narrative process itself may reveal the central role of integration in states of mental health and emotional resilience. Within the brain, the neural integration of the processes dominant in the left hemisphere with those dominant in the right can be proposed to produce a "bihemispheric" integration which enables many functions to occur, ranging from perceptual processes to motor coordination. Another process that can be proposed to depend upon bilateral integration is that of narrativization. The left hemisphere has what has been called an "interpreter", searching for cause-effect relationships in a linear, logical mode of cognition. The right hemisphere is thought to mediate auto-noetic consciousness and the retrieval of autobiographical memory. Also dominant on the right side of the brain is the social cognition or theory of mind module of information

processing. Coherent narratives can thus be proposed to be a product of the integration of left and right hemisphere processes: the drive to explain cause-effect relationships (left) and the capacity to understand the minds of others and of the self within autonoetic consciousness (right). In this manner, we can propose that coherent narratives reflect the mind's ability to integrate its processes across time and across the representational processes of both hemispheres.

Could this central process of the mind's capacity for integration, both internal and interpersonal, be the link between narrative and parent-child relationships? Is such a capacity at the heart of secure attachments? Finding ways to facilitate an integrative process within and between individuals may enable us to help others grow and develop. Utilizing these interpersonal neurobiological ideas about the developing mind perhaps can help us to begin to unravel the mechanisms of what for so many in the field of infant mental health has been an intuitive idea: That relationships have the power to nurture and to heal the mind.

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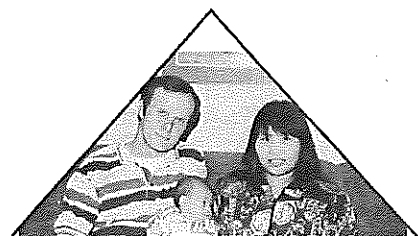
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Can an infant discriminate dyadic from triadic interactions? Can it coordinate its attention and actions towards two persons at a time? Can it share the same feeling with two people simultaneously? And when?

by Elizabeth Fivaz Depeursinge

Most theories consider that development proceeds from dyadic to triadic interactions. Dyadic interactions characterize the social stage, or primary intersubjectivity, from about three months on; triadic interactions characterize secondary intersubjectivity, from about nine months on (Trevarthen & Hubley, 1998). By triadic interactions, these theories mostly mean infant and mother coordinating their attention to interact about an object. An example of triadic interactions would be an infant pointing at an object and then gazing at mother, often with a requesting vocal gesture. She trusts mother to understand that by that signal she manifests an intention, such as getting her to hand her out the object. Here we have in mind Bates (1979, p. 36) definition of intentionality: "The sender is aware, in advance, of the effect that the signal will have on the receiver, and will continue to act so as to obtain that expected goal." This ability to refer to third parties, albeit non-verbally, indicates that the infant now knows she has a

INFANT'S TRIANGULATION STRATEGIES:

**A new issue
in development**

mind, with intentions, goals, inner feelings, that her partners too have minds, and that she can share mental experiences with them, and keep them private or be confronted with the rejection from them (Stern, 1985).

We were led to question these views. Having set out to observe an infant interacting with two parents at a time rather than a single one (see for an overview, Fivaz-Depeursinge & Corboz-Warnery, 1995; Fivaz-Depeursinge & Corboz-Warnery, in press), we realized gradually that we were actually addressing to the infant new and indeed revolutionary questions, such as: Can you discriminate dyadic from triadic interactions? Can you coordinate your attention and your actions towards two persons at a time? Can you share the same feeling with two people simultaneously? In fact, we found indications that an infant who is at the social stage is already able to handle a three-together interaction by gazing back and forth between her parents and transferring an affect signal along with her gaze. Likewise, by nine months, we observed that the infant uses with two persons the very same strategies she uses with a person and an object, in so-called triadic object interactions, and despite the fact that people are inherently less predictable than objects. These strategies are: *affect sharing* (Kasari, Sigman, Mundy, Yirmya, 1990), *affect signaling* (Bruner, 1978) and *social*

referencing (Klinnert, Campos, Sorce, Emde, & Svejda, 1983).

This paper provides a brief overview of the descriptive evidence we gathered concerning triangular strategies at the secondary intersubjective stage. Then it describes a new observation paradigm designed to delineate better the infant's triangular capacities at the primary intersubjective stage. For the sake of clarity, we will keep the term of triadic interactions when the referent is an object and use the term of triangular interactions when the referent is a person.

Triangular Strategies at the Secondary Intersubjective Stage

We observed triangular strategies in the Lausanne Triadic Play setting (see Fivaz-Depeursinge & Corboz-Warnery, 1995), in which the family successively plays in the following configurations: 1. A "two-plus-one" with one parent as active parent and the other as third party; 2. The reverse; 3. A "three-together"; 4. A "two-plus-one" with father and mother in direct interaction and infant as third party (Corboz-Warnery, Fivaz-Depeursinge, Gertsch-Bettens, & Favez, 1993).

The data are drawn from a sample of 12 non-clinical families followed longitudinally over the first year of the infant's life (Frascaraolo, Gertsch-Bettens, Fivaz-Depeursinge, Corboz-Warnery, 1997). These families' interactions are categorized in four types of "family alliances," according to the degree of coordination they reach in working towards establishing affective communion in "triologue" play. "Good enough" family alliances include the cooperative (optimal) and stressed (moderate) types, observed usually in non-clinical fam-

ilies; the problematic family alliances include the collusive (fair) and disordered (extreme) types, mostly observed in clinical families (Fivaz-Depeursinge, Frascaraolo, & Corboz-Warnery, 1997a).

Let us examine examples of nine month-old infants' triangular strategies. The latter consist roughly of the same steps as in triadic interactions (for detailed results, see Fivaz-Depeursinge & Darwish, 1998).

Affect Sharing

- Mother, active parent, and baby are playing puppets; mother laughs, baby laughs (and smiles at mother), and father, third party, smiles, resonating with their pleasure;
- Baby, smiling, turns to father, in order to share her pleasure with him too; father smiles; (note that mother smiles even more broadly as she looks at baby smiling at father);
- Baby lowers his head, stops smiling and reorients to mother, ready to resume the game with her.

In other words, not only is the pleasure directly shared between mother and baby, but also between father and baby. Father as third party has fully validated the baby's bid for intersubjective communion.

Triangular Affect Signaling

- Baby is begging to play with a bottle of water that she has noticed sitting on the table; she is whining as she intently looks at it; mother, the active party, who perfectly understands her intention, replies in a soft but firm voice: "You cannot have it."

- Baby turns to father, third party, with the same begging affect signal, visibly hoping father will give in; interestingly, father keeps to his third party role, but in a flexible way: he declines, but with a "sorry face" and a shoulder shrug. Again, father has validated baby's bid; note that he did it without interfering with mother's role; on the contrary, he supported mother's limit setting.

Triangular Social Referencing

Over the course of a three-together game, baby (a boy) has seized his mother's hair, in a possessive and impetuous manner; surprised, mother has cried out; baby was startled;

- Baby looks at father with a thoughtful, somewhat alarmed, perplex expression: he is "consulting" his face in order to make out what just happened between himself and his mother;
- Father responds in two steps; first, he smiles, thus helping the baby to return to a more receptive state; then, he conducts an affect attunement (Stern, 1985): by way of a translation of the infant's impulsive grabbing of his mother's hair, he makes a fast move forward, thus showing his son that he knows how he felt when grabbing his mother's hair; note that in addition he sets limits: indeed he stops his move short of actually grabbing the baby's hair too.

