Chapter 7

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Intuition in a Nonlinear World

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I. Introduction

In line with a rationalist, reductionist mindset, much of Western society privileges the role of conscious deliberation over nonconscious intuition. In this chapter, I argue in favor of reversing priorities. When dealing in a nonlinear world replete with uncertain, incomplete, and contradictory information, I propose the elevation of intuition as the broad foundation upon which deliberation then can operate in more limited capacities. I write this chapter from the perspective of a clinical psychologist immersed in private practice for more than 30 years, who has written two books on clinical intuition (Marks-Tarlow, 2012, 2014). I not only believe clinical intuition lies at the heart of effective psychotherapy, but also more broadly that intuition lies at the heart of effective living. I perceive a need to cultivate and honor intuition within contemporary society on two fronts—as a highly personal and individualized way to access one's unique inner truths, and as a quick acting, internally-based navigational system in response to continual bombardment of information from the outside in.

I propose a developmental model by which intuitive faculties get shaped and sharpened by early attachment and free play experiences that coordinate and integrate sensory, motor, affective, imaginal and behavioral systems and promote open social exploration in the context of self-trust (Marks-Tarlow, 2012, 2014b). From within the nascent field of interpersonal neurobiology, I identify intuition primarily within the nonverbal, implicit realm of learning, memory, perception and response (Marks-Tarlow, 2012; 2014a, 2014b; 2015b). Implicit processes rely on quick-acting, subcortical processes (Kahneman, 2003) that facilitate automatic and effort-free learning within the context of ongoing experience (Claxton, 1997).

Kahneman (2003) proposes a dual process theory of mind that includes Type 1 and Type 2 thinking. Intuition corresponds with Type 1 thinking, which operates automatically to process information quickly, as influenced by current context, immediate sensory and other biological factors, using implicit (including affective, relational, and procedural) memory, based on direct experience. By contrast, Type 2 thinking is slower, more deliberate, controlled, effortful and intentional. There are many forms of intuition, corresponding to different personal styles (e.g., gut feelings, hunches, flashes of insight) as well as different domains of intelligence (e.g., Gardner's (2006) musical, visual-spatial, bodily, logical, mathematical, intrapersonal, and interpersonal). I have previously identified creativity as flourishing at the edges of multiple intelligences (Marks, 1989), where they can cross fertilize with one another. As Richards (2010) notes, a number of researchers consider intuition to be at the core of creative functioning. Some forms of intuition, such as are illustrated in the first and third vignettes below, are more body-based, while others may rely more on visual or other sensory types of imagination, or even the spiritual ability to transcend the body altogether.

No matter what form intuition takes, it relies more on implicit than explicit processing. Implicit is the earliest form of learning and occupies center stage for the first two years of life (Schore, 2001, 2010, 2012). Whereas explicit learning and memory require an understanding of language, implicit learning does not depend upon words, but instead relies upon experiential immersion within domain specific contexts. During the first two years, implicit learning is primarily nonverbal, perceptual, behavioral, and relational. This realm includes emotional learning memory that derives from relational sequences, beginning within the first hour of the first day of postnatal life. The implicit realm also includes procedural memory, which consists of motor sequences such as walking, dancing, or sitting down to eat a meal. While the development of intuition, in any of its

multiple forms, evolves to include verbal and conceptual elements down the line, its earliest manifestations originate within a somatically-based strata of experience that is online from birth and further shaped through early relational experiences. From a developmental and evolutionary perspective, I connect the operation of intuition with the automatic operation of social instincts as partly hardwired and yet softly-assembled within the mammalian brain.

From a neurobiological perspective, intuition tends to be lateralized to the right-brain, which includes subcortical processing of material (McGilchrist, 2009) that then can bubble up whole to the surface. Some forms of intuition, such as musical improvisation, rely on turning off most of the frontal cortical areas altogether while enhancing sensory cortices (Limb & Braun, 2008). When conscious levels are more involved, intuition appears primarily mediated by the default mode network (DMN) (Chan & Siegel, in press). The default mode network, which centers on medial, frontal areas of the cortex, enables us to turn away from external tasks in order to attend to internal personal and social concerns, whether this consists of daydreaming, musing about a creative project, or speculating about what the people around us are thinking and feeling.

In the chapter to come, I link intuition with central features of nonlinear science and assert that our intuitive mode of processing information is better suited than our deliberative mode to capture the full complexity and nuance of an inherently complex and nonlinear world.

II. Summary of my Topic

To make my case, I present three brief vignettes followed by descriptions and explanations of their nonlinear elements.

