

The Shadow of the Tsunami  
and the Growth of the  
Relational Mind



Philip M. Bromberg

With a Foreword by Allan Schore

During the phase in which I worked with my editor, John Kerr, his penetrating wisdom and understanding of my vision increased my ability to elucidate, across chapters, the coherent perspective on healing and growth which underlies the book's title. As with my first two books, his guidance and input was again invaluable, and once again I consider myself fortunate to have had him at my side.

I am grateful to Kate Hawes, Routledge's Publisher, for her faith in my work, and to the staff of skilled professionals who allowed the process of designing and producing the book to be so wonderfully collaborative. I especially want to thank Kristopher Spring, Associate Editor at Routledge, whose determination to overcome my ambivalence about undertaking a third book was the deciding factor in my choosing to do it. Kristopher's official title does not begin to convey the uniqueness of his dedication, the creative range of his mind, or the level of expertise he has provided in readying this book for its entrance into the world.

## Foreword<sup>1</sup>

*Allan Schore*

☞ This new book from Philip Bromberg is the third of a trilogy, following what have now become classics, *Standing in the Spaces* (1998a) and *Awakening the Dreamer* (2006a). These books have enhanced our understanding of trauma and illuminated its powerful interface with the mind/brain process of dissociation in shaping the relationship through which the deepest and most enduring healing and self-growth is achieved in treatment. In an even broader sense, Bromberg has enhanced our recognition that dissociation is intrinsic to the development of what is normal as well as pathological in being human. In the following pages the reader will note a significant expansion of Bromberg's ideas from these earlier volumes. This takes the form of not only a further clarification of the concepts he developed over the body of his earlier writings, but an even more extensive elaboration of the ways he uses these in his clinical work. Indeed the book is chock-full of rich clinical vignettes, written in an experience-near style that has gained him a reputation as perhaps the most evocative clinical writer of our times. But in addition, Bromberg has dramatically progressed in integrating psychology and biology into relational mind/brain/body conceptualizations of treatment. The subtitle of the very last chapter of his 2006a book was "Where psychoanalysis, cognitive science, and neuroscience overlap." There he began to incorporate contemporary neuroscience, including my own work, into the core of his clinical model. As you will soon see each and every chapter of this book contains relevant information from neuroscience.

The reader who is already familiar with not only Bromberg's previous work but also with my own will note there is a remarkable overlap

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between Bromberg's contributions to clinical psychoanalysis and mine in developmental neuropsychanalysis, a deep resonance between his theoretical concepts and my own work in Regulation Theory. A common theme of both of our writings is the problem of early developmental trauma and dissociation and their enduring impact on the mind/brain/body's capacity to interpersonally regulate affect, referred to in this book as "the shadow of the tsunami." On the surface, it may appear that we're exploring these problems from different perspectives, but at a deeper level we're both interested in the science *and* the art of psychotherapy (which happens to be the title of my next book). This common focus on the centrality of trauma and affect, which are both intrinsically biological phenomena, allows for a convergence of our perspectives on development, psychopathogenesis, and treatment. But we share more than just an intellectual commonality of our theories. In my review of his last book (Schore, 2007) I admitted a personal bias to his clinical style of working with patients, since it is so similar to my own. Since that time, our ongoing rich dialogues in a series of annual Affect Regulation conferences in New York City has significantly increased the interpenetration of our ideas into each other's work, and more importantly, has intensified a deep friendship.

This book is more than just a further elaboration of Bromberg's groundbreaking work on trauma and dissociation. Here he expands and broadens his clinical model and defines what he sees as the relational mechanism of therapeutic action common to the treatment of all patients. In fact he argues that we are now experiencing a paradigm shift in psychotherapy: from the primacy of cognition to the primacy of affect, from the primacy of content to the primacy of process and context, and thereby a shift away from the concept of "technique." In my writings and presentations I have described the same shift in paradigm (Schore, 2009d, 2011). My neuropsychanalytic perspective views the shift from conscious cognition to unconscious affect, and asserts that the relational change mechanism embedded in the therapeutic alliance acts not through the therapist's left brain explicitly delivering content interpretations to the patient's right brain, but through right-brain to right-brain affect communication and regulation processes. This book is dedicated to what that shift looks and feels like clinically, from the experience-near perspective of a relational model of treatment that impacts both the conscious and especially unconscious mind/brain/bodies of both members of the therapeutic relationship. Although it uses the terminology of contemporary psychoanalysis, this volume will be appreciated by the broader audience of psychodynamic clinicians

and indeed all psychologists, psychiatrists, social workers, and counselors practicing psychotherapy.

In his invitation to write this foreword Philip noted, "The length is up to you." He said this knowing that I am anything but brief in my writings. And so this foreword will contain four sections: the first on development, the next two on psychopathogenesis, and the last on psychotherapy. Following the format of my review of his last book I will describe in some detail not only his but my own work in these areas, including points of direct connections between his clinical model and my work in interpersonal neurobiology. In the last section on psychotherapy I shall discuss in more detail the neurobiological correlates of two major themes of this book: unconscious relational communications, and the psychotherapeutic change mechanism of "shrinking the shadow of the tsunami." In addition to acting as a commentary on Bromberg's ideas, this foreword also serves as a reader's guide of interpersonal neurobiology that can be accessed after reading Bromberg's remarkably evocative clinical descriptions.

### Development: Attachment and the Early Evolution of the Right Brain Core Self

In my review of *Awakening the Dreamer* (Schore, 2007) I noted Bromberg's active incorporation of advances in attachment theory and affective science into the core of his clinical model; he asserted:

The developmental achievement of a sense of self that is simultaneously fluid and robust depends on how well the capacity for affect regulation and affective competency has been achieved. . . . When these early patterns of interpersonal interaction are relatively successful, they create a stable foundation for relational affect regulation that is internalized as nonverbal and unconscious. Thus, further successful negotiation of interpersonal transactions at increasingly higher levels of self-development and interpersonal maturity is made possible. (Bromberg, 2006a, p. 32)

This developmental model appears in every chapter of this book, and it lies at the core of Bromberg's model of psychotherapeutic change. In this work he moves even more deeply into not only the affective dynamics of attachment, but into the interpersonal neurobiology of attachment. In chapter 5 he concludes:



The development of a mature capacity for affect regulation rests on a utilization of the natural dialectic, always operative, between auto-regulation and relational regulation. Schore (2003a, 2003b) makes it clear that the degree to which early relational bonds are internalized as stable and secure actually determines significant aspects of the brain's structure, especially in the right hemisphere. This in turn determines whether later in life an individual can utilize interactive regulation, such as in a psychotherapeutic relationship, when his own auto-regulatory mechanisms are not available.

In a number of works on Regulation Theory I have integrated current research, developmental data, and clinical observations to offer an interpersonal neurobiological model of attachment (Schore, 1994, 2001, 2002, 2003a, 2003b, 2009a, 2009b, 2009c, 2010, 2011). To summarize modern attachment theory (Schore & Schore, 2008), the essential task of the first year of human life is the creation of a secure attachment bond of emotional communication between the infant and the primary caregiver, and the subsequent expanded capacity for affect regulation. During spontaneous right-brain to right-brain visual-facial, auditory-prosodic, and tactile-proprioceptive emotionally charged attachment communications, the sensitive, psychobiologically attuned caregiver regulates, at an implicit level, the infant's states of arousal (Schore, 1994).