Events of this kind are brief, micro-stories that mostly go by unaware. They are a subclass of what we call "Expressive Events" where the three partners display more or less simultaneously an expressive signal. There are about 25-30

Expressive Events in an LTP session. Out of these, an average of eight (range: 1-14) include an infant's triangular strategies. As far as the regulation of triangular states is concerned, affect sharing basically signals to continue the interaction, whereas affect signaling and social referencing signal the necessity to change or repair the interaction.

Affect signaling accounts for about half of triangular strategies, whereas social referencing and affect signaling each account for about a quarter. Interestingly, we have found that the rate of affect sharing to affect signaling plus social referencing is equal or above one in the good enough alliances, whereas it is below one in problematic alliances. These results confirm Gottman's (1994) findings that in well functioning families, the rate of positive to negative affect is larger than one. Positive affect presumably has a buffering effect against the toxicity of negative affect.

It follows that there should be corresponding differences between the parents' responses to their infant's bids for intersubjective communion according to the type of family alliance. Indeed, the infant's triangular strategies are in good part selected and reinforced by the parents' responses. We observed four types of parental responses.

1. Differentiated validations: In the foregoing examples, the parents' responses were differentiated: the sorry face of father when baby tried to win him over about playing with the bottle was not only effective, but presumably pretty accurate in establishing intersubjective communion. So was his affect attunement about feeling the impulse to pull on the

mother's hair. Therefore, they qualify as differentiated responses.

2. Undifferentiated validations:

Instead of specifically conveying intersubjective communion, the parents' responses may merely convey plain positivity, soothing or limit setting. For instance, a baby has shown several times that he is not secure in playing with his mother, not surpris-



ingly in view of his mother's depressive style of interaction; he repeatedly checked out his father's face before actually engaging with his mother (social referencing). Now, the father's response was reassuring, in that he smiled to the baby. But the smile fell short of specifically conveying that he knew what his son was feeling inwardly. Thus this type of response qualifies as undifferentiated validation.

3. Misvalidations: In contrast, parents acting as third parties may confound responding to the infant's bids with interfering with the active parent's role. At a loss as to what to do, they fail to validate appropriately the infant's bid; they may merely avert their gaze, but some parents may go to extremes like blaming or threatening the infant.

4. No Validation: By far the most devastating response for the infant is to ignore deliberately her bid for intersubjective communion by continuing to look at her but with a still face. The infant's ensuing perplexity or distress just goes to show what

was her intention.

Again, we have found that the rate of differentiated versus undifferentiated, misvalidated and no validation whatsoever parental responses decreased markedly with the type of family alliance, from the optimal to the most problematic.

The parents' responses to the infant's bids for triangular inter-subjective communion have wide-ranging implications for the understanding of the development of intersubjective communication in families. For instance, intersubjective communion as a threesome may well be even more "consciousness-expanding," in Tronick's (in press) words than it is in a twosome.

Triangular Strategies at the Primary Intersubjective Stage

Assuming our interpretation is correct, the question of how triangular competence develops inevitably arises anew. If it derives from joint attention, then we should also trace its course with respect to people. But we cannot rule out the possibility that triangular interactions develop in parallel with dyadic ones. Indeed, there is experimental evidence to this effect, though it is scattered and indirect (see for a review, Tremblay-Leveau, 1997). Similarly, transcultural studies also suggest this possibility (Tronick, Morelli, & Ivey, 1992). Researchers involved in observational research on the triad all come to contemplate this possibility (Burgin & von Klitzing, 1995; Byng-Hall, 1995; Fivaz-Depeursinge, Stern, Corboz-Warnery, & Burgin, 1997b; Fivaz-Depeursinge, Stern, Burgin, Byng-Hall, Corboz-Warnery, Lamour,

et al, 1994; Stern, 1995). Still, the fact remains: the primary intersubjective infant has not been asked explicitly whether she is able to coordinate her attention with two persons and share an affect with them.

Under the joint guidance of Stern and the author, Donze has designed and piloted an "LTP with still face" situation to highlight better the possible triangular competence of the three to six month-old infant. We piloted it on a sample of 7 families seen at three and five months at our Center.

The results of the pilot study are described in Donze (1998). Here, we examine the operation of the observation paradigm and spell out the main working hypotheses resulting from this study.

The LTP with Still Face

Out of a considerable number of possibilities, we selected the following sequence of configurations: I: "three-together"; II: "two-plus-one"; III: "two-plus one" with the previously active parent displaying a still face; IV: reconciliation in a "three-together."

We capitalize on what we already know of the infant's grasp of triangular interactions at the social stage; notably, we know that she discriminates the four configurations in the triangle with her parents, provided the latter clearly display them with their body formations and maintain their roles (Corboz-Warner, 1991). It is important that, were the infant to orient to the third party, the latter redirects her attention back towards the active parent by turning toward the active parent.

1. In the first part, consisting in a "three-together," we start out challenging the infant to interact with both father and mother, in other

words, we ask her to coordinate her attention and affect signals with both of them.

2. We then expose her to a two-plus-one, asking her: now that you have experienced interacting three-together with your parents, are you able to focus on the active parent, while keeping the third party in the periphery? Note that the third party has the instruction, were the infant to turn towards him or her, to greet her discreetly and redirect her gaze towards the active parent.

3. It is after these successive exposures to the three-together and the two-plus-one configurations that we have elected to confront the infant with the still-face. It is conducted in keeping with the rules of the still-face paradigm (Tronick, Als, Adamson, & Wise, 1979) and in the same two-plus-one as in part II (the previous active parent poses the still-face). Yet in addition it provides the infant with an access to the third party. Therefore, we ask her whether and how she is going to recourse to the latter. Note that this access is limited since, were she to orient to him or her, the third party is again instructed to redirect the infant's attention towards the active parent.

4. Likewise, in the last three-together and given she has traversed the three foregoing configurations, we ask the infant again whether and how she will recourse to the former third party in reconciling with the active parent.

Preliminary Results

The test concerning the infant's triangular strategies at the social stage consists of her ability to coordinate attentional and affective signals between father and mother. The microanalysis of the infant's gaze and expressive displays revealed

broad as well as strict indicators of these abilities.

The broad indicators concern 1) the distribution of gaze episodes (roughly equal in the three-together versus unequal yet bilateral in the two-plus-one configurations); 2) the systematic avoidance of the active party in favor of the third party during the still face or the reconciliation parts.