Scenario 1: Simple Intuition in Everyday Life

> Two good friends, Greta and Carmen, gather for lunch on a Sunday afternoon and decide to try out the new Mexican restaurant in town. As Greta scans the menu, she immediately feels drawn towards the carne asada tacos. By the time she's read all the way through, she confirms that this is exactly what she wants to order. Carmen, by

> contrast, has a very different experience. She reads the menu over and over, cycling repetitively between possibilities. She isn't sure what she wants to eat and verbalizes her indecision aloud, discussing her concerns, questions, hesitations, and options with Greta as well as with the waiter, who grows more and more impatient by the moment. A full fifteen minutes go by before Carmen finally orders the chiles rellenos, all the while exuding an aura of uncertainty and self-doubt.

Most of us have had experiences like this. Some of us may even sport this kind of indecision. Whether in self or other, the process easily becomes tedious, if not agonizing. In the scenario above, Greta quickly and effortlessly was able to tap into her intuitive sensibilities, whereas Carmen was not. Stated a bit differently, Greta readily connected with the somatic markers (Damasio, 1996; 1999) of her embodied core, which were helpful for making what was, in this case, a body-based decision—what she most craved to eat. Meanwhile, Carmen had less access to this more primitive, interior level of self.

Through this simple example, we see that intuition does not have to constitute some extraordinary form of extrasensory perception. Quite the opposite, intuition often involves a particular way to know oneself directly, including knowing oneself well enough to declare a stance or preference in the face of ordinary, yet open-ended, information-glutted or ambiguous situations. The kind of everyday intuition demonstrated in the vignette above dovetails with Richards' (2010) writings about everyday creativity. Both involve mundane events with moment-to-moment attention to process, that involves attention to *how* we do what we do and whether we are able to bring fresh eyes to the task at hand.

This restaurant scenario is just one of a host of other affectively-driven decisions, such as how to communicate with someone who doesn't speak our language or how to detect danger or safety within strangers, that depend upon an innermost layer of a felt self. The embodied core that exists in everyone includes exteroception, i.e., perception of the outer world via the various senses, as integrated with introception, i.e., inner perception of the state of the viscera

and other bodily functions. Researcher Alan Fogel (2009) uses the term "embodied self-awareness" to highlight this body-based stream of awareness as it contrasts with a second, more thought-based stream he calls "conceptual self-awareness." These two streams of awareness correspond nicely with Kahnemann's Type 1 and Type 2 forms of thinking. Whereas conceptual self-awareness is frozen in time and slow to change, embodied self-awareness remains ever in flux, rapidly shifting in response to moment-to-moment internal and/or external changes.

In the restaurant scenario above, Carmen demonstrates difficulty with rapid and flexible response, possibly suggestive of a functional dissociation between conceptual and embodied forms of self-awareness. Integration between inner and outer sensibilities tends to be lateralized to the right orbitofrontal hemisphere of the brain (McGilChrist, 2009). Such integration promotes an intuitive feel for how inner sensibilities collide or blend with outer circumstances. Carmen appears to lack the intuitive capacity to integrate inner and outer faculties as guided by the holistic processing of the right brain; instead, she "tilts to the left," compensating for her lack of somatic awareness with an over-reliance on her cognitive, analytical faculties.

I perceive one major problem with Carmen's strategy: No amount of intellectual weighing of factors can work to bring about the "right" decision, especially when it comes to aesthetic preferences. More broadly, no analytic system or algorithm exists that guarantees a "correct" solution. This holds especially true when we face ambiguous situations or struggle to make decisions in the face of incomplete, too much, or contradictory information. Parallel processing that occurs at unconscious levels appears to be one reason why the human mind can handle an overload of information so quickly (Betsch, 2008).

Every decision is different; every scenario is context dependent. The late developmental researcher Esther Thelen (Thelen & Smith, 1993, 1994) has revealed that even the simplest decision by an infant to reach towards an object or to take a step has multiple possible trajectories that are highly context-dependent. Every choice in life requires us to take into consideration the full picture in order to understand where we stand and what is best for us. From the thermodynamic perspective of Prigogine and Stengers (1985), all complex, nonlinear systems operate in far from equilibrium conditions, where there exists a continual flow of matter, energy, and/or information across open boundaries between inside and outside the system. From this theoretical perspective, the full context for any decision could expand to include nothing short of the entire universe. Due to this enormous complexity, including unforeseeable and unpredictable twists and turns of fate, for many decisions it can be difficult to discern right from wrong. Even a seemingly "wrong" decision can have surprising and unexpectedly positive results, while an obviously "right" decision may have unintended negative consequences.

III. Nonlinear Aspects of Intuition

In order to understand important nonlinear characteristics of intuition, let's examine some properties that surrounded Greta's ease of decision-making:

III.1 Recognizing nonlinearity

We human beings are complex creatures. Our brains have more interconnections among their neurons than the entire number of atoms in the universe (Edelman, 2001). Our brains also teeter on the edge of chaos, displaying some amount of order, yet enough variability for quick adaptation to an ever-changing environment. There is even variability at the center of our beating hearts—quite literally. This is one way that nonlinearity expresses itself deep and quite invisibly

within much of our human physiology. Whereas traditional Western medicine asserts health in the form of predictable stability and regularity, when examined at the micro level, the dynamics of a beating heart reveal quite the opposite state of affairs. In between each and every heart beat is a tiny bit of variability in the form of nonlinearity that keeps us resilient and healthy.