In order to enter into this communication, the mother must be psychobiologically attuned to the dynamic crescendos and decrescendos of the infant's bodily-based internal states of arousal. To effectively accomplish this interactive regulation, the mother must modulate nonoptimal high or low levels of stimulation which would induce supra-heightened or extremely reduced levels of arousal in the infant. In this mutually synchronized attunement of emotionally driven facial expression, prosodic vocalization, and kinesic behaviors, dynamically fluctuating moment-to-moment "state-sharing" represents an organized dialogue occurring within milliseconds, and it acts as an interactive matrix in which both partners match states and then simultaneously adjust their social attention, stimulation, and accelerating arousal in response to the partner's signals. Throughout this book Bromberg refers to "what Allan Schore calls right-brain to right-brain 'state-sharing'."

It is important to note that developmental research shows frequent moments of misattunement in the dyad, ruptures of the attachment bond (what Bromberg calls intersubjective collisions). In early development

especially after a state disruption or a transition between states, and this intervention allows for the development of self-regulation. The key to this beneficial interaction is the caregiver's capacity to monitor and regulate her own (especially negative) affect. In this essential regulatory pattern of "rupture and repair," the attuned "good enough" caregiver who induces a rupture of the attachment bond and thereby a stress response in her infant through a misattunement remedies the situation and helps her infant regulate his or her negative affect via her coparticipation in "interactive repair" (Bromberg's *intersubjective negotiations*). The process of re-experiencing positive affect following negative experience allows the child to learn that negative affect can be tolerated and that relational stress can be regulated.

At the end of the first year right lateralized cortical-subcortical circuits imprint, in implicit-procedural memory, an internal working model of attachment which encodes strategies of affect regulation that nonconsciously guide the individual through interpersonal contexts. Thus, emotion is initially externally regulated by the primary caregiver, but over the course of infancy it becomes increasingly internally regulated as a result of neurophysiological development. These adaptive capacities are central to self-regulation i.e., the ability to flexibly regulate the psychobiological states of emotions through interactions with other humans, interactive regulation in interconnected contexts, and without other humans, autoregulation in autonomous contexts. Attachment, the outcome of the child's genetically encoded biological (temperamental) predisposition and the particular caregiver environment, thus represents the regulation of biological synchronicity between and within organisms.

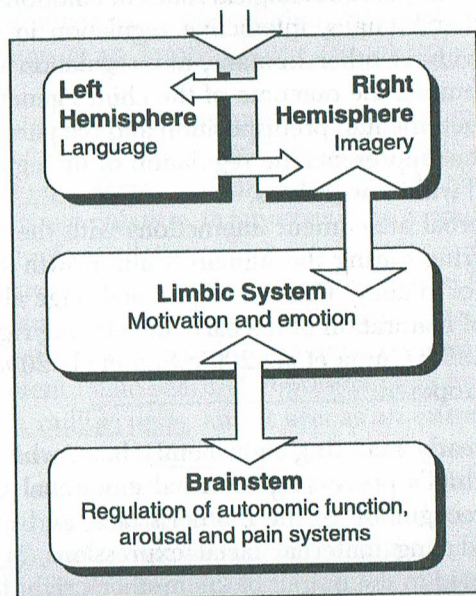
These nonverbal attachment interactions with the social environment are occurring during the human brain growth spurt (Dobbing & Sands, 1973) of infancy. This developmental stage also represents a critical period of maturation of the early developing right hemisphere (Chiron et al., 1997; Gupta et al., 2005; Sun et al., 2005). Almost two decades ago I proposed:

The infant's early maturing right hemisphere, which is dominant for the child's processing of visual emotional information, the infant's recognition of the mother's face, and the perception of arousal-inducing maternal facial expressions, is psychobiologically attuned to the output of the mother's right hemisphere, which is involved in the expression and processing of emotional information and in nonverbal communication. (Schore, 1994, p. 63, emphasis added)



A large body of experimental data now supports the developmental principle that implicit affective attachment interactions directly impact the experience-dependent maturation of “the emotional brain,” the right hemisphere (Ammaniti & Trentini, 2009; Schore, 1994, 2003a, 2003b, 2010; Siegel, 1999).

As Bromberg notes, bodily-based attachment transactions represent “a conversation between limbic systems” (Buck, 1994). These emotional communications imprint cortical-subcortical connections of the developing right brain, which is deeply connected into the emotion processing limbic system (see Figure F.1, vertical axis on right side). Basic research in developmental neuroscience now demonstrates: “The functional maturation of limbic circuits is significantly influenced by early socio-emotional experience” (Helmeke et al., 2001, p. 717). In addition, prenatal and postnatal interpersonal events also wire the connectivity of structures in the developing central nervous system (CNS) with the energy-expending sympathetic and energy-conserving parasympathetic branches of the evolving autonomic nervous system (ANS). There is now consensus that the right brain plays a greater role than the left in autonomic arousal and therefore the somatic aspects of



**Figure F.1** Right hemispheric connections into the limbic and autonomic nervous systems. Note the vertical axis on the right side of the figure.

emotional states. Confirming this interpersonal neurobiological model, a near-infrared spectroscopy study of infant–mother attachment at 12 months concludes: “Our results are in agreement with that of Schore (2000) who addressed the importance of the right hemisphere in the attachment system” (Minagawa-Kawai et al., 2009, p. 289).

Attachment transactions leave an enduring imprint of the developmental trajectory of the right brain, the locus of the core self. Neuroscientists now contend that throughout the lifespan: “The neural substrates of the *perception of voices, faces, gestures, smells and pheromones*, as evidenced by modern neuroimaging techniques, are characterized by a general pattern of right-hemispheric functional asymmetry” (Brancucci et al., 2009, p. 895, emphasis added). These adaptive perceptual processes are critical in all intimate contexts, including psychotherapy. At numerous points in this book Bromberg refers to the essential function of the *perception of state switches* in intersubjective communications, and the clinician’s “overarching attunement is to his contextualized perceptual experience.” He states that “perception is a relational process—a personal interaction between the mind of the individual and what is ‘out there.’” This “perception” is a rapid, implicit, nonconscious right brain function.

