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The self-regulating child: Converging evidence from psychoanalysis, infant research, and sociolinguistics

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Abstract

This paper takes up certain similarities between psychoanalysis, developmental psycholinguistics, and infant research with particular relationship to children's self-regulation. The point is made that these disciplines are currently moving toward agreement concerning the early social construction of the mind and its eventual privatization. Each depicts the progression from other- to self-regulation as a key dimension, one fraught with impressively complex dynamics. Further, each relies upon similar methodologies to arrive at its arguments. It is determined that the boundaries separating these three disciplines are man-made, and much can be gained by crossing them.

Key words: Psychoanalysis, Linguistics, Self-regulation, Child development

In this paper, we present empirical evidence from three theoretical paradigms in psychology—psychoanalysis, infant research, and sociolinguistics—whose complementarity pertaining to the phenomenon of self-regulation in children has not yet been sufficiently elaborated. Each paradigm implicates different and complementary aspects of the complex underpinnings of self-regulation and the progression from other- to self-regulation as crucial processes in human development.

The convergence of these three paradigms rests on the notion of the initial social construction of the mind and the inevitable developmental progression towards a more "privatized" (Vygotsky, 1987) mind. All three provide empirical evidence supporting the claim that the original patterning of mind cannot be adequately conceptualized as bounded by or contained within individuals. To borrow Wertsch's (1991) phrase, the early mind "extends beyond the skin"; it is a dyadically forged entity that eventually becomes localized within the individual after extensive psychological development has taken place. Therefore, the "other" in early development is an intrinsic extension of the infant's mind and self. The progression from other-regulation to self-regulation parallels the development of a separate mind and the evolution of the child into an autonomous individual. The research that follows indicates the need to conceptualize this progression as inherently bidirectional. Just as the other regulates the self, the self likewise regulates the other; the model of early regulation described is thus bidirectional rather than unidirectional. Our concept of self-regulation, as seen through the lens of these three theoretical paradigms, emphasizes a nonlinear, multiply determined, dynamic, and gradual acquisition of selfhood rather than one that is reducible to single factors or that is best understood from a single theoretical perspective.

We examine self-regulation in its broad form and consider these and other related definitions used by researchers working within developmental approaches, with an eye towards psychoanalytic and clinical implications. We also offer a psychoanalytic conceptualization of self-regulation and articulate its interdigitation with empirical research.

The Concept of Self-Regulation

The concept of self-regulation as used in much contemporary parlance is divorced from its intellectual roots, which are in the areas of infant attachment, the psychology of language and thought, and the neurophysiology of behavior. Some important interpretations of this concept emphasize its definition as structure or mechanism (Greenspan, 1979), function (Vygotsky, 1962, 1978), de-

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velopmental aim for a particular phase (Gedo, 1979), relational process (Lichtenberg, 1983; Stern, 1985), and biopsychological principle (Emde, 1988).

We have combined the psychodynamic contributions with an empirically sound developmental psychology to emphasize the priority of the early social milieu in the ontogenesis of mind and selfhood. For example, the Piagetian Bärbel Inhelder recognized the centrality of self-regulatory principles in a definition that stresses their generality and universality:

> the regulatory systems are found on all levels of the organism's functioning, right from the genome up to psychological behaviors; thus, they appear to be among the most general characteristics of the organism. Self-regulations seem to constitute at the same time one of the most universal characteristics of life and the most general mechanisms to be found in both organic and cognitive behaviors. (1971, p. 154)

The common denominator and key point is that a psychophysiologically based affective core (Emde, 1983; Wilson and Malatesta, 1989) assures crucial early continuities of selfhood and identity in the face of ongoing internal reorganization and external flux. As such, the core self underlies any individual cognitive-affective expressions throughout the life cycle. Central to the formation and integrity of this affective core is a psychobiological systems principle of adaptation. Self-regulation of this affective core originally emerges in the context of the early tie to a caregiver within a mutually regulating dyad and then evolves along with the maturation of emotional and cognitive abilities and processes. This evolution is facilitated by the dynamics of language acquisition, the interiorization of social speech (Vygotsky, 1987), and its transformation into inner speech. Such an expansion of the symbolic function accompanies a shift away from profound dependence on the caregiver for early regulation to more individuated ways of autonomous self-regulation. Sander (1964, 1980) provided one illustrative model of this process in his discussion of the epigenetic sequence of adaptive issues. The joint tasks facing every caregiver–infant dyad include what Sander calls basic regulation, focalization, self-assertion, recognition, and self-constancy. Even though this sequence was further refined by subsequent sophisticated microanalytic research, it remains an early psychoanalytically informed model of mutual regulation grounded in direct observation that explicitly shifted from a linear cause–effect to a diachronic systems approach.

Successful self-regulation is easier to identify than "failures" of self-regulation because self-regulatory failures manifest themselves over an extended course of time. Radical changes in the average expectable environment (such as serious medical illness or sudden traumatic loss) can result in unmanageable anxiety or panic states or sleep disorders in people with no apparent previous psychopathology. Otherwise healthy patients who suffer acute trauma are quite different from those who exhibit ongoing characterological disturbances that are a chronic manifestation of self-regulatory failure. Over the course of the life span, failures of self-regulation can lead to a multitude of psychological and psychobiological difficulties, both acute and chronic (Emde, 1988) and encompassing both symptom and character. Thus, failures of self-regulation have been theoretically tied to a variety of psychopathologies, including the narcissistic personality (Kohut, 1977; Wilson, 1989), severe characterological opiate addiction (Khantzian, 1978), and borderline states (Grotstein, 1983).

We define failure of self-regulation as a superordinate concept comprising (a) the failure to accomplish the earliest and ongoing psychobiological aims of regulating the levels of stimulation, arousal, and attachment processes; (b) the emotional experiences that result from the interruptions in the flow of communicative actions or attachments to objects needed to perform such functions; and (c) the early maladaptive representations of self-in-interaction-with-other and their recurrent influence on later representations of self and other.

Our definition points to the question of what exactly is not regulated when self-regulation fails. This complex question is addressed as we tap the clinical and research literature of psychoanalytic theory, infant research and human attachment, and the dynamics of language acquisition.

