

WORKING PSYCHODYNAMICALLY WITH THE BRAIN IN MIND

By Steven Krugman, Ph.D

After 35 years of practicing psychodynamic psychotherapy I've discovered something new. In 1984 I had the good fortune to join a small group (which included Sam Osherson) being supervised by Anne Alonso. Anne was a wise and talented clinician and teacher, and believed deeply in the psychodynamic model.¹ For her, it was all in the transference relationship. My background included years working with domestic violence and post-traumatic stress cases. I often fought with her about what I felt to be the limitations of the "relationship" to contain and metabolize the powerful and primitive forces I had encountered – often helplessly – in my clinic work. To her great credit, she welcomed these disagreements, and we struggled to make sense of our differences.

To cite a few of them: I don't think she believed that dissociation was the profound and ubiquitous process I think we now believe it to be. I needed a better model for recognizing and working with it. I think she believed that reducing the patient's or the group's anxiety interfered with the work, rather than creating the safety that promotes growth. Her admonition "don't just do something, sit there," had great power in helping me contain my anxieties, but often in the face of acting out behaviors seemed insufficient and even irresponsible. I often felt that I didn't have a model of what changes as a result of therapy. At one point, I pressed the question. She answered "the structure of experience." "Like a self-object schema?" I offered. She nodded, and we moved on. I remember feeling that while she'd had heard my question, her answer seemed to float in a meta-theoretical space whose language I had mastered but whose purchase always seemed up for question.

Some years later, Anne invited me to join the faculty of the Center for Psychoanalytic Studies that she led at Massachusetts General

¹ Before her death in 2007, Anne was a Professor of Psychology Emeritus at Fielding and a Clinical Professor of Psychiatry at the Harvard Medical School. She is the author of *The Quiet Professor: Supervision in Psychotherapy* as well as a broad number of professional articles on dynamic therapy and theory.

Hospital. I taught a course we called “Contemporary Issues in Psychoanalysis.”

In that course, I reacquainted myself with the writings of John Bowlby and Mary Ainsworth, and met, for the first time, the more modern work of Mary Main and Peter Fonagy.² The attachment model provided me with a framework that spoke to many of the questions I had wanted Anne to answer. For one thing, Bowlby and the others believed that the child’s internal working model reflected the reality of what had happened in his or her relational life. He also believed that the therapist’s job was to create a secure base, and that responsiveness was one of the keys. For another, psychodynamic ideas could now be grounded in research based developmental theory. Among the things we read were Daniel Siegel’s *The Developing Mind*, and Alan Schore’s work on trauma and the right brain.³ These authors made connections with the underlying neurobiology of attachment, and how experience gets represented neuro-biologically. They both drew attention to the all-important the question of emotion regulation. Without intending to, I found myself crossing a bridge that I had avoided for many years.

Like many psychologists of my generation (the 60’s), I’d taken a basic physiological psych course and cursorily learned about axons and dendrites, and the general geography of the brain, such as it was known then. It never seemed particularly relevant to my clinical interests or understandings. In the 1980’s, the discovery of Prozac had us talking about neurotransmitters (e.g., serotonin, dopamine, etc) and the first data from MRI’s began to be published. Still, the brain and its relationship to mind, and clinical work, seemed like a distant continent and a foreign language.

² Ainsworth, M. Blehar, M.C., Waters, E, and Wall, S. Patterns of Attachment. Hillsdale, N.J. Erlbaum, 1978.; Bowlby, J. Attachment and Loss N.Y. Basic Books, 1969; Fonagy, P. Gergely, G. Jurist, E, and Target, M. Affect Regulation, Mentalization and the Development of the Self. N.Y. Other Press, 2002; Main, M. Kaplan, S, and Cassidy, J Security in Infancy, Childhood, and Adulthood. Monograph of the Social for Research in Child Development, 1985, 50 (1-2).

³ Schore, A. Right Brain Affect Regulation in Foshia, D. Siegel, D., and Solomon, M. The Healing Power of Emotion N.Y. Norton & Co. 2009; Siegel, D. The Developing Mind N.Y. Guilford, 1999.