The highest corticolimbic centers of the right hemisphere, especially the orbitofrontal cortex, the locus of Bowlby’s attachment system, act as the brain’s most complex affect and stress regulatory system (Cerqueira et al., 2008; Schore, 1994, 2000). The regulatory system of the right orbitofrontal (ventromedial) cortex is known to have direct synaptic connections with the sympathetic and parasympathetic branches of the ANS that is responsible for the somatic aspects of affects (Hansel & von Kanel, 2008), with the right amygdala, the major subcortical fear center of the brain (Morris & Dolan, 2004), what Bromberg refers to as an affective “smoke detector” and an “early warning system,” and with the hypothalamus, and thereby the hypothalamic-pituitary-adrenal axis that controls stress. It is now accepted that via a right lateralized vagal circuit of emotion regulation, “the right hemisphere—including the right cortical and subcortical structures—would promote the efficient regulation of autonomic function via the source nuclei of the brain stem” (Porges et al., 1994, p. 175). Basic research also now establishes that optimal stress regulation is dependent on “right hemispheric specialization in regulating stress- and emotion-related processes” (Sullivan & Dufresne, 2006, p. 55). Describing the essential survival functions of this lateralized system Schutz (2005) notes:



The right hemisphere operates a distributed network for rapid responding to danger and other urgent problems. It preferentially processes environmental challenge, stress and pain and manages self-protective responses such as avoidance and escape. Emotionality is thus the right brain's "red phone," compelling the mind to handle urgent matters without delay. (p. 15)

### Psychopathogenesis: Negative Impact of Attachment Trauma and Dissociation on Developing Right Brain

In the very first chapter of this book Bromberg reintroduces the reader to a theme that runs throughout his previous writings: the negative impact of relational trauma on the developmental trajectory described above. In his last book he noted: "The reason that developmental trauma (also termed relational trauma) is of such significance is that it shapes the attachment patterns that establish what is to become a stable or unstable core self" (2006a, p. 6). In that work he linked trauma specifically to autonomic hyperarousal, "a chaotic and terrifying flooding of affect that can threaten to overwhelm sanity and imperil psychological survival" (p. 33), and described how dissociation is then automatically and immediately triggered as the fundamental defense to the arousal dysregulation of overwhelming affective states. Indeed, Bromberg's longstanding clinical explorations of the survival defense of dissociation have significantly altered the practice of psychoanalytic psychotherapy.

This psychopathological model appears as a central theme of the present volume. In the second chapter he states:

When the original "other" is a primary attachment figure, a parent or an other whose significance is interpersonally similar to a parent's, that person holds the power to destabilize the child's mental state by rupturing a relational connection that organizes the child's sense of self-continuity. In order to preserve the attachment connection and protect mental stability, the mind triggers a survival solution, dissociation, that allows the person to bypass the mentally disorganizing struggle to self-reflect without hope of relieving the pain and fear caused by the destabilization of selfhood.

Returning to my own work in this area, in contrast to the optimal growth-facilitating attachment scenario outlined above, in a relational

growth-inhibiting early environment the primary caregiver induces traumatic states of enduring negative affect in the child. This caregiver is inaccessible and reacts to her infant's expressions of emotions and stress inappropriately and/or rejectingly, and therefore shows minimal or unpredictable participation in the various types of arousal regulating processes. Instead of modulating she induces extreme levels of stimulation and arousal, very high in abuse and/or very low in neglect. And because she provides no interactive repair the infant's intense negative affective states last for long periods of time.

Interdisciplinary evidence now indicates that the infant's psychobiological reaction to trauma is comprised of two separate response patterns: hyperarousal and dissociation. In the initial hyperarousal stage, the maternal haven of safety suddenly becomes a source of threat, triggering an alarm or startle reaction of the infant's right hemisphere, the locus of both the attachment system and the fear motivational system. The maternal stressor activates the hypothalamic-pituitary-adrenal (HPA) stress axis, thereby eliciting a sudden increase of the energy-expending sympathetic component of the infant's autonomic nervous system, resulting in significantly elevated heart rate, blood pressure, and respiration, the somatic expressions of a dysregulated hypermetabolic psychobiological state of fear-terror.

But a second, later forming reaction to relational trauma is dissociation, in which the child disengages from stimuli in the external world—traumatized infants are observed to be "staring off into space with a glazed look." This parasympathetic dominant state of conservation-withdrawal occurs in helpless and hopeless stressful situations in which the individual becomes inhibited and strives to avoid attention in order to become "unseen" (Schoore, 1994, 2001). The dissociative metabolic shutdown state is a primary regulatory process, used throughout the life span, in which the stressed individual passively disengages in order to conserve energies, foster survival by the risky posture of "feigning death," and allow restitution of depleted resources by immobility. In this passive hypometabolic state heart rate, blood pressure, and respiration are decreased, while pain numbing and blunting endogenous opiates are elevated. It is this energy-conserving parasympathetic (vagal) mechanism that mediates the "profound detachment" of dissociation.

It is now established that there are in fact two parasympathetic vagal systems in the brainstem medulla. The ventral vagal complex rapidly regulates cardiac output to foster fluid engagement and disengagement with the social environment, and exhibits rapid and transitory patterns



associated with perceptive pain and unpleasantness, all aspects of a secure attachment bond of emotional communication. On the other hand, activity of the dorsal vagal complex is associated with intense emotional states and immobilization, and is responsible for the severe hypoarousal and pain blunting of dissociation. The traumatized infant's sudden state switch from sympathetic hyperarousal into parasympathetic dissociation is described by Porges (1997) as "the sudden and rapid transition from an unsuccessful strategy of struggling requiring massive sympathetic activation to the metabolically conservative immobilized state mimicking death associated with the dorsal vagal complex" (p. 75). This work in psychophysiology nicely fits with Bromberg's assertion that trauma is associated with autonomic sympathetic hyperarousal, and that dissociation is a response to hyperarousal.

Porges (1997) describes the involuntary and often prolonged characteristic pattern of vagal outflow from the dorsal vagal nucleus. This state of dorsal vagal parasympathetic activation accounts for the extensive duration of "dead spots" in the infant's subjective experience (Kestenberg, 1985), "void" states associated with pathological dissociative detachment (Allen et al., 1999), and for what Bromberg calls dissociative "gaps" in subjective reality, "spaces" that surround self-states and thereby disrupt coherence among highly affectively charged states. These "gaps" are also discussed in the developmental psychoanalytic literature. Winnicott (1958) notes that a particular failure of the maternal holding environment causes a discontinuity in the baby's need for "going-on-being."

Hesse and Main (1999) point out that the disorganization and disorientation of type "D" attachment associated with abuse and neglect phenotypically resemble dissociative states. The underlying mechanism of this can only be understood in neurobiological terms. During episodes of the intergenerational transmission of attachment trauma the infant is matching the rhythmic structures of the mother's dysregulated arousal states. This synchronization is registered in the firing patterns of the stress-sensitive corticolimbic regions of the right brain, dominant for the human stress response and survival (Wittling, 1997; Wittling & Schweiger, 1993). These right hemispheric structures are in a critical period of growth during the early stages of human development (Allman et al., 2005; Bogolepeva & Maolfeeva, 2001; Chiron et al., 1997; Schore, 1994).

In light of the fact that many of these mothers have suffered from unresolved trauma themselves, this spatiotemporal imprinting of the chaotic alterations of the mother's dysregulated state facilitates

the downloading of programs of psychopathogenesis. This growth-inhibiting relational environment is a context for the real-time intergenerational transmission of an enduring susceptibility to attachment trauma and to the unconscious use of a dissociative defense against overwhelming and dysregulating affective states. In a recent prospective study Dutra et al. (2009) observe that maternal disrupted affective communications and lack of involvement in the regulation of stressful arousal are associated with the child's use of dissociation, "one of the few available means for achieving a modicum of relief from fearful arousal." This in turn leads the child "not to acknowledge pain and distress within a set of caregiving relationships that are vital for survival" (p. 388).