Multiple streams of evidence are utilized, both observational and reconstructive, in our psychoanalytic formulations. Much of psychoanalytic theory is derived from a retrodictive rather than predictive position. In striving to make sense of human experience over time, hindsight is 20/20—conveying a sense of inevitability gleaned from looking backwards over the course of life already lived as opposed to the ambiguity of possibilities in a life still to come. Our definition of self-regulation stresses the necessity of integrating (or at least reconciling) the "reconstructed child" with the "observed child" known through the evidence gathered outside of the clinical situation. The reconstructed child tends to be adultomorphized and pathomorphized (Peterfreund, 1978). The more recent emphasis on observation adds a necessary corrective by emphasizing normal development, clarifying our view of how children develop along both normal and abnormal pathways.

Self-Regulation—Towards an Integrative Approach

Psychoanalytic theory

Psychoanalytic instinct theorists stress the importance of gradients of state regulation present in drives and the achievement of homeostatic states (e.g., along the three polarized axes of instinctual life Freud outlined in 1915:

pleasure/unpleasure, activity/passivity, and subject/object). However, instinct theory lacks an elaboration of the multidimensional role of the object and a provision for the importance of early object relations. Instinct theory does not satisfactorily address the early social embeddedness of the infant, through which self-regulation of internal states progresses from a dyadic to an individuated frame. The self-regulating system in libido theory is a system enclosed within the boundaries of an individual psyche, consisting of instincts and their derivatives striving for homeostasis. The concept of an open system allows us to move past psychoeconomics to study how a caregiver with specific mature psychological capacities regulates and is in turn regulated by the inner world of a child with less advanced abilities.

Early object relations are crucial in the establishment of self-regulatory processes in the context of primary object relatedness, acquisition of representations and early forms of symbolic functioning, and the emergence of affectivity. Psychoanalysts can no longer treat the earliest stages of infancy as "objectless." Dyadic phasic synchronies (Emde & Robinson, 1979) establish the macro- and microrhythms that regulate infants' states from the time of birth. When intermittent or chronic failures of self-regulation occur, the child usually seeks external sources of regulation to accomplish the biopsychological task that it cannot master on its own. Spitz (1946) referred to a similar phenomenon in speaking of anaclitic defenses, whereby the child copes with anxieties by making actual contact with the caregiver. Clinically, we see similar defensive object seeking in adult patients, particularly in many borderline and dependent personalities, that is triggered by signal anxiety and is directed against external and internal situations that carry the threat of a failure of self-regulation. Self and object representations also become colored by these early interactional prototypes. From the direct observation of infant–caregiver dyads, Beebe and Lachman (1988) concluded that interactions during the first 6 months establish the basis for the formation of representational capacities.

We have previously described two types of repetition of such early dyadically forged states, defined as symbolic and primal repetitions (Wilson & Malatesta, 1989), and have related them to classical concepts of transference. In psychotherapy, primal repetitions are duplications of early affective interactive constellations, expressed as a medley of archaic transferences (to borrow the evocative term introduced by Gedo, 1979). Symbolic repetitions, however, tend to be mediated by higher level psychological processes that obscure their origin. The prevalence of certain negative affects can be understood as signals of developmental misattunement (Stern, 1985) between caregiver and infant. These misattunements can have dire short-term effects on attention, stress and arousal level, affect modulation, and sleep/wake cycles and can shape and preempt important developmental achievements over the long term (Freud, 1970). In adulthood, repetition of such difficulties can lead to dramatic regressions to action-oriented modes of functioning, panic-stricken object seeking, and attempts to cope via primitive enactments. The manifestations and repercussions of self-regulatory difficulties can and do occur on psychological, interpersonal, and biological levels, challenging artificial distinctions between these domains.

We link psychoanalytic theory with some empirically tried and tested findings on human development. To provide a framework for data and theory that can support this integration, we outline some of the central organizing assumptions that have guided recent psychoanalytic thought on the processes underlying self-regulation.

1. Data are accepted from many converging sources both inside and outside the clinical situation.
2. Our definition of self-regulation compels us to move beyond such absolute dichotomies as nature and nurture, cognition and affect, and mind and brain.
3. We see that the emergence of explanatory metaphors beyond those of drive and psychic energy provides us with a more flexible account of behavioral, motivational, and cognitive aspects of psychological functioning. Motivation, in particular, is no longer reducible to libidinal or aggressive impulses. Although the central notions of psychoanalytic theory, such as regression to fixation, instinctual behavior as a biologically based and environmentally supported motivational system, psychic determinism, and the essential motivational role of pleasure and unpleasure, are retained, they have been amplified and further developed, unconstricted by the limitations of drive theory.
4. Self-regulation and its failures can be viewed as conflictual, with roots predating language acquisition but with branches extending throughout the entire scope of psychological functioning.

Infant research

In his discussion of Lichtenberg's (1983) book, which examines the implications of infant research for psychoanalysis, Gedo (1986) pointed out that "those findings of this corpus of scientific work about which consensus has been reached challenge the adequacy of every prominent psychoanalytic schema about early development, not merely the traditional Freudian one" (p. 161). Taking up the theoretical challenge implicit in this statement, we examine some relevant data yielded by infant research, with particular emphasis on studies dealing with the dyadic processes of human attachment, and continue with an account of recent work in the area of emotions and early dyadic developmental attunement.

Many clinicians have made use of infant research in conceptualizing clinical theory. Evidence accruing from

observation of infants (Emde, 1988; Lichtenberg, 1983; Sander, 1980; Stern, 1983, 1985) and from clinical psychoanalysis (Basch, 1981, 1983; Gedo, 1979, 1981, 1984) suggests a developmental layering of early psychobiological processes, which are further specified as intimately involved with increasingly sophisticated communicative abilities. The "preverbal" domain lays down a cognitive-affective imprint. These and other clinicians have attempted to move on to this subsequent and necessary step in theory construction, implicating the role of such processes in the psychological disturbances seen in adult patients.

A substantial body of research now suggests that the mutually regulating caregiver–infant dyad can be treated as a specific manifestation of a universal human attachment system. Although attachment theorists pursue parsimonious models and do not assume many of the mental functions nor the overdetermination so central to a clinically useful explanation, their findings are nevertheless important in elucidating some aspects of early object relations.