In the vignette above, an infinity of nonlinearly interrelated factors plus accompanying uncertainty and unpredictability existed. Although the restaurant scene might seem straight forward enough, this is largely because our human perceptual and conceptual faculties are wired to reduce stimulation to the minimum of what is needed to deal with the situation at hand. The infinite number of nonlinearly interrelated factors so common to everyday life could be one reason why the faculty of intuition evolved to guide us through the mess.

When dealing with the full complexity of life, due to this kind of nonlinearity, it becomes difficult, if not impossible to predict how things will turn out with any degree of certainty. This especially holds true for events that will occur far off into the future. Nonlinear conditions necessitate that we must take risks and move through life by trial and error without too much self-judgment. We do our best to unify all considerations, partly by emotionally "marking" what is salient, most meaningful, most desirable, etc. But due to nonlinearity, at some point we need to surrender not-knowing what will happen. Even if we know what we want to order for lunch, in this particular restaurant, the food could taste lousy. If we don't surrender to the unknown in this way, just like we saw with Carmen, the rational mind will just go round and round in circles, attempting to weigh everything in piecemeal fashion, until the process is arbitrarily cut off by some outside force.

As a clinician, I call this kind of surrender to the unknown the "warrior's stance" (Marks-Tarlow, 2011, 2012). While rather trivial in this restaurant example, the ability to move

towards the unknown despite how scary this can feel becomes especially important for facing major life decisions or transitions. Due to nonlinearity in combination with the full complexity of underlying factors, we can never predict exactly how things will turn out or how we will feel in the face of it all.

III.2 Emergence of the Whole as Greater than the Sum of its Parts

When we allow ourselves the time for decisions to simmer in the unconscious, we permit the fragments of sensation, perception, impulse, conflicting motives, etc. to have the chance of becoming coordinated and integrated with one another. This nonrandom process of combination and recombination is especially important when intuition is used in service of creativity, which also tends to draw upon the holistic sensibilities of the right brain, versus the detail-oriented, fragmenting sensibilities of left-brain analysis (McGilchrist, 2009).

Because Greta lacked conscious awareness of underlying processes, her decision was emergent. This is an important running theme throughout this book. There was an immediacy to Greta's decisiveness. She knew what she wanted to eat without needing to think about it. By the time she had absorbed information from the menu about all possibilities, her decision had already been made. Knowing came in the form of a discontinuity, i.e., sharp bifurcation point from not-knowing. Greta's process was also effortless. She didn't have to work at making a decision. Instead, the answer came naturally and easily, emerging as a whole, as a function of being fully immersed in context and having access to her inner truths. Greta's understanding of her own self in relation to the outer world also had the quality of being automatic, such that the workings of her intuition needed no work or guidance. She knew what she wanted without any sense of the underlying processes giving rise to her preference.

Psychologically, with respect to many dilemmas in life, when aligned with our intuitive core, decisions often have this quality of emergent wholes. This is why, as a clinical psychologist, I often say to patients, "We don't make decisions; rather, decisions make us." If we struggle too hard to know what to do, this tends to be a sign that we are not yet ready to decide; instead, we need more time.

Intuition possesses these qualities of immediacy, effortlessness, automaticity, emergence, and holism precisely because of its bottom-up processing (Marks-Tarlow, 2012). Bottom-up processing means that all of the components that go into intuitive decision begin with nonconscious processing that occurs beneath the surface of awareness. The underlying process is rendered invisible, both to us as outside viewers, as well as to Greta as the person making the decision, with results that bubble up whole into consciousness. Intuitive decision-making tends therefore to be holistic in that solutions or answers emerge into consciousness in their entirety, as a completed act. There is no need for further processing. The answer is simply known.

III.3 Recognizing Patterns and Deeper Meaning

Scenario 2: Intuition within the Nonlinear Dynamics of Creativity

> I sit down to write this chapter. Immediately, I remember successes I've recently had writing papers and books by recycling and recombining elements of previous writings. Filled with a desire to quickly and easily finish writing this chapter, I try to adopt the same method by initially approaching the task mechanically, by using a simple algorithm, procedure, or heuristic. I comb through previous writings and throw bits and pieces of sentences and paragraphs into one file. When I finish this, I simply sit, immobile, staring at my computer screen. Although previously effective, when I first felt inspired to develop this strategy, currently this approach doesn't work. I sit and sit. Nothing comes. I feel paralyzed and go an entire day without writing a word. I am tortured by the process and can hardly bear looking at the screen, much less sorting through the mess in front of me. Feeling discouraged, I go to bed and have a fitful sleep. Sometime around 2 A.M. I awaken with the rush of an idea. A whole new organization based on scenarios emerges from an unseen, unconscious source. I rise

> early the next morning and quickly and effortlessly lay out the organization before you. The writing goes smoothly and rapidly, with no more writer's block.