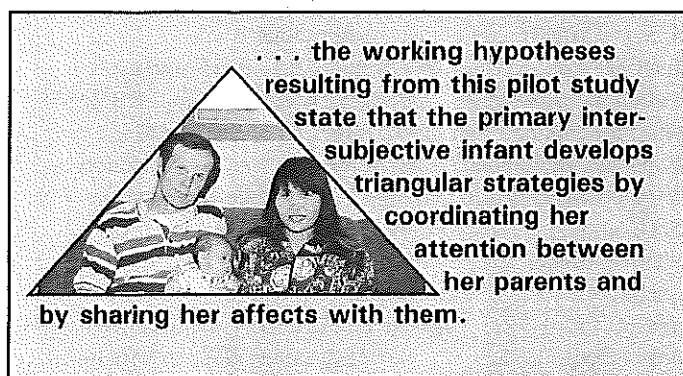
The strict indicators concern the transitions between orientations to father and to mother. Allowing for brief pauses between these orientations, one may observe two-step or three-step transitions: successively looking to a parent, to the other one (two-steps) and back to the first one (three-steps). Moreover, the infant may transfer an expressive signal from one parent to the other. For instance, baby warms up to mother. Looking at her brightly, smiling and babbling, she turns to father while maintaining her smile and vocal gesture. Or, during the part two-plus-one with still face, as the infant is attempting to reanimate the active parent, her face clouds and she turns with the very same expression to the third party. Or still, during the three-together reconciliation part, the infant addresses a cry face to the formerly still-faced parent and turns to the formerly third party with the same signal. In other words, we suggest that such bilateral signals respectively prefigure the triangular strategies of affect sharing, signaling and social referencing that we observe at the secondary intersubjective stage.

At this point, we cannot propose precise quantitative criteria because there was a large variation between families in the pilot sample. Of course, this may well reflect reality. Indeed, whereas all three month-old infants displayed strict and or broad indicators of coordination of atten-

tion and affect in at least one or more configurations, they differed in the trajectory they followed across the configurations. For instance, an infant may have excelled at alternating gaze and affect signals between father and mother in the first three-together; she might have partially carried over this strategy in the next two-plus-one; but then, she might

develops triangular strategies by coordinating her attention between her parents and by sharing her affects with them. These strategies prefigure the referential strategies that we observe at the secondary intersubjective stage.

A new study to test these hypotheses on a larger sample is now in progress. Many issues are to be



examined from there, not the least of them being what the exact status of these early triangular strategies is. For the time being, we

have exclusively focused on reanimating the active parent in the still face part; likewise, she might have ended up by also exclusively focusing on the previous third party in the reconciliation part. Another infant, in contrast, might have focused almost exclusively on father in the first three-together, but displayed triangular strategies during the two-plus-one with still face.

However, independent of the individual trajectories at three months, all infants progressed at five months. They showed more coordination of attention and deliberate avoidance of the still-faced parent in favor of the third party; they also showed more two-or three-steps transitions and more prefigurations of affect sharing, signaling and social referencing. The number of two or three step transitions involving a parent and an object markedly increased too.

In short, the working hypotheses resulting from this pilot study state that the primary intersubjective infant

suggest the term of "direct," in contrast with referential, to mean that early triangular strategies are conducted through action rather than through the referential processes that characterize secondary intersubjectivity.

To be sure, this is a complex situation in which an infant's trajectory and strategies not only depend on herself, but also on her parents' reactions to the situation. It follows that the elucidation of the early infant's triangular strategies will require different, more controlled situations. Pertinent is the so-called exclusion paradigm proposed by Tremblay-Leveau (1997). She confronts the infant with two experimenters; having successively established contact with the infant, the experimenters then turn to each other, thus "excluding" the infant. Preliminary results indicate that the young infant indeed coordinates her attention between the two adults and follows the direction of their gaze to each other.

Conclusion

Merely observing an infant interacting with two parents rather than one opens up a whole new world. It enlightens the significance of knowing how an infant handles triangular interactions as well as triadic ones, from the outset. Note that interactions involving a person as the third party and then also as the referent, are bound to be more "mind-stretching" than are those involving an object. When parents respond appropriately, then threesome "consciousness-expanding" states (Tronick, in press) are created for all parties involved. Certainly, triangular interactions do not in any way lessen the importance of the dyadic interactions that make up a father-mother-infant triangle. But they are bound to change our outlook on what precisely the social competence of a young infant is, on the origins of triangulation and on the importance of the parents' joint responses early in life for the development of family intersubjectivity.

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PERSPECTIVES ON INFANT MENTAL HEALTH

by Joy D. Osofsky, Past President

This article has been adapted from "For the Sake of the Infants and Families: Violence Prevention, Intervention, and Treatment," which appeared in Zero to Three, bulletin of ZERO TO THREE: National Center for Infants, Toddlers and Families, April/May, 1998, pp. 10-14 - 734 15th Street, N.W., Washington, D.C. 20005)

A special issue of *Zero to Three* was dedicated to Irving Harris to celebrate the 20th Anniversary of the organization, ZERO TO THREE: National Center for Infants, Toddlers, and Families. Irving Harris has played and continues to play a major role in the infant mental health field. In my reflections in the *Signal*, I thought it would be interesting to share parts of my contribution to this special issue.

Who is pushing the kids into the river?

Irving Harris begins his article for this special issue with the following story:

One bright, sunny afternoon, a group of friends gathered on the bank of a stream to have a picnic. They had just finished their preparations for lunch when someone shouted, "There is a child out there in the center of the stream." One of the men kicked off his shoes and ran into the river to rescue the child. Just as he got back to shore and put the child

on dry land, someone else shouted, "There's another child out there now." The same man ran into the river for the second time and, out of breath, soon came back with the second child. Friends made sure that both children were dried off and covered with towels before finding them warm blankets.

The rescuer, who was just starting to take off his wet clothes, suddenly heard someone shout again, "There's another child out there now." Instead of rushing in for the third time, he said to his friends, "Someone else go in this time." And with that, wet clothes and all, he slipped on his sneakers and started to run up the path which went along the edge of the stream. The others asked, "Where are you going?" The rescuer said, "I'm going to run up around the bend and find out who is pushing those kids into the river."

As Irving Harris so poignantly states, "We as a society are pushing kids into the river at an alarming rate." (p.3). My reflections in the article that I contributed focuses on my work in the area of prevention and intervention with high risk children and a description of my most recent work in the area of violence prevention.

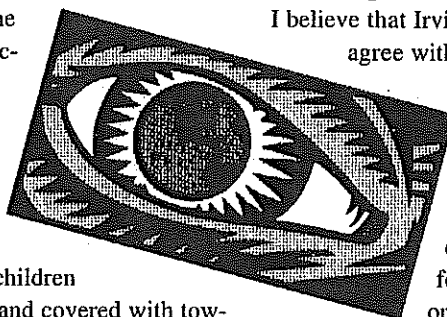
Years ago in my work with high risk children, I heard the saying that

constantly reverberates in my ears . . . "We should raise our children as we wish our grandchildren to be raised." I believe that Irving Harris would agree with this statement.

Further, I believe that Irving would agree that if the parents cannot do it, then we as a society are responsible for finding someone or building strength within the community

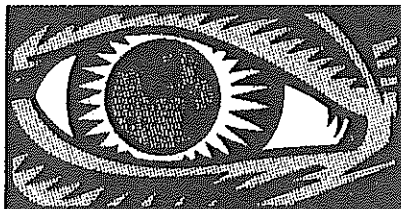
so that the infants and children will be raised in a way to promote positive intergenerational consistency for the children.