Drawing on the work of ethologists dealing with the trauma and dislocation of post–World War II Europe, Bowlby (1959, 1969, 1973, 1980) posited an innate need for social interaction in newborns that shortly after birth becomes invested in a specific caregiver. This proximity seeking was considered evolutionary in origin and involved four interconnected systems controlling behavior: (a) an attachment system serving the maintenance of proximity and contact with caregivers, (b) a fear/wariness system to ensure escape from danger, (c) an exploratory system, and (d) an affiliative system. The exploratory and affiliative systems draw the infant into interactions with objects in the immediate social environment. Bowlby thought early experiences had a general crystallizing effect along the lines of the critically sensitive imprinting periods of development in animals addressed by Lorenz (1966). This view has been challenged (Lamb, Thompson, Gardner, & Cahrnov, 1985; Reed & Liederman, 1983) by those who suggest that early experience might have a differential effect, shaping specific aspects of development while leaving others unaffected. This view is similar to Freud's (1966) concept of parallel yet relatively independent "developmental lines."

Building on Bowlby's work, Ainsworth and colleagues (Ainsworth, 1967; Ainsworth, Blehar, Waters, & Wall, 1978; Ainsworth & Wittig, 1969) emphasized the quality of attachment rather than the mediating behavioral patterns. They defined attachment as an affective bond characterized by "strong emotions, not only security, anxiety, and anger, but also love, grief, jealousy, and, indeed, the full spectrum of emotion and feeling" (Ainsworth et al., 1978, p. 23). From her initial Uganda study (1967), she postulated three primary variables affecting the nature of mother–infant attachment: the amount of time a mother spent with her child, her degree of interest and involvement with the infant as defined by her capacities as an informant, and her attitudes toward breast feeding. Following this, Ainsworth developed the standardized Strange Situation, which elicited three distinct types of attachment, summarized by Maccoby (1980) as avoidant, securely attached, and resistant. Clarke-Stewart (1973), in following up Ainsworth's data, ranked attachment behaviors along a scale of intensity. Children with the strongest attachment had mothers who scored high on dimensions of responsiveness, positive emotion, and stimulation, all factors that promote adaptive self-regulation as elaborated by Hofer (1984). Children who are most securely attached can best negotiate the Strange Situation, which is a particular example of how a well-attuned attachment facilitates the transfer of self-regulatory capacities from caregiver to child.

In addition to the way caregivers propel an infant's cognitive development, researchers have also pointed to the actual physiological impact of attachment experiences. Tennes (1982) provided evidence that adrenocortical (hormonal) activity may be related both to the intensity and form of mother–infant interactions and may help to determine as well as be determined by these interactions. This finding is in accord with Hofer's (1984) work on object relationships as physiological regulators. Furthermore, differences in later hormone responsivity may be a function of the quality of these experiences. Timiras (1982) concluded that neuroendocrine events that occur during early development produce long-term effects on the psychophysiological competence of the adult. Numerous studies with animals have also indicated that a wide range of aversive experiences during early stages of ontogeny may lead to alterations in the neuroendocrine system (Hennessey & Levine, 1979; Hunt, 1979). Levine (1982) showed that surrogate-reared versus mother-reared rhesus infants display different patterns of physiological response to later separation experiences. Mason (1985), an ethologist, drew on the work of Ekman, a psychologist who studies the ontogenesis of emotions (Ekman, 1977; Ekman & Oster, 1979), to delineate the psychological and neurophysiological complexities of primate communication. He concluded that the individual rhesus monkey's basic stance toward the environment, as reflected in its physiological and behavioral responses to emotionally arousing situations, is profoundly influenced by its early affiliative experiences—in the eventual elaboration of coping behaviors, in the incorporation of memories, and in the development of expectancies.

Social referencing is a crucial component in the development of attachment and contingency perception. Fein-

man (1982) defined social referencing as a process characterized by the use of one's perception of other persons' interpretations of the situation to form one's own understanding of that situation. Much of this work originated with Mead's (1934) symbolic interactionism and generally supports the notion of a bias or preparedness in the infant for learning from and about the caregiver. The work on social referencing has certain aspects in common with Vygotsky's (1987) notion of the zone of proximal development; both help explain how children are able to make use of social objects to acquire deep and necessary knowledge of the world. Researchers studying social referencing (Campos, 1983; Hochschild, 1979; Lewis & Michalson, 1983) have emphasized the importance of the emotional interpretations of the referenced other in addition to more instrumental understanding. This approach brings the study of social referencing more directly in line with psychoanalytic object relations theory. Sorce and Emde (1981), Sorce, Emde, and Frank (1982), Campos and Sternberg (1980), and other researchers have found that both normal and impaired infants use a caregiver's emotional appraisal processes to resolve ambiguous situations when their own intrinsic appraisal processes fail.

Emotional development thus plays a critical role in the formation of attachment and in how we view the emergence of self-regulation. There has been a veritable explosion of research on the significance of early affective states for attachment and development. The subtle complexities that have been uncovered suggest that there is far more going on in this realm than had previously been thought, especially when attending only to the "reconstructed baby." Affectivity serves a valuable signalling (communicative) function within the attachment system prior to language acquisition. Kellerman (1983) argued for the social dimension of early affectivity, claiming that the development of distinct emotions necessarily involves an other, and by that definition, all emotions necessarily take objects as their aim. Demos (1983, 1984) described six repetitive types of infant–caregiver interactions that serve to shape an infant's "affective resonance." These qualitative patterns define quantitatively different levels of stimulation the child can experience, regulate emotional exchanges with the external world, and in turn prime the child to reenact the affective patterns of early positive and negative attachments. Lewis and Michalson (1983) concluded that parental identification and facilitation of emotions creates a richly meaningful awareness of the linkage between expressive behavior and internal state and is part and parcel of the attachment bond and, by extension, of adaptive self-regulation.

There is experimental evidence on the causal relationship between affectivity and variations in cognitive processing. Differential mood states modify cognitive functioning and order social cognitions and sociocultural expectations in general, rather than exclusively vice versa (Bower, 1981; Isen, 1984; Messick, 1965; Nasby & Yando, 1982; Shank & Abelson, 1977). Zivin (1982) referred to a biologically based and innate emotional expression as consisting of "hard" signals that prepare a child for entry into the social world where the more flexible "soft" signals gradually develop. Although some theorists question infants' capacity for affective experience during the reflexive hard-signal stage, Malatesta (1985) suggested that the limbic brain of infants is capable of conducting impulses and of generating motivational feeling states. She also suggested that emotion has evolved as a process by which central nervous system mechanisms involved in maintaining adaptive emotional homeostasis read out their condition through internally and externally directed signals. Evolutionary selection would favor infants who can most accurately signal their needs to a caretaker so that an intervention can occur to restore homeostatic balance. Wilson and Malatesta (1989) referred to earliest affects as "motivational vectors" arising out of "psychobiologically based organic feeling states" rather than the structures d'ensemble (Piaget, 1970) of cognitive developmentalists. Clinical observations also attest to the proclivity of early affective schemata to be repeated or recreated. Gaensbauer and Harmon (1982) studied infants subjected to physical abuse and neglect, chaotic and inconsistent caregiving, and frequent separations. These infants were at extreme ends of a continuum of reactions to separation—either shutting down and showing little or no reaction or becoming hypersensitive to the point of resisting any kind of soothing and comforting. Martin and Beezly (1977) also observed previously abused children in new caretaker placements and found negative cycles of relationships often being repeated.