The chronic, massive psychobiological misattunement of attachment trauma between the infant and primary caregiver sets the stage for the characterological use of right brain pathological dissociation over all subsequent stages of development. Describing the use of this defense by certain personality structures, Allen and Coyne (1995) observe: "Although initially they may have used dissociation to cope with traumatic events, they subsequently dissociate to defend against a broad range of daily stressors, including their own posttraumatic symptoms, pervasively undermining the continuity of their experience" (p. 620). Attachment studies reveal that individuals with a history of relational trauma utilize dissociative behaviors in later life—hypoarousal and heart rate deceleration has been found in dissociating infants, adolescents, and adults (see Schore, 2003a). These psychobiological events are not only intrasubjectively experienced but implicitly communicated in intimate contexts (including right-brain to right-brain transference/countertransference transactions).

### Psychopathogenesis: Clinical Manifestations of Pathological Dissociation

The enduring negative impact of the characterological use of pathological dissociation in individuals with a history of relational attachment trauma is a major theme of this book. In the very first chapter Bromberg notes:

The affect evoked by trauma is not merely unpleasant but is a disorganizing hyperarousal that threatens to overwhelm the mind's ability to think, reflect, and process experience cognitively.



\* Affective dysregulation so great that it carries the person to the edge of depersonalization and sometimes self-annihilation is not describable by the term anxiety. Continuity of selfhood is at stake.

And later in the book (chapter 5) he asserts:

One could even suggest that the impact of trauma leads to the most rigid dissociative mental structure when one of the resulting disjunctive states is highly organized by the *attachment-related core-self*, and the trauma threatens its violation. In such instances, the threat of affective destabilization carries with it a potential identity crisis.

Consonant with these clinical observations I have cited neurobiological research that now clearly demonstrates continuity over the course of the lifespan of the expression of the primitive autoregulation defense of pathological dissociation in patients with a history of relational trauma. It is now well established that early childhood abuse specifically alters right lateralized limbic system maturation, producing neurobiological alterations that act as a biological substrate for a variety of psychiatric consequences, including affective instability, inefficient stress tolerance, memory impairment, and dissociative disturbances (Schore, 2002). In a transcranial magnetic stimulation study Spitzer et al. (2004) report: "In dissociation-prone individuals, a trauma that is perceived and processed by the right hemisphere will lead to a 'disruption in the usually integrated functions of consciousness'" (p. 168). In functional magnetic resonance imaging research Lanius et al. (2005) show predominantly right-hemispheric activation in post-traumatic stress disorders (PTSD) patients while they are dissociating, and conclude that patients dissociate in order to escape from the overwhelming emotions associated with the traumatic memory, and that dissociation can be interpreted as representing a nonverbal response to the traumatic memory. Two recent studies also demonstrate that dissociation is associated with an impaired competence of right hemisphere emotion processing, especially when it becomes loaded with high arousal, negatively valenced emotional stimuli (Enriquez & Bernabeu, 2008; Helton et al., 2010).

These and other studies are now exploring the evolution of a developmentally impaired regulatory system over all stages of life, and provide evidence that prefrontal cortical and subcortical limbic-

autonomic areas of the right brain are centrally involved in the dissociative response. The right cerebral hemisphere, more so than the left, is densely reciprocally interconnected with emotion processing limbic regions, as well as with subcortical areas that generate both the brainstem arousal and autonomic (sympathetic and parasympathetic) bodily-based aspect of emotions (see right lateralized vertical axis of Figure F.1). There is now agreement that sympathetic nervous system activity is manifest in tight engagement with the external environment and high level of energy mobilization and utilization, while the parasympathetic component drives disengagement from the external environment and utilizes low levels of internal energy (Recordati, 2003). The stress regulating dynamic uncoupling of the two components of the ANS underlies the description that "Dissociation is conceptualized as a basic part of the psychobiology of the human trauma response: a protective activation of altered states of consciousness in reaction to overwhelming psychological trauma" (Loewenstein, 1996, p. 312).

Pathological dissociative detachment thus represents a bottom-line defensive state driven by fear-terror, in which the stressed individual copes by pervasively and diffusely disengaging attention "from both the outer *and* inner worlds" (Allen et al., 1999, p. 164, emphasis added). I have suggested that the "inner world" is more than cognitions, the realm of bodily processes, central components of emotional states (Schore, 1994). This conceptualization bears directly upon Bromberg's assertion in this volume (chapter 8) that dissociation underlies the mechanism by which "the mind/brain tries to avoid self-annihilation by protecting the inner world from the existence of the outside."

In line with the current shift from cold cognition to the primacy of bodily-based affect, clinical research on dissociation is now focusing on "somatoform dissociation." According to Nijenhuis (2000), somatoform dissociation is an outcome of early onset traumatization, expressed as a lack of integration of sensorimotor experiences, reactions, and functions of the individual and his/her self-representation. Thus, "dissociatively detached individuals are not only detached from the environment, but also from the self—their body, their own actions, and their sense of identity" (Allen et al., 1999, p. 165). This observation describes impaired functions of the right hemisphere, the locus of the "emotional" or "corporeal self." Van der Kolk and his colleagues (1996) conclude: "Dissociation refers to a compartmentalization of experience: Elements of a trauma are not integrated into a unitary whole or an integrated sense of self" (p. 306).

In a number of works I have offered interdisciplinary evidence

Winnicott  
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\* which indicates that the implicit self, equated with Freud's system *Ucs*, is located in the right brain (Schore, 1994, 2003b, 2009b). The lower subcortical levels of the right brain (the deep unconscious) contain all the major motivational systems (including attachment, fear, sexuality, aggression, etc.) and generate the somatic autonomic expressions and arousal intensities of all emotional states. On the other hand, higher orbitofrontal-limbic levels of the right hemisphere generate a conscious emotional state that expresses the affective output of these motivational systems (see Figure F.1). Neuroanatomical research now demonstrates:

Descending pathways from orbitofrontal and medial prefrontal cortices, which are linked with the amygdala, provide the means for speedy influence of the prefrontal cortex on the autonomic system, in processes underlying appreciation and expression of emotions. . . . Repetitive activation of the remarkably specific and bidirectional pathways linking the amygdala with the orbitofrontal cortex may be necessary for conscious appreciation of the emotional significance of events. (Barbas et al., 2003)

This right lateralized cortical-subcortical system is the neurobiological processor of Bucci's (1997a) symbolic-subsymbolic communications. The higher right cortical hemisphere is involved in symbolization and imagery functions; the lower right subcortical areas (e.g., amygdala, hippocampus, hypothalamic-pituitary-adrenal axis, brainstem arousal systems, etc.) in unprocessed, unformulated affective experience. Thus: "The right hemisphere is . . . more closely in touch with emotion and the body (therefore with the neurologically 'inferior' and more ancient regions of the central nervous system)" (McGilchrist, 2009, p. 437).

The hierarchical apex of this right lateralized cortical-subcortical system, the orbitofrontal cortex—the senior executive of the emotional brain—functions as a dynamic filter of emotional stimuli (Rule, Shimamura, & Knight, 2002), provides a panoramic view of the entire external environment, as well as the internal environment associated with motivational factors (Barbas, 2007, p. 239), and intuitively formulates a theory of mind, now defined as "a kind of affective-decision making" (Happeney et al., 2004, p. 4). The orbitofrontal cortex, \* which I equate with Freud's system *Pcs*, performs an essential adaptive motivational function—the relatively fluid switching of internal bodily-based states in response to changes in the external environment that

are nonconsciously appraised to be personally meaningful. I suggest that in optimal contexts this right brain system allows for what Bromberg describes in chapter 7 as "a mind-brain mechanism that is intrinsic to everyday mental functioning," one that flexibly and seamlessly "attempts to select a self-state configuration that is most immediately adaptive within the constraints of self-coherence. This flexibility is what gives a person the remarkable capacity to negotiate character stability and change simultaneously—to stay the same while changing (chapter 5)."