Unfortunately, in the United States, less focus is placed on prevention and intervention than on punishment and criminal justice approaches. In 1995, there were 1.5 million people incarcerated in state and federal prisons and in local jails around the country. Another 100,000 youths were confined in juvenile detention centers and institutions. The numbers of people in jail have tripled in the past two decades. And yet, with the growing number of people in jail, we do not see the level of violent crime decreasing. In fact, the situation is just the opposite: the number of jails is increasing and so is the level of crime. With our interests in prevention and early intervention, we see little evidence that prison deters crime, particularly for young people coming from poor neighborhoods where crime and violence are rampant. Further, criminal justice "solutions" are very expen-



sive, much more so than putting a sufficient portion of resources into providing quality education and early preventive intervention.

There are no existing models that can accurately predict the effects of exposure to violence at a young age on an infant or young child's behavior and development. However, there is sufficient longitudinal research indicating that children who have been victimized by violence over time are more likely to show increasingly vio-



lent behavior leading to juvenile delinquency (Zingraff, et al, 1993).

In several recent studies, it has been shown that children who are victims of violence are 24 percent more likely to report engaging in violent behavior as compared with adolescents not victimized in childhood (Thornberry, 1994; Smith and Thornberry, 1995). Widom's careful research (Widom, 1989; 1991) has shown that childhood victimization increases the risk for adolescent delinquency and almost doubles the child's chance of having a juvenile record compared to children in the population at large. Children who have been abused and neglected are much more likely to engage in official criminal behavior at an earlier age, commit more offenses, and become recidivists and chronic offenders than children in control groups (Rivera & Widom, 1990; Widom, 1989, 1991; Maxfield & Widom, 1996).

As I was acquiring more knowledge about violence prevention programs in other communities, I decided that it was also crucial to learn more about levels of violence exposure for

In 1992, I initiated the Violence Intervention Program for Children and Families (VIP) in New Orleans as a direct response to the crisis of rising violence in New Orleans (paralleling that in the United States as a whole) and the fact that ever increasing numbers of children were being exposed to violence as victims or witnesses.

Establishing the program was challenging. The city of New Orleans at that time was experiencing a high

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level of violence, there were continual changes in the police force, and much community organizing was met with realistic skepticism about the potential effectiveness of initiating a community-based effort involving outside agencies. My team of two social workers and two psychologists sat at the table for many months with resident council leaders from four housing developments located in an area of the city with one of the highest levels of violence, a police lieutenant and patrol officer from that district, and community agency representatives who worked with children and families exposed to violence. We first established a feeling of trust and then decided what type of program would be most helpful for the infants, children, and families in the area. What has evolved over time is a level of trust and confidence that has permitted the program to grow, and an understanding from the police, residents, community schools, and parents that we are available to help, provide education, and offer services. At all times our goals have been to help

young children in my own community. Therefore, I decided to gather data on the exposure to violence of elementary school children living in high violence areas paralleling a study that was being done by John Richters in Washington, D.C. (Richters & Martinez, 1993). This initiative was stimulated for me personally after I read a newspaper report of two children with guns, 10 and 11 years old, who shot and killed an innocent person. If I was to work in this area in my community and initiate a preventive intervention effort, I needed more information on children's exposure.

Personally, I was shocked by the results of this study published in 1993. The majority of children in the 3rd and 5th grades in the elementary school that we surveyed had been exposed to an inordinate amount of violence. Further, what startled me even more was that over 40% of these 8-11 year old children had seen a dead body (Osofsky, Wewers, Hann, & Fick, 1993). Unfortunately, after working in this area for 5 years, I am no longer shocked by what I see or hear. It is quite predictable in any classroom in an inner city school in the United States today that the majority of the children will have either seen a shooting or stabbing or experienced a loss of someone in their family due to violence. These very young children tell stories of such horrors as every day events. Just a few months ago, a group of a 5th and 6th grade children whom I was interviewing expressed their fears about moving up into middle school and high school.

The academic challenges were irrelevant to them. Their major concerns related to safety and whether they would be in danger in the new schools that they would soon be attending.

build strength within the groups we work with rather than taking over and to be available to provide advice, guidance, and services. Since an excellent police superintendent came to New Orleans in 1994 with a strong commitment to community policing, our program has evolved and grown, at the same time that he and his officers, supported by the city leaders, have been effective in reducing the level of violence in the city and changing the image of the New Orleans Police Department.

Overview of the Violence Intervention Program for Children and Families

The Violence Intervention Program for Children and Families (VIP) uses a systems approach designed to work with the whole community to address the problem of violence among our youth and to develop meaningful prevention and intervention efforts.

Evaluation of the effectiveness of our work has been built into our intervention program from its inception so that we will be able to learn about what works and what does not and determine the changes that are needed to make the program more effective.

The project aims to decrease violence through a combination of services to victims including early intervention, counseling, and education and prevention forums directed at police, parents, and children.

A key component of the program is education of police officers about the effects of violence on children and families to increase their knowledge and sensitivity when dealing with violent incidents. Teams of psychologists and social workers visit the district stations during roll call before the officers are scheduled to

go out in the streets. A ranking officer at the district is always present to introduce the mental health team and endorse the importance of the material to be discussed before the presentation begins. We talk to the officers about how violence may affect children and how their approach to the children and families as well as referral to our program for services, if needed, can make a difference. We always leave time for questions and discussion so that they can bring up their individual concerns.

One of the issues voiced repeatedly by the officers is their concern about the children who may be exposed by their parents to dead bodies at the time of a homicide in their neighborhood. They feel that parents should know better and, also, that it is difficult to secure a homicide scene with so many people around. Our team is open to discussions of this type with the officers and also brings up in an empathic way the concerns that parents may have regarding their children or the police officers.

In the course of our work with police officers we have learned that attention must be given to their emotional needs related to the stress of their work. While this topic is always mentioned during roll call, the officers most often bring up such concerns privately after the general discussions. We are currently working on efforts to expand support services for both the officers and their families. In 1995, 350 police officers received such education with continued follow-up during roll call. In 1997, another massive educational effort was initiated for the entire police force, including homicide, juvenile and child abuse.

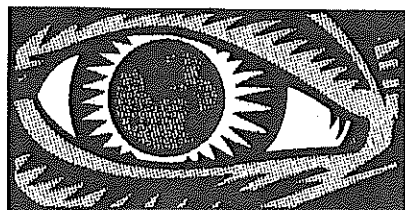
The evaluation of the effectiveness of the education for police from 1994 to 1997 indicated increased

sensitivity to the needs of the traumatized children as well as increased knowledge about resources for referral. See Figure 1.

In an effort to reach traumatized children and families as quickly as possible, a 24-hour Hotline was established to provide the needed communication through which children and families touched by violence could seek immediate referral, counseling, and guidance. It is available to police officers and families to obtain advice or information at the scene of community or domestic violence. The police distribute VIP cards with the hotline number to families so that they can seek help if needed. Over the course of three years, we have noted that approximately 25% of the calls on the hotline come from the police and 75% come from families to whom they have given the number. About 60% of the calls are for referrals of children 12 years old or younger (with some children as young as one to two years of age) and approximately 50% of the calls become referrals for mental health services. The funds that are raised to support the program allow us to provide mental health services to many children and families who could not otherwise afford such services. Over the past year, overchildren have been provided with a variety of therapeutic services. See Figure 2.