The importance of rhythms and timing as a part of the communicational pattern between infant and caregiver for the subsequent regulation of more complex emotional states has been studied in some detail. This development includes the acquisition of important normative skills, such as the acquisition of a stable sense of time, of tolerance for a range of shifting affective states, and of capacities for realistic anticipation and postponement of need gratification. Kaye (1982) noted the various interactive patterned behaviors of infant and mother such as burst–pause cycles in nursing. Malatesta (1985) described how motoric maturation plays a crucial role in the initial expressive aspect of an infant's affective behaviors. She showed how "rhythmical stereotypies" such as rocking, waving, bouncing, or banging, serve as "timing mechanisms" and form the foundation for more complex motoric and expressive activities. In time, Malatesta noted,

these rhythmical stereotypies may be brought under the control of environmental requirements or sociocultural norms to produce more developmentally mature behavior. Malatesta (1980) demonstrated that during play sessions, mothers of young infants cycle repetitively through various "emotions routines," or patterns of activity and expression, in response to their infants' affective states. Emde (1980) found that mothers and other caregivers are able and prepared to communicate the full range of human emotional expression to infants 2 months and older. In turn, infants have a more heightened sensitivity to the emotional states of others than had previously been thought. Although neonatal contagion of crying has been repeatedly demonstrated (Sagi & Hoffman, 1976; Simner, 1971), infants do not cry to the sound of their own previously recorded cries (Martin & Clark, 1982), pointing to a keen discrimination and tuned-in-ness to others and, to some extent, a built-in self-regulatory function. If a child was not able to resist the contagion of its own affective state, particularly if the state is aversive, it could conceivably become physiologically toxic. Although there is some built-in propensity for self-regulation, this propensity initially requires the presence and support of others. Ekman (1977) described various ways of managing and controlling affective expression. He suggested that the control of what he terms *intensity, duration,* and *density factors* of affectivity may be the most troublesome for infants (who tend to amplify or compound these). Therefore, infants are highly dependent upon caregivers to soothe and modulate these potential sources of overstimulation and vulnerability.

In his pioneering work on the "dance of attunement," Stern (1977, 1983, 1985) proposed three types of "self-with-other" schemata (distinct from schemata of self and schemata of other), state-sharing, state-transforming, and state-complementing, conceived as innate constitutional endowments intrinsically responsive to the actions of another. In addition to overall arousal, Stern discussed a number of externally regulated self-experiences, such as affect intensity, security of attachment, affect categorization, attention, curiosity, cognitive engagement, and somatic states. In this framework, the experience of being with a self-regulating other is a lived episode that is an example of "emotional event knowledge" that later will form what Stern refers to as *RIGs* (representations of interactions that have been internalized), and "the activation of different RIGs can influence different regulatory functions, ranging from the biological and physiological to the psychic" (Stern, 1985, p. 111).

In studying failures of self-regulation, animal models serve as a natural laboratory for studying the dynamics of attachment processes and provide correlates to human experience of self-regulatory breakdown. Kaufman (1982) argued that most primate research models the situation of human "object loss": sequelae of trauma, stress, and the predisposition to subsequent psychopathology, anxiety, and depression.

The nature of nonverbal signaling in primates points to the importance of paraverbal communication in humans in the establishment of a secure attachment and subsequent internalization of self-regulatory capacities. Hinde (1985) described how most primate signaling ranges from pure expression of internal feeling states with no regard for the recipient to "negotiated" communications, which are interactive and partly determined by the anticipated response. This description parallels the identification by Stern (1985) and others of both expressive and intentional aspects of human infant communication (also see Vygotsky, 1987, and Bruner, 1983).

Much of this and related research has been incorporated and extended in Hofer's (1980, 1984) work, which encompassed both human and animal attachment systems and organizes self-regulatory dynamics along a continuum. He built on a description of behavioral regulation in human and primate infants by viewing object relationships as regulators and demonstrated how mutuality of regulation can be introduced into models of symbiosis, which incorporate hidden processes that can become visible and even exaggerated when attachment is disrupted.

Hofer's theory of affects spans neuroanatomical to subjective experience and implies a continuum between them. Affective experiences are higher order organizers of approach and avoidance behaviors, which in turn organize the level of arousal. Stimulation maintained at low (approach) levels promotes ongoing regulation that serves as a building block for positive affects. In turn, positive affects underlie the capacity to engage in exploratory behaviors and the learning of species-specific behaviors, whereas higher (avoidance) levels of stimulation often follow separation.

Overall, research demonstrates that success and failure of the various forms of regulation is impressively complex and hinges on a number of factors that are only now being scientifically investigated. Clinical vulnerability and potential for reenactment of failures within these dyadic subprocesses cannot be underestimated. Yet these vitally important but virtually invisible subprocesses are often neglected in developmental theories based on clinical reconstruction of adults in treatment because these processes can be extremely subtle and nonverbal and are usually outside the person's subjectively accessible sphere of awareness.

Although the emergence of the patterns of self-regulation can precede language acquisition in the developmental course, they shape and are in turn shaped by subsequent linguistic maturation in important ways. Language acquisition is fraught with particular conflicts (Wilson & Weinstein, in press) intimately associated with the en-

tirety of the development of mind and object relations. Most developmentalists who study language acquisition emphasize various cognitive invariants and linguistic capacities and do not consider the conflicted motivations of the child who enters this new domain. We therefore examine the multifaceted context of language acquisition to assess its relevance for specifying phenomena of self-regulation.