Gradually, however, neuroscientists like Antonio DeMasio, Jeffrey Schwartz, and Norman Doige wrote books that made different, more accessible connections between experience and how the brain made sense of things. Demasio explained the neurobiology of “how we feel,” Schwartz offered a different way to think about OCD, and Doige wrote about neuroplasticity in everyday life.⁴ Daniel Siegel, having convened a conference of scientists of the mind, offered “interpersonal neurobiology” (INPB) as a framework within which to integrate the overlapping perspectives of neuro- and cognitive science, relational psychoanalysis, positive psychology and mindfulness studies.

I found myself excited by the new MRI driven science of the brain-mind at work, and this integrative framework.⁵ I was thrilled by my ability to get to know that distant continent and learn some of its language. My new learning has been driven by a sense of awe and child like wonder. Our brains are apparently the most complex object in the universe, containing a million billion connections. Our cerebral cortex is about the size of a linen dinner napkin and can do the most amazing things! Yet given the reality of all this complexity, the question becomes how to talk about cognitive neuroscience and the social brain in a way that is useful to those of us who work with other people (e.g., therapists, teachers, healers of all kinds, etc.) Just how much brain science do we need to know, and for what purpose?

The new neuroscience challenges traditional ideas about how our brains operate and develop over time.

For one thing, the brain is not a computer, and doesn't calculate options in a digital way. Instead, it's a mapmaker, building neural maps that reflect real experience, and constitute the unique nature of

⁴ Demasio, A. The Feeling of What Happens N.Y. Harcourt Brace, 1999; Doige, N. The Brain That Changes Itself. N.Y. Penguin, 2007; Schwartz, J. and Begley, S. Mind and Brain N.Y. Harper Collins, 2002; Siegel, D. Mindsight N.Y. Random House, 2010.

⁵ Magnetic Resonance Imagery produces images of the brain at work by tracking blood flow. While there is some critical debate about the validity of MRI findings with respect to specific mental activity, a new paradigm has emerged for investigating mind, behavior and its basis in the structure and dynamic function of the brain. See Gonsalves, B. and Cohen N. Brain Imaging, Cognitive Processes, and Brain Networks. Perspectives on Psychological Science 5,(6), 2010

each of our subjectivities and perspectives.⁶ It's endlessly comparing old maps against those of the moment in order to make the most accurate prediction about what to do next. Contrary to older notions that we are born with all the brains we will have throughout our lives, it is now clear that the brain changes in several ways across the life span. First, it generates exuberant growth of dendrites during the first two years (growing to about 150% of adult brain capacity), which gets pruned significantly before the onset of puberty. Evolution has created a neural strategy that can respond to an extraordinary variety of environmental challenges. As these get specified, unused neuronal branches wither and fade. At puberty there is another burst of dendritic growth, again followed by years of pruning, reorganization, and the creation of more efficient and faster connections among different brain areas. This continues into our mid twenties.

A second key finding is that the brain continues to change in response to new experience throughout most of adult life. The idea that the brain is changing every time we learn something new (neuroplasticity) affirms the fact that new experience in psychotherapy changes the brain!

The discovery that talking therapy changes the physical connections among neurons is, to my mind, a marvelous affirmation of dynamic psychotherapy. Hard evidence that it makes a difference! Words, not just molecules, matter. I feel better armed in the evidence-based battles that rage these days about the efficacy of treatments. Beyond this, it also offers me a kind of containment as a therapist. It is the "structure of experience" that I am working toward changing, as Anne noted, but the construct no longer feels as abstract.

One of the major cornerstones of this perspective is known as the social brain hypothesis. That evolution has favored the emergence of a primate brain exquisitely attuned to making sense of social interaction and small group experience. This social brain conferred competitive advantage to those who learned to use these new talents. The right brain has specialized in the ability to instantly (.2 seconds) "read" (decipher) non-verbal cues (e.g. facial expression,

⁶ Blakemore, S.J. and Frith U. The Learning Brain. Oxford, England:Blackwell Publishing, 2005

tone of voice, posture, gesture, smell) and determine (non-consciously) the intention of the other (e.g. friend or foe). The discovery of mirror neurons that internally and instantly replicate the expression and gestures of others allows us to sense/intuit what they are feeling and intending. So much processing of emotion-based information goes on at a non-conscious, implicit level that we can be left with some doubt as to the relevance of consciousness at all. It is true that explicit awareness of what's happening and what it means follows shortly after (.6-.9 seconds), allowing for much more complex thinking and consideration of consequences. Still, many of the decisions and actions we believe we are consciously making turn out, literally, to be an afterthought -- it already was experienced, decided, and done before we were conscious of the choice.