The VIP program expanded in 1996 to develop intensive intervention efforts in two elementary schools, in addition to in-service education and consultation already being provided in many other schools. In these two schools, immediate interventions, treatment, guidance and counseling are available when a child is identified. Parent support groups are carried out weekly and education for teachers and counselors is done

as needed. Ongoing consultations are held with the principals of these schools. Approximately 80 children are seen individually or in groups each week in each of these schools



for intervention or therapeutic work. See Figure 3. In 1995, approximately 100 infants, children, and families were referred to the child clinic for consultation, therapy, or parental guidance related to exposure to violence. In 1996, as our program expanded, that number more than doubled with referrals of at least 250 children.

The number of traumatized children and families continues to grow, not so much because more children are witnessing violence, but rather because more people know about our program, are recognizing the importance of prevention and early intervention, and are referred or call directly. Children and families receive services in the child clinic at LSU Medical Center's Department of Psychiatry in addition to ongoing consultations and services provided in the schools and in the community. If families do not have the financial resources to pay for services, they are provided free because of private grant support for the program, as well as crime victims assistance funding from the Louisiana Commission of Law Enforcement through a block grant from the Department of Justice.

In developing our program as a multidisciplinary effort, we worked to find ways to build relationships between community, police, mental health professionals, and schools to

address issues of prevention and services for referred children who witness violence and suffer from symptoms related to their exposure such as

What is needed is a change in focus from punishment after the fact, to the needs of children for loving, involved families and safe communities, quality education, and economic opportunities.

nightmares, disruptive behavior in school, and, in the most extreme cases, post traumatic stress disorder. We continue to problem-solve with police to develop strategies that might work better for the child witnesses when they investigate violent incidents, such as homicides. We work with parents to find ways that they can protect their children, keep them safe, and away from violent scenes because of the potentially traumatizing impact on both them and their children. Further, we work to build strengths in communities to help both parents and children.

Our project has continued to evolve and grow. We have developed materials to use for training and intervention, including a Police Education Manual, a Children's Safety Booklet, a Parenting Booklet, a quarterly Newsletter about activities of the program, and a Community Resource Directory. In 1997, I published the book, *Children in a Violent Society*, an edited volume describing the problem of children's exposure to violence, the VIP program in New Orleans, and several other preventive intervention programs in New Haven, Boston, and Los Angeles.

Conclusion

What is needed is a change in focus from punishment after the fact, to the needs of children for loving, involved families and safe communities, quality education, and economic opportunities. These would go a long way toward preventing violence. Only then can people work together, take responsibility for others, and help children develop the values and respect that comes from within families and communities.

Further, to achieve these goals, the external society must be supportive and make a commitment to changing media values communicated to children and families, provide economic opportunities, and other options for children and youth, apply stricter gun control and responsibility policies, and change general attitudes to make violence unpopular, unappealing, and even unacceptable for a majority of the population, all of whom influence children. Only in these ways, along with early prevention and intervention can we find "solutions" to the violence problem for the sake of the infants, young children, and families.



President's Perspective

Yvon Gauthier

After two days of intensive work in a conference on perinatology at La Reunion Island (a French Department in the Indian Ocean), well attended by about 200 professionals working in the field (nurses, midwives, obstetricians, pediatricians, child psychiatrists and psychologists), I was asked to conclude and attempt a synthesis of what had been discussed. I thought I would use the comments I made in my column here, as they express my views about the evolution of our field.

We are living in exciting times. Obstetrics-gynecology has become high-technology medicine, diagnosing handicaps early in pregnancy, keeping alive premature children who would have died not so long ago. But implicit in the evolution of the field is a danger that technology takes the whole place, and that intense parental reactions around such highly charged situations are not dealt with, eventually leading to the establishment of poor infant-parent relationships. At the same time, we have observed increasing knowledge on infant competencies, on the importance of early infant-parent relationships, and we know much better how early disturbed relationships may lead to psychopathology. We also know much better how important it is to put into place early interventions in such difficult situations.

In this conference, we have heard efforts made by several teams, both here in La Reunion and in Montpellier

(France), to create conditions around the birth of a child which foster infant-mother unity, which try not to separate a child from her mother when not absolutely necessary; create conditions that will make a disturbed mother feel that all members of the team are working together to contain her anxieties. We have heard about team efforts made to work early with vulnerable parents such as adolescent mothers, or socially marginalized parents, in particular those with drug-addictions. We have heard about how to reach these defensive mothers always afraid to be rejected, how to listen to their anxieties. We have also heard how within a team it is important to be careful about the transmission of very personal information and how to preserve confidentiality.

It has become clear to me, from all these communications, how all members of the perinatology team have to be listening in a climate of non-judgmental care, how a relationship can be structured with such difficult mothers at any, often unexpected, moment during pregnancy, and that it is this relationship that will make a difference in the follow-up and quality of the child care. Quite often, it will be the quality of the "containment" by the whole team that will make the difference. In other situations, it will be the quality of the special relationship established with one professional—a midwife or a psychiatrist - which will make the child find a mother ready to

be a healthy, responsive caregiver. And in some situations, the birth of this new child will be the stimulus to renew, through a therapeutic relationship, a psychic development which seemed to have stopped until then.

I admire this decision of yours to put together your own AFRÉE (Association de Formation et de Recherche sur l'Enfant et son Environnement), in close connection with the Montpellier AFRÉE. It is very stimulating to see a community of professionals decide that they will form themselves into such a group so as to meet regularly and to share their experiences of working with pregnant mothers and young parents around the arrival of a new child into this world, especially around vulnerable situations.

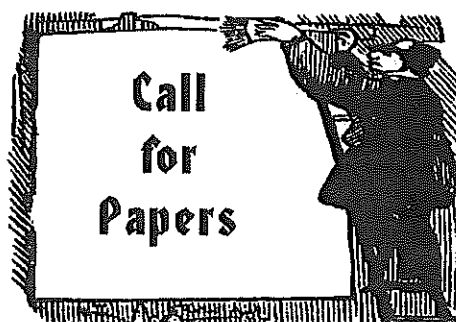
Those comments made to a new Organization formed around perinatology in La Réunion could have been made two weeks later in Avignon (France) at a conference organized by ARIP (Association for Research and Training in Perinatology) on the theme: *To become a mother; to become a father*. Again I was struck by the quality of papers presented in several workshops on specific anxieties of echographists and of their patients, on difficulties lived around the arrival of a child in immigrant families, on interventions made in socially marginalized families. A special accent was placed in plenary sessions on the early triangulation of a child's life (Elizabeth Fivaz's work in Lausanne), and on changes, in so many of our societies, in the role and functions of fathers, and on the place fathers take more and more often in the early care of their child in close communion with mothers.

And then, in Montpellier (France), I took part in training discussions around cases followed in maternity wards where we see how a

new pregnancy often brings back painful memories of an earlier pregnancy and much anxiety that has to be worked on rapidly. Here again, the mental health role of all professionals working with expectant mothers comes out clearly—the role of midwives, nurses and obstetricians—as long as a continuous collaboration is put into place between these professionals and a psychiatrist or a psychologist, whose role is either to support the relationship of this professional with the mother, or to work directly with her. A mental health team is thus gradually created with considerable benefit both for professionals and new parents.