I highlight my own writing process partly because of its self-referential quality. When the very content about which I was trying to write became enfolded within the process itself, this harkens to a similar kind of complexity I face as a psychotherapist on a daily basis. Therapists are in the business of finding patterns and seeking meaning. Time and time again, a patient will talk about a theme that applies to some dimension of their life outside my office that somehow finds its way into the very process of our communication and relationship together. A patient may feel victimized by a controlling mother and then respond to a suggestion I make angrily, as if I too am trying to control them. But self-referential processes like these usually take two to tango. More often than not, as I observe a patient's process during psychotherapy, at some point I find myself self-referentially drawn into the very same drama. The counterpart to my patient feeling controlled by me might be me feeling frustrated by my patient's passivity, in turn prompting me to push them towards action.

This kind of mutual, self-referential dynamic, by which patients and I live out the dynamics under discussion is called an enactment. When psychotherapy first emerged under the umbrella of psychoanalysis, the analyst was supposed to be a neutral observer who sat outside of the patient's world, delivering insight through interpretations. This perspective is now considered a one-person psychology, since the only person of relevance in the room is the patient. From this perspective, enactments were considered pathological and regressive in nature. Current day relational psychotherapies have turned this perspective on its head. Psychotherapists are encouraged to bring their full subjectivity and personhood into the process. The fully relational perspective of intersubjectivity therefore involves two people, with the relationship between them considered an emergent property.

From an intersubjective perspective, when enactments happen, they bring the topics under discussion alive. By living out the emotions and their intensity within the context of our relationship, the patient/therapist dyad increases the chances of reaching a different resolution from the traumas that originally brought the person into psychotherapy. That said, at the same time as I am drawn into enacting the dynamics, I do my very best simultaneously to observe the process. Otherwise, I and those with whom I work are in danger of traumatic repetition. In fact, if I am not very careful, I and other therapists can unwittingly trigger iatrogenic (doctor-caused) conditions.

The complex, recursive condition of trying to observe the very dynamics in which we are unconsciously caught has been called the "boot-strapping problem" by the late psychoanalyst, Steven Mitchell (1997). I have written quite extensively about this kind of recursively enfolded dynamic in *Psyche's Veil* (2008), a book that aims to apply chaos theory, complexity theory and fractal geometry to clinical practice. Here is Mitchell's description of the boot-strapping problem.

> Generally speaking, the analyst, despite his best intentions, is likely to become entangled in the very same web he is trying to get the patient to explore. So the analyst making an interpretation of the patient's tendency to eroticize interactions is likely to be speaking from an eroticized countertransferential [feelings towards the patient] position in his own experience. The analyst making an interpretation of the patient's tendency to transform all encounters into battles is likely to be feeling embattled himself and trying to use interpretations as a potent weapon in his arsenal. And the analyst making an interpretation about the patient's masochism is likely himself to have felt victimized by the patient's long-suffering misery and is speaking in a voice laced with exasperation. Thus, the analyst's experience is likely to be infused with the very same affects, dynamics, and conflicts he is trying to help the patient understand (1997, p. 46).

From a nonlinear perspective, the whole of things is often self-referentially present in the pattern of the parts and pieces of experience. Previously (Marks-Tarlow, 2008, 2015b), I have referred to this quality of pattern detection as fractal consciousness, which also may be

considered holographic in nature. As a clinical example of this of property, nonlinear couple's researcher John Gottman has touted his ability to experience a couple for a mere matter of minutes before predicting with over 80% accuracy whether or not that couple will remain married ten years later. Gottman's research uses a similar kind of coupled differential equations that Lorenz employed to demonstrate chaos in the weather. Formally through his research as well as intuitively through his observations, Gottman's work involves examining feedback cycles related to the relative balance of positive to negative emotion (Gottman, Murray & Swanson, 2005), especially as expressed nonverbally, at implicit levels. Isn't it ironic, if not paradoxical, that a nonlinear researcher interested in chaotic emotional exchanges has become famous for his powers to predict people's viability of staying together as a couple? He honed these skills by recognizing patterns, like descent towards divorce, as well as parameters that controlled them, like nonverbal communication styles.