Given this, it's interesting to remember that Freud understood the presence and power of unconscious motivation of behavior. What he could not have understood, however, was how non-conscious experience and organization dominates mental life, and that repression plays a relatively small part in structuring the non-conscious self.

I find the IPNB perspective very compelling. Understanding some things about the brain – the social brain in particular— deepens my understanding of myself and other people. Understanding how we come to “know” what we and other people intend by learning about mirror neurons, interoception (knowing what we feel inside our body-minds), and empathy, equips us better to think about others and ourselves. This emerging perspective has helped me integrate my experiences as a psychodynamic therapist with the research driven view that we internalize our earliest relationships, that these give shape to our very minds; that our right brains unconsciously help us navigate the social world; and that we continuously help one another regulate our experiences of self and the world.

One of the powerful points of convergence for me of neurobiology, attachment theory, and psychodynamic psychotherapy involves the idea of mentalization – the cognitive capacity to make sense of our own and other's emotional experiences and intentions. The capacity to know another's mind begins early in life. (An infant will look to where you are pointing, understanding that you intend her to look

there. Four year olds have sophisticated “theories of mind.”) This capacity is based on the functioning of several brain areas (found to be missing in autistic children), and is also inhibited when we are emotionally aroused. Secure attachments support the emergence of robust mentalization, which in turn, helps with affect regulation and the construction of a personal narrative. Fonagy and others argue that effective therapies of all kinds work because they model and support the patient’s capacity to mentalize --- to think in an integrated way about their own and others experience. This perspective gives rise to important insights about work in psychotherapy, with individuals, couples, and groups.

It now seems safe to say that psychotherapy works by providing corrective, here-and-now experiences that actively reshape neural pathways, creating new patterns of response to emotional situations. This perspective also suggests that changes come about through the building of new connections, rather than the excavation and examination of old ones.

As a dynamically-oriented clinician, this means that while I want to pay attention to the role of the past, I am more and more interested in the here and now, in new corrective emotional experiences than in exploring the past, recovering memories, and interpreting meanings. So, for example, with a patient who is distressed about my vacation, instead saying that it reminds him of never being that important to his father, I suggest that he and I have some things to work out – that it does seem that my going away left him in the lurch, that I can see how and why he’d feel that way. Can he and I discover a way of working with his feelings about my choices that addresses how he feels while honoring our differences? From this perspective, interpretation is less important than the lived, shared emotional reality between therapist and patient

I think that for clinicians, parents, and teachers one of the takeaways from the new neuroscience involves paying extra attention to arousal states, positive and negative; learning and teaching how to regulate them. Also, encouraging the emergence of the capacities for reflection and delay – which further helps with emotion regulation and mentalization. Positive affective states open us to experience, and constitute the essence of secure attachment. John Gottman and others have data indicating that systems – including couples – thrive

when the ratio of positive to negative states is greater than 3 to 1.⁷ Negative states promote defensive, fight-flight reactions and behaviors that shut down thinking and impair interpersonal abilities.

Helping our patients – individual, couple, group — learn to monitor and control these states is a powerful assignment from the perspective of interpersonal neurobiology. Teaching couples about flooding, about time-outs to self soothe, about the impossibility of resolving issues when angry, are all essential elements of successful couples treatment. Helping parents parent teenagers by paying attention to and managing arousal - their own as well as their children's - is again a very helpful approach. Learning to do this for ourselves, as clinicians, can be life changing.

IPNB is not simply a new integrative theory. It also suggests that we can, more directly, know our own experience, learn to regulate it, and learn to be more effective in our all-important social relationships. It also broadens my identity as a dynamic clinician by providing me with linkages to important new knowledge and new ways of practicing. But as much as anything else, I find great satisfaction being interested in and capable of following some of the most amazing science of our time – a science whose language I am gratefully learning.

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⁷ Gottman, J The Marriage Clinic N.Y. Norton Books, 1999