Language acquisition and self-regulation

Although sociolinguistics and the pragmatics of language use have recently become the focus of attention in American psychology, such considerations have dominated Russian psychology over the last century. In many ways, Russian linguistics has addressed many of the questions that American psychologists are just beginning to ask and answer. The role of language in the development of mental functions and in the child's introduction to culture and "cultural negotiations" is among these topics. Both Lev Vygotsky and Alexander Luria, two of the premiere Russian psychologists of the 20th century, focus on how language and thought are instrumental for self-regulation—Vygotsky primarily from a psychological perspective and Luria from a more biopsychological one. Luria (1961, 1981) proposed a four-stage model of this relationship: (a) language produced by another person regulates the self, (b) the self regulates the external person through language use, (c) one's own language is used to regulate the self, and (d) language becomes internalized and becomes something akin to a guiding structure that continues the regulatory role over time and place. Luria actually posited a progression from spinal reflexive behaviors in the child to the emergence of inner speech as a means of self-regulation. Although this view has been challenged (Miller, Shelton, & Flavell, 1970), Maccoby (1983) demonstrated that while learning to speak, preschool children improve rapidly in their capacity to inhibit movements. Before this time, children can inhibit movement on the basis of an external signal more easily than they can exercise voluntary control without such a signal.

Vygotsky (1987), Luria's mentor and later colleague, argued that all psychological processes are originally shared social processes that gradually become internalized. Bruner (1983), Vygotsky's ardent advocate in American psychology, commented that a child's language is "the means for interpreting and regulating the culture. The interpreting and negotiating start the moment the infant enters the human scene. It is at this stage of interpretation and negotiation that language acquisition is acted out" (p. 24). Vygotsky viewed the progression from other-regulation to self-regulation as occurring within the context of all social activity and interpersonal interaction. His emphasis on the centrality of internalization in this progression is quite similar to Schafer's more familiar psychoanalytic definition of internalization as "those processes by which the subject transforms real or imagined regulatory interactions with his environment, and real or imagined characteristics of his environment, into inner regulations and characteristics" (Schafer, 1968, p. 9).

Thus, the fate of internalization is inextricably tied to the development of self-regulation. Vygotsky introduced the concept of the zone of proximal development (ZPD) to describe the differential competencies displayed when alone as opposed to when in the presence of a regulating other. In his words, the ZPD is "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving *under adult guidance or in collaboration with more capable peers* [italics added]" (Vygotsky, 1978, p. 78). Thus, individuals in the early social milieu act almost as prosthetic devices facilitating the creation of the child's mind. Vygotsky emphasized the primacy of linguistic skills in the coconstruction of the ZPD and the capacities for self-regulation thereby established.

A central set of questions emerge regarding the role of language in the transformation of originally external actions into internal regulating and self-directing activities. The unfolding of language as a regulatory phenomenon progresses from the interpsychological to the intrapsychological plane. As Vygotsky pointed out, children take a major step towards goal-directed actions when they can regulate themselves through inner speech in the same way that adults have previously regulated them through their directive speech. The initial steps the child makes towards self-regulatory activity is through social speech made internal, which goes through phases. On the way to thought, which Vygotsky terms inner speech, social speech goes "underground," passing through a phase of egocentric speech that represents the first true step of self-regulatory language use because the child talks out loud, not to others but to him- or herself. In this way, Vygotsky distinguishes between the end points of social speech (speech directed at others) and inner speech (speech directed to the self, which is phonetically silent). These end points exist along a gradient from public to private and serve markedly different purposes.

Making clinical sense of this research requires a shift in context. The dynamic context within which language is acquired must be understood within the nexus of primary object relationships, their anxieties, and their conflicts. Stern (1985) pointed out that wishing, defensive activity, and the deepest symbiotic attachment between infant and caregiver are conceptually plausible only with the acquisition of language capabilities. The acquisition of language occurs in the context of the conflicts of early childhood (e.g., fear of loss of love, loss of the object, moral anxiety, or fragmentation of the self) and must reflect the ways in which such conflicts are defended

against. Thus, rather than being a simple case of conflict-free functioning or a sheer cognitive skill, language acquisition reflects the same psychodynamics of early conflicted object relations as do such frequently studied contemporaneous phenomena as separation or gender identity consolidation.

Bruner (1983, 1986) carefully studied the writings of the Soviet psychologists and proposed that a Language Acquisition Support System (LASS) is a necessary complement to Chomsky's (1957, 1959, 1975) Language Acquisition Device (LAD) in the child's development of language. One of the principle components of the LASS is what Bruner terms a *format,* defined as a "standardized, initially microcosmic interaction pattern between an adult and an infant that contains the demarcated roles that eventually become reversible" (Bruner, 1983, pp. 120–121). Many of the prelinguistic caregiver–infant interaction patterns fit this definition. Bruner described formats as playful, gamelike, and scriptlike, as containing both deep and surface structure, and as imbued with canonical cultural implications. These formats can be incorporated into larger interactive routines and may therefore develop a hierarchical structure. Over time, the child becomes increasingly abstracted from experience, and routines become more readily transposable or detachable from their original contexts. All of these characteristics of the LASS are in the service of more intricately regulated and symbolized cognitive, social, and emotional activities.

The literature on language acquisition supports our contention that the categorical, semantic meanings of linguistic utterances are not a fully reliable avenue to the psychological experience of the speaker—deeper structural factors that can be identified in narratives may provide better clues to any maladaptive formats at work under the surface. Bruner (1986) proposed a narrative form of thinking as distinct from a categorical (also called paradigmatic) form. The narrative form emerges earlier in development and is therefore closer to evoking and expressing affectively charged formats. Slobin (1973) showed convincingly that there are prototypical ways in which children experience the world and that these prototypes are encoded in basic grammatical forms within a particular language. As Bickerton (1981) put it, children are "bioprogrammed" to perceive particular qualitative distinctions in real world events as well as the linguistic distinctions that correspond to them—including the distinction between state and process or intermittent and continuous.

Whereas earliest linguistic competencies are more or less directly linked with self-regulation, more advanced forms of language use, such as studied by pragmatics, require a deeper analysis to grasp their relationship to self-regulatory functioning. The emergence of language capabilities presents the child with an advanced form of representation for new and varied psychological dynamic motivations that may be congruent with an earlier stream of psychobiological motivation but also divergent from it. With the acquisition of lexical skills, experience is fractured into two streams, one that is represented by language and one that remains closely tied to actual experience but is unrepresented by language. However, these two streams can be bridged. One role of the trope called metaphor, for example, is to straddle both domains to be meaningful and evocative. Prosodic elements of language (e.g., rhythm and tonality) provide another example of how both these streams can be bridged.