The late [and great] Nobel Prize–winning physicist Richard Feynman (1955) once remarked, "Nature uses only the longest threads to weave her patterns, so each small piece of her fabric reveals the organization of the entire tapestry." While the fabric and threads are of interest in their own way, all forms of intuition concern the tapestry as a whole. In the beginning of his book, *Blink*, Malcolm Gladwell (2005) referred to Gottman's intuitive powers as "thin-slicing." From my nonlinear perspective, Gottman is demonstrating fractal consciousness by his powers to perceive the whole of a couple's dynamics from the tiniest slices of exposure. Recursive fractal patterning is common lore within the psychoanalytic community, where it is said that the whole of treatment is enfolded within the first session. It is also said that the whole of any given session is enfolded within the first few rounds of exchange during the therapeutic hour. These fractal concepts reveal the holistic nature of

psychotherapy, which stands in stark contrast to reductionist, piecemeal approaches to psychotherapy currently in vogue. Whether emerging in psychotherapy or during the creative process, in order to understand the neurobiological origins of this kind of holistic tuning in, it is helpful to understand some workings of the human brain.

III.4 Modeling the Neurobiology

In the second scenario, writing a chapter tends to be a solo enterprise, such that intuition is an internal affair that taps into some combination of expertise and creativity. By contrast, clinical intuition at the heart of psychotherapy is interpersonal in nature. The developmental roots of the interpersonal sort of intuition, by which spouses or therapists implicitly understand how to tune into and understand the needs of others, lay largely in the care circuit of the mammalian brain.

Many mothers have the off sense of not being able to think clearly during pregnancy and early motherhood, yet they interact with their babies in a perfectly attuned fashion. One aspect of attunement is the presence of mirror neurons in premotor areas of the brain, which help to mediate behavioral mimicry (e.g., Iacoboni, 2008) and serve as a somatic precursor to emotional state matching. Parental empathy involves coordinative dynamics by which we humans use our own experience to recognize and understand the needs and experiences of others. In all normal humans, there exist two neural pathways for empathy (Decety & Ickes, 2009; Decety, 2011). One circuit involves affective resonance, or emotion sharing, a limbic neural pathway that includes the amygdala and is centered primarily in the right ventromedial prefrontal cortex. Evolutionarily, affective resonance helps mammals cohere into social groups as well as to remain safe and securely connected. Affective resonance illuminates one reason why babies so often cry upon hearing other babies cry, and why fear can spread so quickly and contagiously through the jungle among potential animals of prey.

The other neural circuit for empathy is more cognitive in nature, includes the superior temporal sulcus region while residing primarily in the dorsolateral prefrontal cortex. This cognitive capacity, also called theory of mind (e.g., Baron-Cohen, 1991), comes into full bloom later, around age 4, as children become more fully able to take the perspective of the other. This cognitive dimension of empathy not only involves the ability to put ourselves into the shoes and world views of another, but it also allows us to track differences in perspective between self and other. Whereas mothers tend to rely more on the affective aspect of parenting, fathers tend to lean more on their cognitive abilities (Abraham et al., 2014). Yet, however they lean, in both cases, both mothers and fathers must intuitively feel their way into relationship with their baby.

From an evolutionary perspective, it is easy to see the advantages of sound maternal (and paternal) intuition. The better the inborn ability of a mother (or father) to tune into the unique and idiosyncratic needs and feelings of babies, the better the chances of their survival plus capacity to rear offspring their own successfully. Securely attached babies grow up with the dual capacity to tune into the needs and feelings of others as well as to tune into their own needs and feelings. From an ethological (the comparative study of animal behavior) point of view, it is informative to understand that maternal intuition involves bottom-up and emergent processing primarily because these capacities are not just restricted to human beings. Instead, the same limbic neural circuitry is shared by all social mammals, allowing them to live in groups and care for their offspring (Panksepp, 1998; 2012).

Meanwhile, one important aspect of the nonlinear element within all human relationships stems from the coupled dynamics between people, where mind/body/brain rhythms get synchronized and two people operate as an indivisible whole. Research by Guastello, Pincus and Gunderson (2006) shows that even in strangers, there is coupling of Galvanic Skin Response (GSR)

during turn-taking in a casual conversation. As fMRI scanning gets more sophisticated, and is better able to measure two brains simultaneously immersed in relationship to each other, more and more evidence for neural extensive coupling emerges (see Marks-Tarlow, 2014c).

III.5 Intervening with Patients

Coupled dynamics appears to be central for effective psychotherapy. One model of psychotherapy (Marks-Tarlow, 2008) is of the patient/therapist dyad becoming increasingly coupled over time, moving as a synchronized pair to the edge of chaos, where novel outcome can later spontaneously and unpredictably emerge. This trajectory can only happen if both the therapist and patient approach the work of psychotherapy with an open state of mind. The power of preexisting concepts to bias subsequent experience prompted Wilfred Bion, a British psychoanalyst, to emphasize the importance of *not-knowing* as the necessary quality of attention during psychotherapy (Bion, 1967). By suggesting that we "set aside all memory and desire" before each session, Bion recommended we clear out ideas derived from the past, along with hopes and projections that reach toward the future. Herein lies the value of a wee bit of chaos and unpredictability in the treatment process.