On the other hand, pathological dissociation, an enduring outcome of early relational trauma, is manifest in a maladaptive highly rigid, closed right brain system. This system's implicit visual, auditory, and tactile perceptual functions, performed by the temporoparietal areas of the posterior right cortical hemisphere that "plays a key role in perception and awareness" (Papeo et al., 2010, p. 129), are radically altered in trauma. In chapter 3 Bromberg observes: "The ordinary links between symbolic and subsymbolic communication have been broken—at least for a while. The essence of dissociation is that it alters perceptual experience—and thereby drains the interpersonal context of personal meaning." In addition, this closed system responds to even low levels of intersubjective stress with the survival response of defensive parasympathetic dorsal vagal parasympathetic hypoarousal and heart rate deceleration. This results in moments of "psychic death" and an inability to sustain an inner sense of "aliveness". McGilchrist (2009) describes dissociation as "a relative hypofunction of the right hemisphere" (p. 235)

Neurobiologically, dissociation reflects the inability of the right brain cortical-subcortical implicit self-system to recognize and process the perception of external stimuli (exteroceptive information coming from the relational environment) and on a moment-to-moment basis integrate them with internal stimuli (interoceptive information from the body, somatic markers, the "felt experience"). This failure of integration of the higher right hemisphere with the lower right brain and disconnection of the central nervous system from the autonomic nervous system induces an instant collapse of both subjectivity and intersubjectivity. Stressful affects, especially those associated with emotional pain are thus not experienced in consciousness (Bromberg's "not-me" self-states). *micro surgery*

It is important to emphasize that dissociation involves more than an alteration of mental processes, but rather mind-body disconnections. It ruptures the integration of psychic and somatic experience, \*



what Winnicott (1949) called *psyche-soma*, and thereby self-wholeness. Kalsched (2005) describes operations of defensive dissociative processes used by the child during traumatic experience by which "Affect in the body is severed from its corresponding images in the mind and thereby an unbearably painful meaning is obliterated" (p. 174). There is now agreement that "traumatic stress in childhood could lead to self-modulation of painful affect by directing attention away from internal emotional states" (Lane et al., 1997, p. 840). The right hemisphere is dominant not only for regulating affects, but also for maintaining a coherent sense of one's body (Tsakiris et al., 2008), for attention (Raz, 2004), and for pain processing (Symonds et al., 2006), and so the right brain strategy of dissociation represents the ultimate defense for blocking emotional bodily-based pain. The endpoint of chronically experiencing catastrophic states of relational trauma in early life is therefore a progressive impairment of the ability to adjust, take defensive action, or act on one's own behalf, and a blocking of the capacity to register affect and pain, all critical to survival.

At all points of the life span, although dissociation represents an effective short-term strategy, it is detrimental to long-term functioning, specifically by preventing exposure to potential relational learning experiences embedded in intimate intersubjective contexts that are necessary for emotional growth. As Bromberg notes, the function of pathological dissociation is to act as an "early warning system" that anticipates potential affect dysregulation by anticipating trauma before it arrives. If early trauma is experienced as "psychic catastrophe," dissociation represents "detachment from an unbearable situation," "the escape when there is no escape," "a submission and resignation to the inevitability of overwhelming, even psychically deadening danger," and "a last resort defensive strategy" (see references in Schore, 2003a, 2009a). This psychobiological survival defense becomes characteristic in personalities who experience attachment trauma in early development.

The fragile unconscious system of such personalities is susceptible to not only hypermetabolic hyperarousal, but also mind-body hypometabolic collapse. The latter is manifest in a sudden loss of energy-dependent synaptic connectivity within the right brain, expressed in a sudden implosion of the implicit self, a rupture of self-continuity, and a loss of an ability to experience a particular conscious affect. This collapse of the implicit self is signaled by the amplification of the affects of shame and disgust, and by the cognitions of hopelessness and helplessness. Because the right hemisphere mediates the communication

and regulation of emotional states, the rupture of intersubjectivity is accompanied by an instant dissipation of safety and trust, a common occurrence in the treatment of the right brain deficits of severe personality disorders (Schore, 2003a, 2009b). Current research shows that insecurely attached dissociative patients dissociate as a response to negative emotions arising in psychodynamic psychotherapy, leading to a less favorable treatment outcome (Spitzer et al., 2007). Both Bromberg and I have argued that this bottom-line defense represents the major counterforce to the emotional-motivational aspects of the change process in psychotherapy. *Technique!*

### Psychotherapy: Critical Role of Enactments in Affective Change Processes

I would like now to focus more directly upon this book's valuable clinical contributions to a deeper understanding of the essential mechanisms of psychotherapy, that is, "therapeutic action." A major theme of the upcoming chapters is the problem of clinical enactments, a challenging clinical phenomenon that is also a focus of my own recent work (Schore, 2011). Bromberg argues: "Clinically, the phenomenon of dissociation, though observable at many points in every treatment, comes into highest relief during enactments, requiring an analyst's close attunement to unacknowledged affective shifts in his own and his patient's self-states (chapter 7)." In my earlier review of *Awakening the Dreamer*, I concluded that the book's major accomplishment was in convincingly demonstrating, both clinically and theoretically, that attending to dissociative processes in enactments is essential to the treatment of patients with a history of relational trauma (Schore, 2007). Indeed, clinical research now shows that pathological dissociation, a primitive defense against overwhelming affects, is a key feature of reactive attachment disorder of infants, pediatric maltreatment disorder, dissociative identity disorder, posttraumatic stress disorder, psychotic disorders, eating disorders, substance abuse and alcoholism, somatoform disorders, and borderline and antisocial personality disorders.

In this volume Bromberg expands his trauma-dissociation model ("shrinking the shadow of the tsunami") to the treatment of all patients, and in chapter 7 suggests that therapeutic joint processing of enactments

allows one's work with so-called "good" analytic patients to become more powerful because it provides a more experience-near



perspective from which to engage clinical phenomena that are immune to interpretation, such as “intractable resistance” and “therapeutic stalemate.” Further, it puts to rest the notion of “analyzability,” and allows analysts to use their expertise with a wide spectrum of personality disorders often considered “difficult” or “unanalyzable,” such as individuals diagnosed as borderline, schizoid, narcissistic, and dissociative.

That said, the focus of the following chapters is on patients with a history of relational trauma and pathological dissociation. He states: “The big difference between people is the extent to which the sudden affective hyperarousal touches an area of unprocessed developmental trauma and is not only unpleasant, but mentally unbearable and thus unavailable to cognition. The risk of this happening is a central aspect of working with enactments.” Reflecting his developmental and neurobiological clinical perspective, Bromberg argues (chapter 5) that: “Enactments, to the degree they relive aspects of attachment-related developmental trauma in a patient’s past, activate the brain’s ‘fear system’.” Recall the previous discussion of the subcortical right amygdala, the brain system that processes “unseen fear” (Morris et al., 1999). This volume’s numerous clinical vignettes offer almost poetic descriptions of the dialogical unconscious attachment processes that are intersubjectively activated in enactments. In this last section of the foreword I utilize the neuropsychanalytic perspective of Regulation Theory to discuss two major processes embedded in enactments: unconscious relational communications, and the psychotherapeutic change mechanism of “shrinking the shadow of the tsunami.”