Some data suggest that the situation may be even more complicated than this. The formats and routines described by Bruner are themselves fraught with potential danger for a child, as even very young children can have severe conflict over nuances of other-regulation; the child seems to prefer the regulation carried by sensitive and attuned routines and formats rather than when it is carried by the semantics of the word. For instance, in *Narratives From the Crib* (Nelson, 1989), a series of studies of the monologue narratives of a 2-year-old child, Watson (1989) noted that many of the child's monologues were oriented towards self-regulation of internal states, particularly around such conflicted activities as separations, reunions and farewells, and other anticipated traumatic experiences. Usually regulated under the auspices of a *dialogue* with her father, when alone she attempted self-regulation through these monologues before sleeping. Her father typically accomplished this not by direct reference to that of which she was afraid but rather by intuitively providing indirect yet articulated forms for her diffuse and intense anxiety and affect, which Watson calls providing a "choice routine." Such choice routines can also break down, however, when explicit reference to it is brought to the child's attention; when regulation becomes explicit, the child may resist. Thus, the child's use of language ties into but can also suppress conflicts in a way that may be a forerunner or early stage of defense activity.

The dynamic context of language acquisition brings with it the imprint of self-regulatory activity. The narrative organization of language and thought in particular provides access to the early or archaic forms of mentation that are beyond recollection and are only partially communicable through the semantics of a word.

Conclusion

The psychoanalytic definition of self-regulation borrows from the general psychological one but is not equivalent to it. A more circumscribed psychoanalytic definition of self-regulation should be distinguished from a broader general psychological one. Yet, in both definitions, the principle of self-regulation attains a superordinate position that transcends simple explanation. In summing up

the findings of an interdisciplinary conference on self-regulation, Peters (1971) illustrated the broad or general definition, stating that in lieu of a simple definition, "there evolved a sense that self-regulation in the organism is best described as a dynamic process of adaptive functioning operating through a large number of individually distinct mechanisms which may be hierarchically arranged or classified" (p. 232).

Given this level of complexity, we have described the microprocesses that characterize self-regulation and its failures. The research evidence and theories from psychoanalysis, infant research, and sociolinguistics underscores the importance of earliest interpsychological bonds between caregivers and infants. These bonds are fundamental to the development of a firm psychobiological base undergirding later intrapsychic and interpersonal life. A separate, intrapsychic mind and self emerge from this early interindividual unity, which is supported by maturation and the progression from other- to self-regulation.

Psychoanalytic psychologists who accept object relations and self theory can integrate this developmental research into their understanding of clinical processes. For example, the analyst Lichtenberg (1983) showed how affects are integrated into a symbolic system during the second year of life as the major organizer of behavioral regulation for the infant. Thus, during what Lichtenberg calls the infant's Phase II, concern for the management of stimulation becomes focused upon the "intermental" (Wertsch, 1991) world of caretaker and child, which leads to the formation of affects and the affective core of the self-organization. Self- and other-regulation thus are pivotal concerns in the joint construction (much like Stern's [1983] affect attunements) of the earliest aspects of the infant's developing capacities of mind. The analyst Gedo (1979, 1981) recognized the importance of self-regulation in his hierarchical epigenetic model of self-organization. Our definition of self-regulation encompasses the psychopathology and adaptive failures that can arise from the lower modes of the epigenetic hierarchy he proposed, including self-regulation of internal states of tension and arousal and the avoidance of traumatic overstimulation as the overriding biopsychological tasks of the earliest modes.

In social science, disciplinary boundaries are human inventions not found in nature. Psychoanalysis, infant research, and developmental psycholinguistics have recently described from their perspectives the complex subprocesses of self-regulation and have taken the social construction of the early mind as a point of departure. Methodologically, each emphasizes (among other things) the need for empirical evidence, a respect for the person in a natural social ecological context, and a value placed on the role of laboratory research for real-life problems and vice versa. In the ever-evolving discipline of psychology, such an integrative orientation bears promise for the acquisition of new and germane ways of understanding people and clinical problems.

REFERENCES

Ainsworth, M. D. S. (1967). *Infancy in Uganda: Infant care and the growth of attachment.* Baltimore, MD.: Johns Hopkins University Press.

Ainsworth, M. D. S. (1979). Attachment as related to mother–infant interaction. In J. B. Rosenblatt, R. H. Hinde, C. Beer, & M. Bushnell (Eds.), *Advances in the study of behavior* (pp. 29–40). New York: Academic Press.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment.* Hillsdale, NJ: Erlbaum.

Ainsworth, M. D. S., & Wittig, B. (1969). Attachment and exploratory behavior in one-year olds in a strange situation. In B. M. Foss (Ed.), *Determinants of infant behavior* (pp. 111–136). New York: Wiley.

Basch, M. (1981). Psychoanalytic interpretation and cognitive transformation. *International Journal of Psychoanalysis, 61,* 151–175.

Basch, M. (1983). Empathic understanding: A review of the concept and some theoretical considerations. *Journal of the American Psychoanalytic Association, 31,* 101–127.

Beebe, B., & Lachman, F. (1988). The contribution of mother–infant mutual influence to the origins of self and object representations. *Psychoanalytic Psychology, 5,* 335–348.

Bickerton, D. (1981). *Roots of language.* Ann Arbor, MI: Karoma.

Bower, G. (1981). Mood and memory. *American Psychologist, 36,* 129–148.

Bowlby, J. (1959). The nature of the child's tie to his mother. *International Journal of Psychoanalysis, 39,* 350–373.

Bowlby, J. (1969). *Attachment and loss: Vol. 1. Attachment.* New York: Basic Books.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation.* New York: Basic Books.

Bowlby, J. (1980). *Attachment and loss: Vol. 3. Loss.* New York: Basic Books.

Bruner, J. (1983). *Child's talk: Learning to use language.* New York: Norton.

Bruner, J. (1986). *Actual minds, possible worlds.* Cambridge, MA: Harvard University Press.

Campos, J. J. (1983). The importance of affective communication in social referencing. *Merrill Palmer Quarterly, 29,* 83–87.

Campos, J. J., & Sternberg, C. (1980). Perception and appraisal of emotion: The onset of social referencing. In M. E. Lamb & L. R. Sherrod (Eds.), *Infant social cognition* (pp. 273–314). Hillsdale, NJ: Erlbaum.

Chomsky, N. (1957). *Syntactic structures.* The Hague: Mouton.

Chomsky, N. (1959). Review of verbal behavior by B. F. Skinner. *Language, 35,* 26–58.