I can't help thinking, participating in such works of quality, and observing the interest in this crucial period of a child's life, in France and in so many parts of the world, that the Montreal Congress should be a special place to present and discuss these questions. I am particularly happy with the theme that was chosen for this Congress: *Diversity, Challenges and Opportunities in Infancy*. It should help all of us to bring together various disciplines working with parents and infants, from different and varied cultures, with diverse therapeutic approaches. I am looking forward to welcoming you all in Montreal.

Pre and Postnatal Exposure to Alcohol and Other Drugs



An Infant Mental Health Journal Special Issue

Special Issue Editors

Hiram E. Fitzgerald
Michigan State University

Heather Carmichael Olson
University of Washington

Currently there is no smooth connection between the scientific and clinical literatures on two important topics: the developmental impact of prenatal substance exposure and the effects on development of postnatal rearing by parents addicted to substances. The goals of this special issue of the *Infant Mental Health Journal* are to help bridge these two literatures, and to encourage a continuing dialogue between investigators studying the early effects of prenatal substance exposure and those examining the sequelae of rearing by addicted parents during the first three years of life. For this special issue, preference will be given to empirical or clinical studies focused on alcohol, cocaine, and nicotine. Although of clear importance, studies of the effects of obstetrical medications will not be considered for this special issue. Manuscripts should conform to the guidelines of the American Psychological Association.

Deadline for receipt of manuscripts is June 15, 1999; the special issue will appear in Spring 2000. All submitted manuscripts will be submitted to the journal's standard peer review practices. Send 4 hard copies and 1 disk copy to: Hiram E. Fitzgerald, Ph.D., Applied Developmental Science Graduate Programs, Michigan State University, 6 Kellogg Center, East Lansing, MI 48824-1022, USA. Questions about this special issue can be directed to fitzger9@pilot.msu.edu.

Michigan Developing IMH Competencies

The Michigan Association for Infant Mental Health is developing a certification process for persons involved in relationship-based work

with infants and caregivers. We would be interested in knowing if any WAIMH affiliates or members have explored this area, or have de-

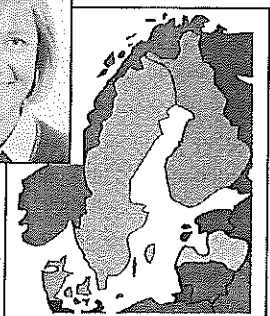
veloped training materials (reading/video lists) for various levels of expertise. Please reply to ssstin@1234@aol.com

—Betty Tableman, President
MI-AIMH

meet your regional vice-president



Pia Risholm Mothander, Ph.D.



In the previous issue of the Signal, we featured Dr. Campbell Paul, Regional Vice-President from "down under" the world. In this issue, we go in the opposite direction: to the top of the world. Dr. Pia Risholm Mothander is Regional Vice President for Northern Europe. She is a child and adolescent therapist who lives and works in Stockholm, Sweden. Following is her introduction to herself and to her work in the infant mental health field.

I am a psychologist, and have my doctorate from Uppsala University, the oldest university in Scandinavia (1477). I am a certified child and adolescent psychotherapist, trained at the Erica Foundation in Stockholm, where I teach today. I have been working with infants and families for more than 20 years in the Stockholm County Coun-

cil, which is the organization responsible for regional health care. My earlier working

experience includes 5 years in Eastern and Southern Africa in different family oriented UN-projects. I am the Director of a preventive and early intervention program within the child-psychiatric out patient clinic in Stockholm. We give consultations to the MCH-staff and see families with preschool children.

In our clinical work we are focusing on the formation of parent-infant-relationship patterns during pregnancy and infancy, in the belief that this period is well suited for preventive work and early interventions. Personally, I am the consultant to a well-baby clinic for vulnerable infants and families in Stockholm. I have also published two books *Mellan mor och barn* 1994 (Between mother and child) and *Utvecklingspsykologi. Psykodynamisk teori i nya*

perspektiv 1995 (Developmental psychology. Psychodynamic theory in new perspective).

At present in our Program we are working on a research project about the development of maternal representations during twin pregnancies. This work is done in collaboration with Prof. Daniel Stern and the University of Geneva. We are also trying to develop our intervention methods to support families with very premature babies, as well as support groups for newly immigrated infant-mothers. A project now in the planning phase is about how to develop toddler-parent psychotherapy.

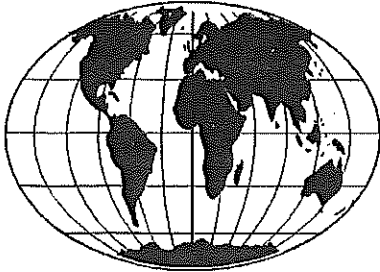
My first contact with WAIPAD was, as for many of my Scandinavian colleagues, during the world conference held in Stockholm 1986. I then received an NCCIP fellowship sponsored by T.B. Brazelton and could visit the United States during two interesting seminar weeks in 1988-1989.

NFSU was created in November 1991, the first affiliate accepted by the merged WAIPAD/IAIMH.

Regional vice presidents play an important role in WAIMH. They are responsible for Affiliate development and are liaisons between Local Affiliates and WAIMH. They have major responsibilities for membership expansion, regional congress promotion, and inter-country advocacy of infant mental health. They also are encouraged to provide input to the Executive Committee apropos of the goals and issues that WAIMH should be addressing. We are delighted to be able to begin a new feature of The Signal in an effort to acquaint WAIMH members with their Regional Vice Presidents.

I was elected its first President. The NFSU is one of the largest affiliates within the WAIMH with more than 200 members from Sweden, Denmark, Norway, Finland and Iceland. In 1994 the NFSU-Board moved from Sweden to Norway when Dr. Bjorg Roed Hansen took over the Presidency. In 1997 the Board moved to Denmark. The NFSU has one regional meeting every year, hosted by different groups of members at different sites. A network is established, with a newsletter and many informal contacts between members in the Scandinavian region.

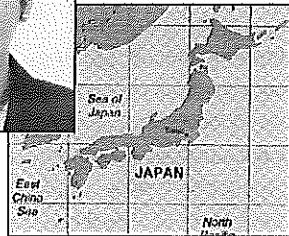
As the Regional Vice President for Northern Europe my role has mainly been to keep in touch with the Nordic countries and NFSU "Nordiska föreningen för spädbarns utveckling" (NFSU, the Nordic Association of Infant Mental Health). Collaboration with other WAIMH Affiliates is a goal, and so far we have established contact with our colleagues in St. Petersburg.



meet another regional vice-president



Hisako Watanabe, M.D. Ph.D.



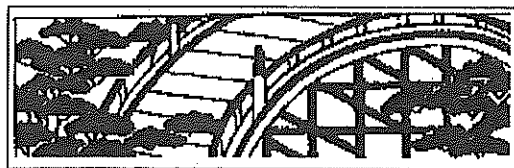
This double issue affords us an opportunity to introduce you to another Regional Vice President. We move now from Pia Mothander's territory in the far reaches of the North to the Asian continent and the islands of Japan where we meet Dr. Hisako Watanabe, an infant, child and adolescent psychiatrist who lives and practices in Tokyo, Japan.