### *Unconscious Relational Communications*

Throughout this book Bromberg repeatedly asserts that enactment is an unconscious communication process that reflects those areas of the patient’s self-experience where trauma has compromised the capacity for affect regulation. The enactment is a dyadic dissociative process that is transmitted not through symbolic but subsymbolic communication that is “deadened to reflective functioning.” In this dyadic process, if the therapist is “too long listening to the ‘material’ without being alive to his own internal experience of the relationship itself, a dissociative process often begins to develop in the therapist that may have started in the patient but quickly becomes a cocoon that envelops the therapist (chapter 2).” He further proposes that the

phenomenon of enactment (subsymbolic communication of “not-me”) and the phenomenon of intersubjectivity (symbolic communication of a relational “me”) represent discrete communication channels. These communications take place in a “transference/countertransference field” that is characterized by “its vividness and its immediacy.” How does the clinician receive these dissociated communications? Bromberg suggests that the clinician must adopt an interpersonal/relational listening stance in which his “overarching state of mind is attuned to his fluctuating, moment-to-moment experience of what it is like for him to be with his patient and for his patient to be with him during the course of a session. . . . His ‘material’ is an ever-shifting experiential context, the most powerful element of which first reaches him perceptually, not cognitively” (chapter 6).

Within this listening stance the focus of the therapist’s attention is on the shifting states of mind that organize the content at any given moment, not on content per se. In this intersubjective context “verbal content is only one ingredient of a here-and-now field, a field that is shaped by an ever-changing affective dialectic between what is being enacted and what is being said.” In order to attain this stance of “open-ended listening” the clinician must “leave rational thought behind.” In support of this enactment communication model he cites Seymour Epstein’s (1994) work on “Integration of the cognitive and the dynamic unconscious” that describes “the existence of two parallel, interacting modes of information processing: a rational system and an emotionally driven system” (p. 709). In line with this conceptualization, Bromberg concludes that in enactments, heightened affective moments of the treatment, what matters is the “therapist’s affective honesty” that is “rarely communicated through content or through language per se. It is primarily communicated through a relational bond that Schore and others including myself believe is mediated neurobiologically by right-brain to right-brain state sharing.” In the previous sections of this foreword I discussed the developmental interpersonal neurobiology of right brain state-sharing.

Indeed, my work in Regulation Theory describes in some detail these right brain unconscious relational communications, and so I will offer a brief summary of this work. A major tenet of my studies dictates that the relevance of developmental attachment studies to the treatment process lies in the commonality of implicit right-brain to right-brain affect communicating and regulating mechanisms in the caregiver–infant and the therapist–patient relationship (the therapeutic alliance). Within the therapeutic dyad, not left brain verbal explicit



\* patient-therapist rational discourse but right brain implicit nonverbal emotion-laden communication directly expresses the attachment dynamic. Just as the left brain communicates its states to other left brains via conscious linguistic behaviors so the right nonverbally communicates its unconscious states to other right brains that are tuned to receive these communications.

Recent neuroscientific information about the emotion processing right brain is directly applicable to models of patient-therapist affective communications. Decety and Chaminade (2003) describe right brain operations essential for adaptive interpersonal functioning, ones specifically expressed in the therapeutic alliance: "Mental states that are in essence private to the self may be shared between individuals ... self-awareness, empathy, identification with others, and more generally intersubjective processes, are largely dependent upon ... right hemisphere resources, which are the first to develop" (p. 591). And with respect to the receptive relational mechanism within the therapeutic alliance, Keenan and his colleagues (2005) assert: "The right hemisphere, in fact, truly interprets the mental state not only of its own brain, but the brains (and minds) of others" (p. 702).

The quintessential clinical context for a right brain transference/countertransference implicit communication of a dysregulated emotional state is the heightened affective moment of a clinical enactment. Spontaneous nonverbal transference/countertransference interactions at preconscious-unconscious levels represent implicit right-brain to right-brain nonverbal communications of fast acting, automatic, regulated and especially dysregulated bodily-based stressful emotional states between patient and therapist (Schoore, 1994). Transference is an activation of right brain autobiographical memory, as autobiographical negatively valenced, high intensity emotions are retrieved from specifically the right (and not left) medial temporal lobe (Buchanan et al., 2006). Transference can be described as "an established pattern of relating and emotional responding that is cued by something in the present, but oftentimes calls up both an affective state and thoughts that may have more to do with past experience than present ones" (Maroda, 2005, p. 134). Writing on unconscious emotional memories Gainotti (2006) asserts: "The right hemisphere may be crucially involved in those emotional memories which must be reactivated and reworked during the psychoanalytical treatment" (p. 167). It is now well established that the right hemisphere is dominant for nonverbal (Benowitz et al., 1983) and emotional (Blonder et al., 1991) communication.

Earlier I discussed how attachment states are transmitted in spontaneous, implicit, regulated and dysregulated right-brain to right-brain visual-facial, tactile-proprioceptive, and auditory-prosodic emotionally charged communications. In a number of contributions I have offered interdisciplinary evidence which indicates that these nonverbal communications are rapidly expressed within an enactment. With reference to auditory nonspeech communications Hutterer and Liss (2006) point out that nonverbal variables, such as tone, tempo, rhythm, timbre, prosody, and amplitude of speech, as well as body language signals, act as essential aspects of therapeutic technique. In a recent review of the neurobiology of affective prosody Ross and Monnot (2008) assert: "Thus, the traditional concept that language is a dominant and lateralized function of the left hemisphere is no longer tenable" (p. 51). They conclude:

Over the last three decades, there has been growing realization that the right hemisphere is essential for language and communication competency and psychological well-being through its ability to modulate affective prosody and gestural behavior, decode connotative (non-standard) word meanings, make thematic inferences, and process metaphor, complex linguistic relationships and non-literal (idiomatic) types of expressions. (p. 51)

Interestingly, basic research indicates that prosodic emotional communications are more efficiently processed in the left ear, and thereby the right hemisphere (Sim & Martinez, 2005). This means that in an optimal listening stance the clinician's left ear (right hemisphere) and not right ear (left hemisphere) processes the patient's subtle prosodic changes in state. Recall, the right hemisphere is dominant for "perception of voices" (Brancucci et al., 2009). Indeed, later in this book Bromberg postulates, "One's clinical ear hears the voice of another part of self."

Importantly, this neuropsychanalytic perspective also dictates that the clinician's stress-inducing misattunements are processed in the patient's left ear. During mutual enactments these right hemispheric nonconsciously processed nonverbal auditory threat cues (and not the clinician's left hemispheric verbalizations) instantly trigger fear-induced self-state changes in the patient. In support of this model I direct the reader to the enactment in the case of Martha in chapter 4, where Bromberg describes "a listening stance that detects a switch in self-states." But in this context of mutuality and intersubjective collision



he observes that on the other side of the dyad the patient's perceptual processing focused on his prosodic output:

Nevertheless, there was enough displeasure in my voice about what I perceived as her effort to distract us from our "task" to trigger her early warning system. Martha's self-state switched. Not only had her laughter disappeared, but everything about her that went with it seemed gone also. Her entire physical being had become that of a scared, unhappy, little girl.