Chomsky, N. (1975). *Reflections on language.* New York: Pantheon.

Clarke-Stewart, A. K. (1973). Interactions between mothers and their young children: Characteristics and consequences.

Monographs of the Society for Research in Child Development, 38 (6 & 7).

Demos, V. (1983). Infant research on affect and self-esteem. In J. E. Mack & S. L. Ablon (Eds.), *The development and sustenance of self-esteem in childhood* (pp. 45–78). New York: International Universities Press.

Demos, V. (1984). Empathy and affect. In J. L. Lichtenberg, M. Bornstein, & D. Silver (Eds.), *Empathy II* (pp. 9–34). Hillsdale, NJ: Analytic Press.

Ekman, P. (1977). Biological and cultural contributions to body and facial movement. In J. Blackling (Ed.), *The anthropology of the body* (pp. 39–84). London: Academic Press.

Ekman, P., & Oster, H. (1979). Facial expressions of emotion. *Annual Review of Psychology, 30,* 527–554.

Emde, R. (1980). Toward a psychoanalytic theory of affect. I. The organizational model and its propositions. In S. I. Greenspand & G. H. Pollack (Eds.), *The course of life* (Vol. 1, pp. 63–84). Bethesda, MD: National Institute of Mental Health Printing Office.

Emde, R. (1983). The prerepresentational self. *Psychoanalytic Study of the Child, 38,* 165–192.

Emde, R. (1988). Development terminable and interminable I and II. *International Journal of Psychoanalysis, 69,* 23–42, 283–296.

Emde, R., & Robinson. (1979). The first two months: Recent research in developmental psychobiology and the changing view of the newborn. In J. D. Noshpitz (Ed.), *Basic handbook of child psychiatry* (Vol. 1, pp. 72–105). New York: Basic Books.

Feinman, S. (1982). Social referencing in infancy. *Merrill Palmer Quarterly, 28,* 445–470.

Freud, A. (1966). *Writings of Anna Freud: Vol. 6. Normality and pathology in childhood: Assessments in development.* New York: International Universities Press.

Freud, A. (1970). The symptomology of childhood. *Psychoanalytic Study of the Child, 25,* 19–41.

Gaensbauer, T. J., & Harmon, R. J. (1982). Attachment behavior in abused/neglected and premature infants. In R. N. Emde & R. J. Harmons (Eds.), *The development of attachment and affiliative systems* (pp. 263–280). New York: Plenum Press.

Gedo, J. (1979). *Beyond interpretation: Toward a revised theory for psychoanalysis.* New York: International Universities Press.

Gedo, J. (1981). *Advances in clinical psychoanalysis.* New York: International Universities Press.

Gedo, J. (1984). *Psychoanalysis and its discontents.* New York: Guilford.

Gedo, J. (1986). *Conceptual issues in psychoanalysis.* Hillsdale, NJ: Analytic Press.

Greenspan, S. (1979). Intelligence and adaptation: An integration of psychoanalytic and Piagetian developmental psychology. *Psychological Issues, 47/48.* New York: International Universities Press.

Grotstein, J. (1983). A proposed revision of the psychoanalytic concept of primitive mental states. II. The borderline syndrome—Sect. I: Disorders of autistic safety and symbiotic relatedness. *Contemporary Psychoanalysis, 19,* 570–604.

Hennessy, J. W., & Levine, S. (1979). Stress, arousal and the pituitary–adrenal system: A psycho-endocrine hypothesis. In J. M. Sprague & A. N. Epstein (Eds.), *Progress in psychobiology and physiological psychology* (pp. 30–51). New York: Academic Press.

Hinde, R. A. (1985). Expression and negotiation. In G. Zivin (Ed.), *The development of expressive behavior: Biology–environment interactions* (pp. 30–51). New York: Academic Press.

Hochschild, A. R. (1979). Emotion work, feeling rules and social structure. *American Journal of Sociology, 85,* 551–575.

Hofer, M. A. (1980). *The roots of human behavior.* San Francisco: Freedman.

Hofer, M. A. (1984). Relationships as regulators: A psychobiologic perspective on bereavement. *Psychosomatic Medicine, 46,* 183–197.

Hunt, J. (1979). Psychological development: Early experience. *Annual Review of Psychology, 30,* 103–143.

Inhelder, B. (1971). The sensorimotor origins of knowledge. In D. Walcher & D. Peters (Eds.), *The development of self-regulatory mechanisms* (pp. 142–156). New York: Academic Press.

Isen, A. M. (1984). Toward understanding the role of affect in cognition. In R. Wyler & T. Srule (Eds.), *Handbook of social cognition* (pp. 179–235). Hillsdale, NJ: Erlbaum.

Kaufman, I. C. (1982). Animal models in developmental psychobiology. In R. N. Emde & R. J. Harmon (Eds.), *The development of attachment and affiliative systems* (pp. 43–46). New York: Plenum Press.

Kaye, K. (1982). *The mental and social life of babies.* Chicago: University of Chicago Press.

Kellerman, H. (1983). An epigenetic theory of emotions in early development. In R. Plutchik & H. Kellerman (Eds.), *Emotion: Theory research and experience* (Vol. 2, pp. 315–349). New York: Academic Press.

Khantzian, E. J. (1978). The ego, the self, and opiate addiction: Theoretical and treatment considerations. *International Review of Psychoanalysis, 5,* 189–198.

Kohut, H. (1977). *The restoration of the self.* New York: International Universities Press.

Lamb, M. E., Thompson, R. A., Gardner, W., & Cahrnov, E. L. (1985). *Infant–mother attachment: The origins and developmental significance of individual differences in strange situation behavior.* Hillsdale, NJ: Erlbaum.

Levine, S. (1982). Comparative and psychobiological perspectives on development. In W. A. Collins (Ed.), *The concept of development. Minnesota symposia on child psychology* (Vol. 15, pp. 29–53). Hillsdale, NJ: Erlbaum.

Lewis, M., & Michalson, L. (1983). *Children's emotions and moods: Developmental theory and measurement.* New York: Plenum Press.

Lichtenberg, J. (1983). *Psychoanalysis and infancy research.* Hillsdale, NJ: Analytic Press.

Lorenz, K. (1966). *On aggression.* New York: Harcourt, Brace and Jovanovich.

Luria, A. R. (1961). *The role of speech in the regulation of normal and abnormal behavior.* New York: Pergamon Press.

Luria, A. R. (1981). *Language and cognition.* New York: Wiley.