When psychotherapists sit before a real person in a real moment, in order to be effective and therapeutic in dealing with the nonlinear and utterly complex nature of life circumstances, they need to adopt an open, inquisitive frame of mind. As noted by Richards (2010), openness to experience is also an important general quality of mind that appears to cut across multiple domains of creativity. I suggest that clinical intuition in service of effective psychotherapy should be considered one important form of interpersonal creativity.

In the heat and heart of the clinical moment, it is intuition that primarily guides therapists safely through the complexity and uniqueness of the dynamics at hand. Attuned emotional

response guides unconscious choices of where to focus—whether to attend to content of narrative or relational process; focus on past or present; switch to somatic elements; come forth or hold back, speak or stay silent. In each moment, every psychotherapist faces thousands of choices. All are for the most part mediated implicitly, not explicitly. Within talk therapy, attunement relates less to the content of speech, or *what* we say, and more to the processes of speech, or *how* we say it—tone and rhythm of voice (prosody), posture, body movements, facial expression, and eye gaze. These paralinguistic vocal, visual, facial, and postural cues are all part of the emergent, self-organizing level of implicit relational knowing (Lyons-Ruth et al., 1998; Seligman, 2012).

In the case of psychotherapy, we clinicians continually pick up signals about what may be going on both emotionally and even unconsciously in the minds and bodies of our patients. Much of this work occurs beneath the surface of awareness in subcortical limbic structures like the amygdala, anterior cingulate and insula, where intuitive processing of other and self-in-relationship-t0-other starts before emerging fully formulated into consciousness. Emergent intuitive process help us to read both our own states of emotional and physiological arousal as well as those of our patients. Implicit relational processes such as these shape Bowlby's internal working models, by forming social expectations and coloring the emotional tone of ongoing experience. The scenario that follows shows the importance of retaining an open mind in the face of not-knowing, while trusting emergent intuition in action.

Scenario 3: Clinical Intuition during Psychotherapy

> I sit in my office when the phone rings. A potential patient inquires about psychotherapy. The man, whom I'll call Gus, gets right to the point. He tells me about a very specific problem: he sometimes feels like a woman inside, especially when making love to his wife. He's afraid this is interfering with his marriage and wants my help in eliminating this internal sensation.
>
> As I listen, my stomach tightens up in discomfort—not at the man's experience of himself, but more at the request he makes of me.

Here is our ensuing dialogue (from Marks-Tarlow, 2012, p. 33-34).

> I replied, "I seriously doubt that it's possible to rid yourself of this kind of experience. To be honest even if you could, I am not sure it would be a good idea to try."
> "What direction would you go instead? How could you help me?"
> "I can help you to understand the meaning of your experience," was my response.
> "But I'm not interested in insight," shot back Gus. "I just want to change my behavior."
> "This isn't just some bad habit you've developed," I protested. "Your experience is a vital part of who you are."
> Gus thought for a second and then concluded, "Well, let's set up an initial appointment and see what happens."

In several different papers (Marks-Tarlow, 2011, 2012, 2015a), I have delved into great detail about this very interesting case surrounding an eventual diagnosis of multiple personality disorder. As our therapy progressed, over time Gus wound up not only accepting his female alter, but even loving her out of the recognition of nuanced emotion and the capacity for prolific musical compositions she brought. I chose this brief clinical vignette partly because it highlights the often highly idiosyncratic nature of clinical exchanges. As is easy to detect, this opening telephone exchange was highly unusual. The interchange would have been difficult to anticipate, much less to script out in advance. This is precisely where clinical intuition comes in. In contrast to manualized approaches to psychotherapy like cognitive-behavioral therapy (CBT), intuition helps psychotherapists to navigate what is novel, including the unique interpersonal chemistry that emerges between each therapist and patient pair.

To emphasize clinical intuition in these ways contrasts with cookie cutter approaches to training, treatment, and research. Due to outside forces, like insurance companies and other third party payers that have little to do with actual healing, there is pressure for short-term, symptom-focused treatment that progresses in clear-cut fashion. Such reductive, step-wise approaches derive from assumptions of repeatability, consistency, and strict accountability. For example, the

medical model of treatment that is almost universally accepted and employed dictates the following invariant steps: diagnosis, treatment planning, treatment implementation, and treatment evaluation. In "Merging and Emerging: A nonlinear Portrait of Intersubjectivity during Psychotherapy" (Marks-Tarlow, 2011), I use the case of Gus to demonstrate how the order of these steps was violated over the many years of our psychotherapy together. With Gus, as with any complicated case, diagnosis actually followed treatment, emerging more as an outcome of the process than as a precursor. In the meantime, treatment evaluation was an ongoing aspect; it is critical for therapists alongside patients continually to collect feedback about what is going on, which then can be recursively folded back into the process. To consider the endeavor of healing the mind as if it can be broken down into the same component parts that are systematically transmitted and replicated by others is to violate the very holistic, emergent, unpredictable nature of people, their problems, and the intersubjective context of their healing and growth.