Dr. Watanabe is an infant, child and adolescent psychiatrist with a background of training in general pediatrics, psychiatry and neurology. She also trained in psychoanalytic child psychotherapy at the Tavistock Clinic in London (1990-1992). As assistant professor, director of child psychiatry and full-time staff on the faculty of the Department of Pediatrics, School of Medicine, Keio University, she trains young pediatricians with a special focus on sensitive clinical approaches for prevention, early detection, and intervention of child psychiatric disorders, the range of whose problems including anorexia nervosa, child borderline personali-

ty, pervasive developmental disorders, child abuse and postnatal depression, all of which are, she notes, ever increasing in Japan today.

As regional vice-president of the World Association for Infant Mental Health, she brings to her work some powerful concepts from Japanese culture, notably that of *Amae*, often characterized as "attachment and dependence" and which pervades

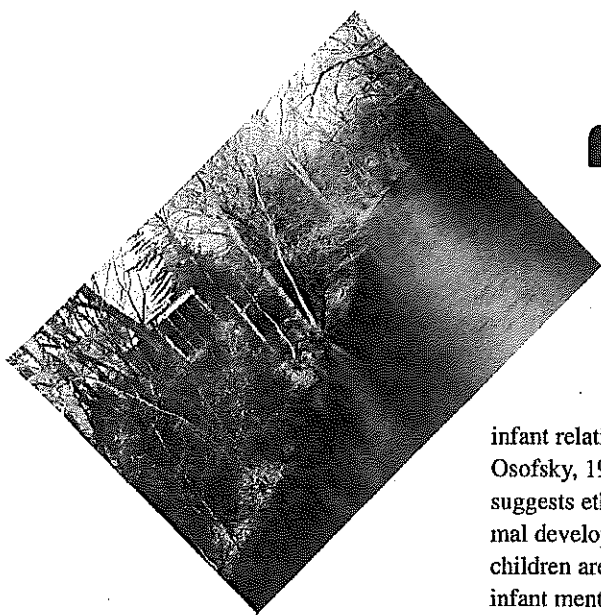
Japan and Asia, which aims to restore and further cultivate a warm secure mental ecological system for infants and their families within the ever changing industrialized world. Her research interests include childhood-onset anorexia nervosa, autism, mother-infant psychotherapy, perinatal bereavement, and intergenerational transmission of psychopathology taking into account the impact of deep-rooted cul-



not only infancy but adolescent and adult relationships as well in modern Japanese life.

She is an active facilitator of the *Four Winds*, a newly formed open forum for infant clinicians in

ture, the rapid ongoing social changes and effects of unresolved conflicts of the past.



From the Red Cedar

Searching for Definition

by Hiram E. Fitzgerald, Executive Director & Lauren R. Barton

Working on the chapter dealing with the history of infant mental health for the forthcoming *WAIMH Handbook of Infant Mental Health* we were alerted to Zeanah's invitation (1998) to share reflections on how to define "infant mental health," as well as to debate whether this descriptor actually captures the full range of what people in the interdisciplinary field of infant mental health actually do. The fact that the call for definition appears so frequently is, perhaps, proof positive that the search for definition needs a more formal strategy for success than has been the case in the past. Indeed, Stott (1997) notes that members of the Illinois Affiliate often debate whether "mental health" should remain in the title of their association, and in fact, some WAIMH Affiliates do not reference infant mental health in their title, nor is it required by WAIMH of its Affiliates.

Early attempts to define infant mental health focused on issues related to systems modeling, social-emotional development, and caregiver-

infant relationships (Fitzgerald, 1985; Osofsky, 1995). Hoffman (1994) suggests ethical issues related to optimal development of infants and young children are essential ingredients of infant mental health and draws attention to six types of poverty that should reside within the domain of infant mental health (Hoffman, 1995). The six types are: "poverty of subsistence (food and shelter), poverty of protection (bad health systems, violence), poverty of affection (exploitive relationships), poverty of understanding (poor education), poverty of participation (marginalization of women, children, minorities), poverty of identity (due to forced migration, exile or imposed foreign values)." He defined eight "fronts of the mental health of early infancy" (Hoffman, 1995, p. 13) that span research, clinical, educational, and social policy settings and issues. Jordan (1997) notes that infant mental health specialists must take into account historical and cultural factors as they impact family life and gender role, if we are to understand the boundaries that envelop infants and toddlers in their cultural contexts. Lieberman (1998) proposed five principles of infant mental health that give perspective to the social-cultural context of infancy and the inner feelings generated by parents, children, and practitioners that emerge within the context of their therapeutic relationship.

Recently, Fitzgerald (1997) suggested that articles published in the

Infant Mental Health Journal (IMHJ) provide one perspective on the defining features of infant mental health. We recently completed analysis of 18 years of publications appearing in IMHJ and reported some of these findings (cultural context of authorship) in *The Signal* (Fitzgerald, 1997, 17-18). A full analysis will appear in our Handbook chapter. We categorized all articles into topics and themes. Topics refer to the specific content of an article, whereas theme represented a higher level categorization. For example, father-infant relationship would reflect a topic, but would be embedded within a broader theme of caregiver-infant interaction. If infant mental health was defined by the themes most represented in the main journal, then we would be a field concerned with IMH Services/IMH Field (31% of all articles—484 total articles), caregiver-infant interactions (24%), conditions placing infants at risk (22%), and infant development outcomes (10%). If we defined infant mental health by the topics that appear in the journal, then we would be a field that was losing interest in prematurity/low birth weight (36 total articles, but only 7 in the past 6 years), and fathers (15 articles, 2 in the past 6 years); and gaining interest in maternal depression (24 articles, 15 in the last 6 years), attachment (59 articles, only 7 appeared in the first 6 volumes), parent education (24 articles, 20 in the past six years), cognitive development (25 articles, 18 in the past 6 years) and substance abuse (14 articles, all in the past 6 years). On the other hand, social-emotional development, IMH services, assessment issues, and parent

perceptions/attitudes are relatively stable topics over the 18 years of publication.

Where does one find discussions about the definition of infant mental health? Look no further. Note that all of the citations in this article, with one exception, are to publications in *The Signal*. It is significant that the publication devoting greatest space to the question, "What is infant mental health," is WAIMH's newsletter. Perhaps it is time to bring closure to "Reflections on Infant Mental Health" (Zeanah, 1998) by producing a systematic definition of the field; otherwise, we will continue to struggle with "who we are and what we are about." (Zeanah, 1998).

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IRCCS Stella Maris Pisa University

Diagnostic Evaluation on Infant Psychiatry

International workshop on
Zero-to-three

PISA, ITALY 29-30 JANUARY 1999

Ammanniti M, Cordeiro M, De Chateau P, Fava Viziello G, Guedeney A, Fenichel E, Lasa A, Levi G, Palacio Espasa F, Pfanner P, participants.

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Program

Friday 29th January 1999

- 9.00** Opening Ceremony
Introduction and presentation Chairman: G. Levi
- 9.30** P. Pfanner : *Early Infant and Childhood Psychiatry—New evolutionary perspectives in childhood neuropsychiatry.*
- 9.50** P. de Chateau: *Mental Health in the young child: cultural aspects of diagnosis and classification processing.*
- 10.10** G.Cioni : *The contribution of actual developmental neurology to infant psychiatry.*
- 10.30** Discussion.
- 11.00** Coffee break.
- 11.30** E. Fenichel: *The Diagnostic Classification Zero-to-three: history and development.*
- 11.50** M.J. Cordeiro: *Considerations on clinical application of the classification Zero-to-three.*
- 12.10** A. Guedeney: *Introduction to Discussion.*
- 12.30** Discussion.
- 13.00** Lunch.
- 14.30-17.00** Panels: *discussion of clinical cases and presentation of videotapes.*
- Group A:** Discussants: M. Ammanniti & E. Fenichel.