Maccoby, E. E. (1980). *Social development: Psychological growth and the parent–child relationship.* New York: Harcourt, Brace and Jovanovich.

Maccoby, E. E. (1983). Social–emotional development and response to stressors. In N. Gamezy & M. Rutter (Eds.), *Stress, coping and development in children* (pp. 217–234). New York: McGraw-Hill.

Malatesta, C. (1980). *Determinants of infant affect socialization: Age, sex of infant and maternal emotional traits.* Unpublished doctoral dissertation, Rutgers University, New Brunswick, NJ.

Malatesta, C. (1985). Developmental course of emotion expression in the human infant. In G. Zivin (Ed.), *The development of expressive behavior: Biology–environment interactions* (pp. 183–219). New York: Academic Press.

Martin, G. G., & Clark, R. D. (1982). Distress crying in neonates: Species and peer specificity. *Developmental Psychology, 18,* 3–9.

Martin, H. P., & Beezly, P. (1977). Observations of abused children. *Developmental Medical Clinical Neurology, 19,* 373–387.

Mason, W. A. (1985). Experiential influences on the development of expressive behavior in rhesus monkeys. In G. Zivin (Ed.), *The development of expressive behavior: Biology–environment interactions* (pp. 117–152). New York: Academic Press.

Mead, G. H. (1934). *Mind, self and society.* Chicago: University of Chicago Press.

Messick, S. (1965). The impact of negative affect on cognition and personality. In S. S. Tomkins & C. E. Izard (Eds.), *Affect, cognition and personality* (pp. 98–128). New York: Springer.

Miller, S. H., Shelton, J., & Flavell, J. H. (1970). A test of Luria's hypothesis concerning the development of verbal self-regulation. *Child Development, 41,* 651–665.

Nasby, W., & Yanko, R. (1982). Selective encoding and retrieval of affectively valent information. *Journal of Personality and Social Psychology, 43,* 1244–1255.

Nelson, K. (Ed.). (1989). *Narratives from the crib.* Cambridge, MA: Harvard University Press.

Peterfreund, E. (1978). Some critical comments on psychoanalytic conceptions of infancy. *International Review of Psychoanalysis, 59,* 427–441.

Peters, D. (1971). The development of self-regulatory mechanisms. In D. Walcher & D. Peters (Eds.), *The development of self-regulatory mechanisms* (pp. 231–238). New York: Academic Press.

Piaget, J. (1970). *Genetic epistomology.* New York: Norton.

Reed, G. L., & Leiderman, P. H. (1983). Is imprinting an appropriate model for human infant attachment? *International Journal of Behavioral Development, 6,* 51–69.

Sagi, A., & Hoffman, M. L. (1976). Empathic distress in the newborn. *Developmental Psychology, 12,* 175–176.

Sander, L. (1964). Adaptive relationships in early mother–child interactions. *Journal of the American Academy of Child Psychiatry, 3,* 231–164.

Sander, L. (1980). New knowledge about the infant from current research: Implications for psychoanalysis. *Journal of the American Psychoanalytic Association, 28,* 181–198.

Schafer, R. (1968). *Aspects of internalization.* New York: International Universities Press.

Shank, R. C., & Abelson, R. (1977). *Scripts, plans, goals and understanding.* Hillsdale, NJ: Erlbaum.

Simner, M. (1971). Newborn's response to the cry of another infant. *Developmental Psychology, 51,* 136–150.

Slobin, D. (1973). Cognitive prerequisites for the development of grammar. In C. A. Ferguson & D. Slobin (Eds.), *Studies of child language development* (pp. 175–208). New York: Holt, Rinehart & Winston.

Sorce, J. F., & Emde, R. N. (1981). Mother's presence is not enough: Effect of emotional availability on infant explorations. *Developmental Psychology, 17,* 474–488.

Sorce, J. F., Emde, R. N., & Frank, M. (1982). Maternal referencing in normal and Down's syndrome infants. In R. N. Emde & R. J. Harmons (Eds.), *The development of attachment and affiliative systems* (pp. 281–292). New York: Plenum Press.

Spitz, R. A. (1946). Anaclitic depression. In *Psychoanalytic study of the child* (Vol. 2, pp. 313–342). New York: International Universities Press.

Stern, D. N. (1977). *The first relationship: Infant and mother.* Cambridge, MA: Harvard University Press.

Stern, D. N. (1983). The early development of schemas of self, other, and self-with-other. In S. Kaplan (Ed.), *Reflections on self psychology* (pp. 49–84). New York: International Universities Press.

Stern, D. N. (1985). *The interpersonal world of the infant: A view from psychoanalysis and developmental psychology.* New York: Basic Books.

Tennes, K. (1982). The role of hormones in mother–infant transactions. In R. N. Emde & R. J. Harmon (Eds.), *The development of attachment and affiliative systems* (pp. 75–80). New York: Plenum Press.

Timiras, P. S. (1982). The timing of hormone signals in the orchestration of brain development. In R. N. Emde & R. J. Harmon (Eds.), *The development of attachment and affiliative systems* (pp. 47–63). New York: Plenum Press.

Vygotsky, L. (1962). *Thought and language.* Cambridge, MA: Massachusetts Institute of Technology Press.

Vygotsky, L. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Vygotsky, L. (1987). Thinking and speech. In R. Rieber & A. Carton (Eds.), *The collected works of L. V. Vygotsky* (Vol. 1, pp. 39–288). New York: Plenum Press.

Watson, R. (1989). Monologue, dialogue, and regulation. In K. Nelson (Ed.), *Narratives from the crib* (pp. 263–283). Cambridge, MA: Harvard University Press.

Wertsch, J. (1991). *Voices of the mind: A sociocultural approach to mediated action.* Cambridge, MA: Harvard University Press.

Wilson, A. (1989). Levels of adaptation and narcissistic psychopathology. *Psychiatry, 52,* 218–236.

Wilson, A., & Malatesta, C. (1989). Affect and the compulsion to repeat: Freud's repetition compulsion revisited. *Psychoanalysis and Contemporary Thought, 12,* 243–289.

Wilson, A., & Weinstein, L. (in press). Language and the clinical process: Psychoanalytic and Vygotskian psychology, part II. *Journal of the American Psychoanalytic Association.*

Zivin, G. (1982). Watching the sands shift: Conceptualizing development of non-verbal mastery. In R. S. Feldman (Ed.), *The development of non-verbal communication in children* (pp. 63–98). New York: Springer.