A fruitful direction for psychotherapy research is to seek trans-theoretical models of change that include universal elements of treatment that crosscut all schools of thought and diagnostic categories. One important recent candidate for a trans-theoretical model is the notion of memory reconsolidation (Lane et al., 2015). This theory suggests that when a memory is recalled, its molecular trace in the brain becomes plastic, such that the memory can be reconsolidated or 'saved' in different form as achieved through the therapeutic process. Marks-Tarlow and Panksepp (2015) provided commentary suggesting the importance of the quality of the therapeutic alliance in order for memory reconsolidation to occur during psychotherapy. Indeed, the quality of the patient-therapist relationship is widely recognized as a key universal factor for successful treatment (e.g., Nissen-Lie, Monsen, & Ronnestad, 2010). This consistent finding points towards the necessity of fit to promote stronger physiological and psychological

coupling, including the open exchange of emotion, arousal, and information necessary for the emergence of novel intersubjective outcomes.

Much like the early mother/child relationship, there is incredible specificity to each treatment, which depends intimately both on the goodness of fit between therapist and patient, as well as on the therapist's intuitive ability to tune into each individual as an individual. At the conscious, explicit level, from the start, Gus asked me to excise the woman that lived inside of him. Meanwhile, at the unconscious, implicit level, he needed just the opposite. From the start, I recognized the implicit truth by noticing and listening to the cues supplied by my own body. I experienced a glitch in my stomach, a sense of dread emotionally, a tightening in my throat, and a deeply felt sense of resistance about complying with Gus's request.

Implicitly, Gus required me to accept and honor all aspects of his experience, even realms of self that he detested. In service of Gus's wholeness, I needed to reject his stated request to kill the woman inside and offer Gus a different alternative. Explicitly, Gus protested that he had no interest in insight or finding meaning in his experience. Yet again implicitly, I recognized this was exactly what Gus needed, and that this could only occur in the context of interpersonal safety, where I would not shame this man for exposing such hidden, vulnerable aspects of himself. I believe that somewhere inside, Gus must have resonated with all of what was going on implicitly between us, even as he protested explicitly.

Unwittingly, Gus needed me to prove my very trustworthiness as a psychotherapist by protecting him against his very desire to do violence to himself—by asking for a diagnosis prematurely in service of trying to rid himself, first of the woman inside and later of the raging, abused and abandoned boy. Eventually, Gus came to understand that these impulses were actually part of the problem rather than the solution. Throughout the course of psychotherapy with Gus,

which lasted over a decade, we repeated this self-similar sequence of interactions over and over. I have previously written about the fractal, self-similar dynamics of these kinds of repetitions (Marks-Tarlow, 1999, 2002, 2005, 2008, 2011). Only by tapping into my own intuitive foundation—the side of me that gripped inside when I heard his request—could I resist stepping into these landmines in order to navigate through this multi-layered, highly complex interpersonal landscape.

Clinical intuition is what fills the gap between theory and practice. Where theory is static, intuition is alive. Where theory exists outside of real time, intuition involves immersion within the lived moment. Where theory attends to similarities between groups of people, clinical intuition attends to the particulars of *this* person, in *this* room, during *this* moment, given *this* developmental history. By guiding moment-to-moment perception of patients as focused through the lens of the self, this mode of information processing cleans the slate of top-down preconceptions. Therapists can begin anew, in line with bottom-up processing of raw data as it emerges from present-centered, embodied experience. Intuition allows us to tune in and pay exquisite attention to interpersonal detail, context, and distinctions. Because of this level of specificity, I assert that clinical intuition is necessary, though not a sufficient, ingredient for deep change during psychotherapy. Finally, as a critical element for change, clinical intuition is a two-way street that exists and becomes activated both in therapists and patients alike during the course of successful psychotherapy.

When ongoing, deeply transformational psychotherapy is conceived intersubjectively, full engagement between therapist and patient creates an emergent, indivisible whole. The coupled therapist/patient system takes on a life of its own to operate beyond reductive analysis. Previously (Marks-Tarlow, 2011), I have outlined and illustrated five key principles of psychotherapy from the perspective of nonlinear dynamics:

1. A nonlinear relationship exists between diagnosis and treatment, as described above, when symptoms shift unpredictably with treatment, and diagnosis emerges out of the process instead of preceding it, as steps of the traditional medical model would dictate.

2. The intersubjective field is a complex web of feedback loops operating continually on multiple time scales and descriptive levels. Alongside consciously processed information, feedback loops also include unconscious emotion and motivation as well as synchronization of neural wave patterns and physiological arousal states.

3. The coupled therapist/patient system self-organizes implicitly towards the edge of chaos, which is an inherently unstable realm poised between two different attractors. Within psychotherapy, as the patient/therapist dyad approaches phase transitions at the edge of chaos, it is common for unpredictability to increase, as elements of old and the new attractor states become chaotically mixed together, including rapid switching between the two attractor realms.