As a result of his subsequent correction, interactive repair, and his own self-state switch he notes, "I was now a bit recovered from my shock, and I'm sure that my tone of voice reflected the tenderness I was feeling."

In addition to offering a number of poignant clinical descriptions of enactments, Bromberg also speculates about their underlying neurobiology. In an upcoming chapter he specifies not only cortical but subcortical areas of the right brain in unconscious relational communications. He states: "The secret that is being revealed through an enactment is that while your patient is telling you one thing in words, to which you are responding in some way, there is a second 'conversation' going on between the two of you. Buck (1994, p. 266, cited in Schore, 2003b, p. 49) refers to this as 'a conversation between limbic systems.'" Here he directly involves the right lateralized cortical-subcortical limbic-autonomic axis in "symbolic" and especially "subsymbolic" implicit communications (see earlier discussion). Again, I present the reader with a brief synopsis of my work in this area.

In *Affect Regulation and the Repair of the Self* (2003b) I offered a chapter, "Clinical implications of a psychoneurobiological model of projective identification." According to Bromberg (2006a), projective identification is "a core element in the process of enactment" (p. 185). My entire chapter focused on the moment-to-moment implicit nonverbal communications within an enactment that takes place in "a moment," literally a split second. Here I argued that Freud's (1915a) dictum, "It is a very remarkable thing that the *Ucs* of one human being can react upon that of another, *without passing through the Cs*" (p. 194, emphasis added), can be neuropsychanalytically understood as a right-brain to right-brain communication from one relational unconscious to another.

The "conversation between limbic systems" that occurs during enactments is more precisely a conversation between right lateralized

limbic and autonomic nervous systems. In chapter 7 of that same volume I suggested:

[F]acially-mediated right brain-to-right brain communications, at levels beneath awareness, can instigate the regulation (or dysregulation) of autonomic function. . . . It is now well established that the autonomic nervous system reacts to *perceptual stimuli that may never enter consciousness* (Lazarus & McCleary, 1951) and that it is involved in the generation of nonconscious affect that is triggered by the visual perception of an emotionally expressive face. . . . This unconscious process . . . may be expressed as "primitive emotional contagion" (Hatfield et al., 1992). I also suggest that this transfer of nonconscious affect is mediated by a *right amygdala to right amygdala communication*. (Schore, 2003b, p. 227, emphasis added)

Thus subsymbolic communications of "not-me" states (mutual deep projective identifications) are subcortical nonconscious communications between the right amygdala, right insula, and right lateralized sympathetic and dorsal vagal parasympathetic autonomic nervous systems of the patient and therapist. These unconscious relational communications are not mental but psychobiological and bodily-based, and they are received in the therapist's somatic countertransference. <sup>ty</sup>

As a result of the cocreation of a more or less efficient right brain communication system, the therapist can now act as an affect regulator of the patient's conscious and unconscious (dissociated) dysregulated affective states. In chapter 5 here, Bromberg observes, "Schore. . . stresses the dual role of the analyst as psychobiological regulator and coparticipant, and that this duality is especially vital during heightened affective moments. In other words, the analyst's role is therapeutic because his regulating function is not independent of his coparticipation." This therapeutic attachment mechanism supports an "affectively alive interpersonal engagement with the shifting self-states that organize the internal object worlds of both patient and analyst" what Bromberg calls a "coconstructed royal road." This same right-brain to right-brain system of unconscious relational communication and regulation is also centrally involved in "negotiations between collisions and safety." These interpersonal experiences of being "safe but both too safe" allow for novelty and surprise, which facilitate "the enhanced spontaneity and flexibility of a patient's personality structure." Bromberg observes that as the treatment progresses "there occurs



a transformation of unthinkable 'not-me' self-states into enacted here-and-now events that are played out interpersonally, processed together with the analyst's subjective experience of the same event, and so become part of the patient's overarching configuration of 'me.'

*Psychotherapeutic Change Mechanism  
of Shrinking the Shadow of the Tsunami*

In this final section I offer some thoughts about this volume's important contributions towards explicating the essential change mechanisms of psychotherapy. Each chapter contains hypotheses on "therapeutic action," but here I will focus only on what Bromberg sees as the psychological and biological consequences of effective psychotherapeutic treatment of "the shadow of the tsunami," dissociation and the patient's fear of potentially traumatic affect dysregulation. This neuropsychanalytic perspective will refer back to the earlier sections of this foreword. For more neurobiological commentaries on Bromberg's proposals on intersubjective collisions and negotiations, safe surprises and novelty, and limitations of interpretations see Schore (2007, 2011). In the upcoming very first chapter Bromberg proposes:

I argue that for all patients, regardless of how minimal the scope or duration of the vulnerability, enduring personality growth in analytic treatment is interwoven with the ability of the patient-analyst relationship to increase a patient's threshold for affective hyperarousal. This use of the patient-analyst relationship takes place through the nonlinear joint processing of an enacted (dissociated) communication channel in which the patient's fear of affect dysregulation (the shadow of the tsunami) is "shrunk" by the broader ability to safely distinguish the likelihood of mental shock that could indeed be affectively overwhelming from the kind of excitingly "edgy" experiences that are always interwoven with the risk of spontaneity. The patient's fear of dysregulation, as it is relived in the enacted present, becomes increasingly containable as a cognitive event, thus enabling the mind/brain to diminish its automatic reliance on dissociation as an affective "smoke-detector."

Later in chapter 4 he speculates further upon the neurobiological

Through ... shared minding of the dissociative gap, the automatic neurosynaptic warning signal that triggers immediate dissociation as a protection against potentially destabilizing hyperarousal becomes more selective at the brain level and, through a feedback loop, allows the patient's mind to support increased development of intersubjectivity. Little by little, the patient's potential to bear internal conflict is increased by easing the mental struggle to hold it cognitively.

In a very recent contribution that specifically integrates my work and Bromberg's (Schore, 2011), I describe the neurobiological underpinnings of the psychotherapeutic change mechanism that both of us are exploring. In that work I suggest that recent clinical relational models and interdisciplinary scientific data indicate that effective psychotherapy of early forming attachment pathologies and severe personality disorders must focus on unconscious affect and the survival defense of pathological dissociation, "a structured separation of mental processes (e.g., thoughts, emotions, conation, memory, and identity) that are ordinarily *integrated*" (Spiegel & Cardena, 1991, p. 367, emphasis added). The clinical precept that unregulated overwhelming traumatic feelings associated with hyperarousal can not be adaptively integrated into the patient's emotional life is the expression of a dysfunction of "the right hemispheric specialization in regulating stress- and emotion-related processes" (Sullivan & Dufresne, 2006, p. 55). As described earlier this dissociative deficit specifically results from a lack of integration of the right lateralized limbic-autonomic circuits of the emotional brain (see Figure F.1).