Group B: Discussant: A. Fabbri & A. Guedeney.

Group C: Discussants: G. Fava-Vizziello & F. Palacio-Espasa.

Group D: Discussant: S. Maestro & M.J. Cordeiro.

Group E: Discussant: R. Tancredi & A. Lasa.

Group F: Discussant: P. Bernabei & P. De Chateau.

18-19 Posters Session

20.30 Social Dinner

Saturday 30th January 1999

8.30-9.30 Session of Communication.

9.30 (Round table): Chairman M. Marcheschi & G. Fava-Vizziello: *Infant psychopathology: methodological problems for clinical diagnosis in European countries.*

M. Cordeiro (Portugal); A. Guedeney (France); A. Lasa (Spain); F. Muratori (Italy); P. de Chateau (Holland), P. Scheer (Austria).

10.45 Coffee Break.

11.15 E. Fenichel & F. Palacio Espasa : "Acquired indication and future perspectives".

12.15 Discussion.

13.00 Conclusion of Conference.



Do Parents Really Matter?

Judith Rich Harris, a writer of textbooks on developmental psychology, argues in her book, *The Nurture Assumption: Why Children Turn Out the Way They Do*, (Free Press, 1998) that "parents matter less than you think and peers matter more."

Jerome Kagan, a psychologist at Harvard University has emerged as a spokesman for the theory that parents do matter. Here we present, by permission, excerpts from an article by Dr. Kagan published in *The Boston Sunday Globe*, September 9, 1998.

The chief claim in *The Nurture Assumption*—that parents exert a minor influence and peers a major influence on a child's development, ignores important facts, ones that are inconsistent with this new theory's own conclusions. Indeed, there is ample evidence that, for better or worse, parents do shape their children.

Consider, for example, that the best predictor of a child's verbal talent is the frequency with which the parents talk and read to the child. A verbally talented child is more likely to get better grades in school and, therefore, a little more likely to attend a better college. That, in turn, makes it more likely that in adulthood he or she will land a better job.

Moreover, a parent's education (whether they are, for example, a high school dropout or a college graduate) can indicate how their child will fare in the world. Educational attainment, which is related to their child rearing practices, predicts, among other things, the probability of aggressive behavior and the likelihood of psychiatric problems when these children become adults.

The behavior and moods of 6-month-old infants are very similar, whatever their parents' level of education. By age 5 or 6 years, children's psychological differences are not at all subtle because each has been socialized differently.

That explains why a 6-year-old raised in New England will be very different from a 6-year-old raised in Malaysia, Uganda or the southern tip of Argentina. The reason is that they experience different child-rearing practices by their parents . . .

Still another illustration of the power of parents is seen in the fact that many young children who were orphaned and made homeless by war retain the cognitive and social skills they failed to develop during their period of privation—if they are adopted by nurturing families . . .

Although parents clearly do matter, it is often hard to measure just how. Parental influences are subtle, complex and, at the moment, very difficult to measure objectively. One of the most important processes has been called identification. Children assume that some of the qualities of their parents belong to them and, as a result, they experience the emotions that would follow that belief.

A girl with a competent, well-liked mother feels pride because she is identified with a parent who has desirable characteristics and she will carry that pride through adolescence. By contrast, the child with a parent who is incompetent, impulsive, drinks too much and is not liked by neighbors is likely to carry shame into adolescence and adulthood . . .

Every parent presents him or herself as a model for their children in a

way that has extraordinary influence on the child's growing personality. . . .

Unfortunately, a good deal of the evidence cited to support the idea that parents don't matter much is based on questionnaires in which people are asked to describe themselves. They respond to such questions as: "Do you like parties?"; "Are you afraid to take risks?"; "Do you prefer to be alone or with friends?"; and do you worry a lot?" But this source of evidence is too crude to capture a child's pattern of identification with parents. Indeed, such questionnaire evidence yields answers that have a special quality. For example, when a questionnaire is used to get information from parents, the estimated degree of genetic influences on the childhood trait of shyness increases as the child grows older. But when the evidence comes from actual observation of the child at home or in the laboratory, the estimate decreases. The direct observations are probably more accurate reflections than the parents' descriptions.

Put simply, reliance on questionnaires as a strategy to evaluate parental influences is a little like trying to understand the galaxies with the naked eye, without the advantages of a telescope. For this reason, the claim that parents are relatively unimportant is premature. . . .

But what about the claim that friends—peers—have a significant effect on the child's personality? This notion, too, is vulnerable.

Peers do not begin to shape a child's personality until they are 7 or 8 years old. Scientific studies of children who have been followed from infancy to late adolescence or adulthood reveal that the foundation of many adult personality traits—including a desire to do well in school, sociability, conformance to authority, and introversion—take root by age 7, (continued on page 28)

News & Views

Training Opportunities

United States

February 27, 1999. Chicago, Illinois, Institute for Clinical Social Work, *Relationships Matter: Rethinking Development*. Key speaker is Alan Sroufe, Ph.D. For information: The Institute for Clinical Social Work, 312-726-8480, email: ecsw@icsw.com

May 4-7, 1999. Reno, Nevada, *International Parent to Parent Conference*. Acknowledges and celebrates Parent to Parent models and philosophies of best supports and practices for families and people with disabilities. For information contact Cheryl Dinnell at 702-784-4921 x 2352, or email: cdinnell@scs.unr.edu

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May 16-18, 1999. *Michigan Association for Infant Mental Health*.

Annual conference: "Nurturing Infants and Families: Examining and Enriching Our Roles." Presenters include Ross Park, Ph.D. Harvard University, Alexa Canaday, MD, Children's Hospital, Detroit; Tammy Mann, Ph.D., National Center for Infants, Toddlers and Families, Washington, D.C.; Kadeja Johnson, Ph.D. University of California, San Francisco. For information call: MI-AIMH Central Office: (517)-432-3793.

June 14-18, 1999. Syracuse, New York. *23rd Annual National Quality Infant/Toddler Caregiving Workshop*. Directed by Alice Honig. For information call: 315-443-3273 or email: mshin02@syr.edu

October 18-19, 1999. Chicago, Illinois. *The Loyola Forum on the Child*. "Reclaiming Childhood: Shaping Policy for the Future." For information call: (312)-915-8567 or visit their web site: www.luc.edu/childforum

New Web Site:

Michael Trout's Infant-Parent Institute, in Illinois now has a web site: www.infant-parent.com

(Do Parents Really Matter? continued from page 27)

before friends have had any important effect. And most children select friends who share their interests, values and skills. . . .

Telling parents that they have little influence on their children, in light of the scientific evidence and their daily encounters with their children, is a little like declaring on a foggy September morning that all the trees have disappeared because you cannot see them.

Editor's Note: Thanks go to Everyday's Child, the newsletter of the Maine Association for Infant Mental Health for pointing out the article by Dr. Kagan.

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