4. At the fertile edge of chaos, at the point of passing through phase transition zones, then novelty and greater system complexity can emerge spontaneously and become stabilized into a new attractor region over time. Within a highly coupled, fully intersubjective type of psychotherapy, it is not possible for the patient to change without also deeply affecting the therapist. It is my experience that in cases of significant transformation , *both* the patient and the therapist undergo spontaneous growth, change, and novel emergence.

5. Core therapist/patient dynamics are often expressed as recursive, fractal patterns. In the case of Gus, one core dynamic consisted of self-similar patterns of “holes transformed into wholes.” Stated differently, over and over again, therapy addressed highly conflicted, dissociated aspects of self that Gus initially resisted owning and feeling, but which I defended, thereby serving as a safe container for fuller integration over time.

Conclusion: Intuition and Nonlinear Praxis

Nonlinear dynamics are central to psychotherapy, not just in the unpredictability of change, but also in the unpredictability of triggers for change: transformative moments characterized by sensitive dependence as it can operate at the edge of chaos. As a therapist, sensitive dependence means I never know what will make a difference to a patient or when it will happen. All I can do is to follow my intuition as closely as possible and then gather feedback in order to deliberate more consciously about how things are going. At times, I might feel as if I've made a "brilliant" interpretation, yet it falls flat. At other times, I might feel as if I've tossed an irrelevant comment into the session, yet it proves to be transformational to that person in that moment. This is sensitive dependence in action: somehow, without knowing how, I've implicitly found just the right thing to say at the right time, and a cascade of change occurs from that micro-moment in therapy, rippling across larger and wider space and time scales of life. This is the unpredictability of psychotherapy and all its glorious nonlinearity in action.

Whether during psychotherapy or during the creative process, not knowing to what degree, when and how change will arise is part of the larger unpredictability of life. The nonlinear course of life means that tiny events sometimes will have huge consequences, while huge events at other times may not change our lives much. Much depends upon whether or not we are operating internally near the edge of chaos, far from equilibrium, where we are most open to novel emergence. Artists and people who suffer from dysregulated emotion tend to live closer to the edge of chaos, while others with more rigid personality styles tend to live further from the edge of chaos.

The nonlinearity and unpredictability of the process lends an air of openness and excitement to ongoing events, plus the perennial hope that no matter how bleak things look now, they can "change on a dime." In the case of Gus, the edge of chaos at points felt to me like a train running

off its tracks. By contrast, it was a tiny observation that Gus made of my posture and facial expression one day that signaled new stability and enhanced trust between us. Indeed, often the tiniest, most invisible difference is the one that makes a difference in re-organizing the system. No matter how much anyone may grope with a problem or creative block in the darkness, it takes only the slightest tweak in one seemingly insignificant underlying variable for new light to appear.

This kind of variability is the stuff of life. As a mother with zero experience caring for babies, I found my intuitive side anyway, preferring not to consult any how-to manuals, but instead to simply dive in. As a clinical psychologist, I am steeped in it. I have probably seen hundreds of depressed people in the course of my 30+ year career. While linear statistics might put them all in the same diagnostic box, to me in real life, no two have ever looked exactly alike. Indeed, if they did, I would have been bored out of my mind and not skilled enough to treat them. The closer I look at each person—whether depressed or not—the more unique that individual appears. Welcome to the realm of the nonlinear. As an artist who likes to illustrate my own ideas, the more I trust my inner life, the more intuition finds a conduit through my imagination.

A nonlinear perspective on psychotherapy led me to write both a textbook and a workbook on the importance of clinical intuition during psychotherapy (Marks-Tarlow, 2012; 2014). The centrality of intuition is hardly acknowledged in my field, yet just about every clinician I meet expresses relief at validation of what is inwardly felt. Although intuition is largely an inborn, nonconscious faculty that can't be bottled up or directly taught, its operation can be brought to conscious awareness and its element can be cultivated. I strongly believe all of this should be highlighted in clinical training programs and supervision.

At the same time, please note that clinical intuition is not some magical cure or sure-fired elixir. Whether occurring as a gut feeling, a hunch, or a sudden insight, sometimes intuition can

be off. Any time a clinician operates from the gut in the heat of the moment, it is very important not to blindly trust intuition but to follow up by gathering feedback from multiple sources, that is, by watching closely what happens next, by checking in with the patient, by knowing one's own weaknesses and blind spots, by consulting with supervisors if symptoms keep worsening. These are important checks and balances to ensure the veracity and effectiveness of any clinical intervention. More broadly, by understanding the importance of intuition in all walks of life, as well as its limitations—from everyday life to the classroom to the psychotherapy office—we give our society a better chance of enhancing novel solutions to ever more complex problems.

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