A general clinical principle of working in enactments with traumatic affects and the defense of dissociation is that the sensitive psychobiologically attuned therapist allows the patient to re-experience dysregulating affects in affectively tolerable doses in the context of a safe environment, so that overwhelming traumatic feelings can be regulated and integrated into the patient's emotional life. Bromberg points out that in these heightened affective moments the therapeutic relationship must "feel safe but not perfectly safe." These therapeutic affective transactions occur at the edges of the regulatory boundaries of the windows of affect tolerance (Schore, 2009c), or what Bromberg terms as a relational space bordering on overwhelming hyperarousal and "edgy experiences."

In ongoing intersubjective attunements, collisions, and negotiated repairs, therapeutic interactive regulation of affective arousal impacts



the patient's threshold of activation of a right brain stress response to a social stressor. In earlier writings Bromberg (2006a) observed:

The patient's threshold for "triggering" increases, allowing her increasingly to hold on to the ongoing relational experience (the full complexity of the here and now with the therapist) as it is happening, with less and less need to dissociate; as the processing of the here and now becomes more and more immediate, it becomes more and more experientially connectable to her past.  
(p. 69)

Effective work at the regulatory boundaries of right brain high and low arousal psychobiological states ultimately broadens the windows of affect tolerance, thereby increasing the patient's ability to consciously experience and communicate a broader range of more intense and more complex emotions that result from the simultaneous blending of affects.

In this manner regulated therapeutic enactments positively alter the developmental growth trajectory of the right brain and facilitate the top-down and bottom-up integration of its cortical and subcortical systems. This structural maturational progression allows for a functional expansion of the ability to regulate (by both autoregulation and interactive regulation) and thereby tolerate a broader range of high and low arousal negative and positive affects. More specifically effective affectively-focused psychotherapy facilitates an increase of connectivity within the right brain, especially between the orbitofrontal cortex, anterior cingulate, insula, amygdala, and the (HPA) axis. This experience-dependent maturation of right lateralized limbic-autonomic stress-regulating circuits also promotes the complexity of defenses, right brain strategies for coping with stressful bodily-based affects that are more flexible and adaptive than pathological dissociation. This developmental advance is expressed in the emergence of the capacity to experience more than one conscious affect at a time, and thereby to adaptively tolerate intrapsychic conflict.

These neurobiological alterations of the right-lateralized vertical axis is expressed in further development of the right brain core of the self and its central involvement in "patterns of affect regulation that integrate a sense of self across state transitions, thereby allowing for a continuity of inner experience" (Schore, 1994, p. 33, emphasis added). Recent neuroscience research indicates that "the right hemisphere is significantly more efficient and interconnected than the

left hemisphere," and thereby it plays a "leading role" for "integration tasks" (Iturria-Medina et al., 2011, p. 56, emphasis added). This therapeutic expansion of the right brain thus supports the integration of what Bromberg (2006) calls dissociated "not-me" states into right lateralized autobiographical memory and a relational "me." The affectively-focused psychotherapy described in the following pages thereby facilitates an expansion not only of the explicit self and the conscious mind, but the implicit self and the unconscious mind. Current neuroscience is seriously disputing the earlier claim that the left hemisphere is dominant in humans. This right-lateralized cortical-subcortical system is dominant not for verbal functions and voluntary motor behavior, but for more essential abilities: nonverbal communication, affect regulation, coping with stress, maintaining homeostasis, and survival!

A major theme of this remarkable book and indeed of Bromberg's entire career is the exploration of an effective relational treatment of the right brain "bottom-line" survival of defense pathological dissociation, an outcome of early relational trauma. According to McGilchrist (2009): "Dissociation is ... the fragmentation of what should be experienced as a whole—the mental separation of components of experience that would ordinarily be processed together ... suggesting a right hemisphere problem" (p. 236). The essential functions of the right brain, the biological substrate of the human unconscious described by Freud are now thought to include:

[E]mpathy and intersubjectivity as the ground of consciousness; the importance of an open, patient attention to the world, as opposed to a willful, grasping attention; the implicit or hidden nature of truth; the emphasis on process rather than stasis, the journey being more important than the arrival; the primacy of perception; the importance of the body in constituting reality; an emphasis on uniqueness; the objectifying nature of vision; the irreducibility of all value to utility; and creativity as an unveiling (no-saying) process rather than a willfully constructive process.  
(McGilchrist, 2009, p. 177)

For almost a century psychoanalysis, and indeed all forms of "the talking cure" neglected the fundamental problem of mind-body trauma, a fundamental aspect of so many severe psychiatric disorders. Partly due to this avoidance the psychotherapeutic techniques of clinical psychoanalysis changed little over the last century. But in the 1990s



trauma, bodily-based emotion, and the brain/mind interface finally became a focus of both intense scientific and clinical inquiry. In this seminal period the mental health field's repressive and indeed dissociative defenses against the darker sides of the human condition finally lifted. Bromberg's pioneering work has blazed the trail for clinicians around the world to formulate a deeper understanding of their patients with a history of early relational trauma. In his highly acclaimed books on these subjects, *Standing in the Spaces* (1999), *Awakening the Dreamer* (2006a), and now this one, *The Shadow of the Tsunami*, he powerfully demonstrates how this recent developmental and neurobiological information about trauma and dissociation has qualitatively transformed our clinical models and altered our conceptions of therapeutic action.

Indeed, like myself (Schoe, 2009d), Bromberg here contends that we are now experiencing not just an advance in the field of mental health but a paradigm shift. In an upcoming chapter he asserts:

Interpersonal and relational writers largely have endorsed the idea that we are in fact confronted with a paradigm change and have conceptualized it as a transformation from a one-person to a two-person psychology. I feel that this formulation is accurate, and that three central clinical shifts are intrinsic to the conceptual shift: A shift from the primacy of content to the primacy of context, a shift from the primacy of cognition to the primacy of affect, and a shift away from (but not yet an abandonment of) the concept of "technique."

He further concludes that this paradigm change in psychotherapy involves "the replacement of a focus on *content* with a focus on *process*."

In my neuropsychanalytic writings I have described the same shift in paradigm: from conscious cognition to unconscious affect. Regulation Theory asserts that the relational change mechanism embedded in the therapeutic alliance acts not through the therapist's left brain explicitly delivering *content* interpretations to the patient's right brain, but through mutual bidirectional right-brain to right-brain affect communication and regulation processes (Schoe, 2011). In the beginning of this foreword I noted the similarities between Bromberg and myself in not only our theoretical understandings, but in our clinical style of working relationally and affectively with patients. This book is dedicated to what that paradigm shift looks like from the experience-near perspective of a relational model of treatment that impacts both the

conscious and unconscious, especially dissociated processes in both members of the therapeutic dyad.

Over the course of his career Philip Bromberg has deservedly earned an international reputation for eloquently describing the subtle yet essential intersubjective events that occur at the interface of the patient's and therapist's internal worlds. As opposed to the usual case presentation in terms of left brain detached linear verbal exchanges, he has created a new form of description of the therapeutic dialogue—evocative multisensory portraits of the moment-to-moment nonlinear encounters between his and the patient's conscious and especially unconscious minds in a language that is saturated with right brain nonverbal visual and auditory images, metaphors, and indeed poetry. As this foreword ends, it is my pleasure to now hand you over to the creative mind of my dear friend and colleague. You're in for a rich amalgam of psychoanalysis, literature, philosophy, popular music, neuroscience, trauma theory, and biology from a master of the art of psychotherapy.