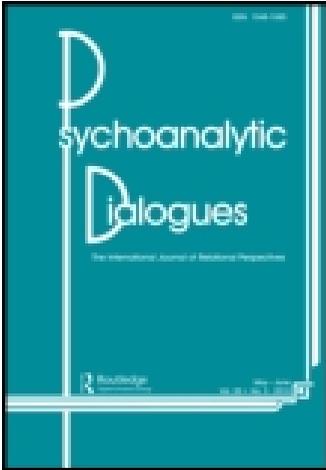


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## Commentary on Dynamical Systems Therapy: Theory and Practical Applications

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Nonlinear dynamics represents an important paradigm shift for understanding complexity, both in the world around us as well as inside of us. Many psychoanalysts interested in the new sciences employ the concepts descriptively. By contrast, Yakov Shapiro has innovated a practical method for applying nonlinear ideas to psychotherapy. In theory his ideas hold great promise; in practice, more work needs to be done.

As a fellow psychoanalytically minded theorist and practitioner highly interested in the relevance of nonlinear science to clinical practice (Marks-Tarlow, 2008, 2011), I am pleased to offer commentary on Yakov Shapiro's paper, "Dynamical Systems Therapy (DST): Theory and Practical Applications." In this second of two offerings for *Psychoanalytic Dialogues*, Shapiro's paper expands his previously laid-out model into a comprehensive dynamical system of psychotherapy.

The paper begins with a review of various scientific paradigms as they affect psychoanalysis. Shapiro (this issue) spells out various influences underlying classical psychodynamics. These include thermodynamics, determinism, the classical Darwinian paradigm, the medical model, classical Newtonian physics, and concepts of linear causality. By contrast, Dynamical Systems Therapy (DST) is affected by interactive neural network theory, emergence, neo-Darwinian paradigm, complex adaptive systems paradigm, quantum mechanics, and nonlinear dynamics. Shapiro understands nonlinear science as a metatheory that goes beyond psychoanalysis to underlie all theoretical orientations.

Shapiro's model employs an evolutionary foundation, concentrating on complex adaptive systems that self-organize by incorporating both biological and psychological processes. Shapiro aims toward a holistic perspective with conceptual language aimed at lessening the brain/mind divide. Along with linking first- with third-person perspectives, that is, subjective with objective levels, partly by offering the quantum mechanical notion of *complementarity*.

In Shapiro's (this issue) words,

A functioning human brain has both subjective and objective aspects to it, in the same way that a photon may behave as a particle or a wave depending on the experimental setup. These aspects of brain/mind reality are inseparable and irreducible to each other; therefore, asking whether a person

is “really” a biological organism or a mental being is meaningless, akin to asking whether a photon is “really” a particle or a wave. A functional system that achieves the level of complexity we describe as “a living person” has both subjective and objective aspects, and is therefore *inseparably psychobiological*. (p. 87)

Shapiro identifies three relevant parameters for applying DST to clinical practice:

1. Attractor/repellor states and adaptive landscapes as a means to contextualize and visualize the full range of context-dependent, patient dynamics;
2. bifurcations, which describe modes of change in complex adaptive systems, including shifts from one attractor basin to another; and
3. emergence and self-organization as principles by which unique and spontaneous novel order arises in complex adaptive systems.

Shapiro has innovated a technique to chart patients’ adaptive landscapes, which allows the therapist to attend to bifurcations, emergent dynamics, and system self-organization. By presenting a practical system of psychotherapy that includes diagnostic elements, plus distinct principles to guide therapist interventions, Shapiro makes a great leap forward.

Along with blending complexity science with relational psychoanalysis, Shapiro offers key conceptual differences between the classical psychodynamic paradigm, an object relations approach, and his dynamical systems model. Classical psychoanalysis adopts an intrapsychic perspective, where patient psychology is driven by internal biological drives. Energized by an animal-like “id,” the self appears inherently antisocial. The classical psychoanalyst strives to be a neutral observer who can objectively interpret the patient’s instinctual drives, defenses, and transference. By contrast, object relations theory offers an interpersonal perspective. Patient psychology is driven by the individual’s relational matrix, such that the self is inherently “prosocial.” From this opposite perspective, antisocial acts are mere by-products of a vulnerable self and unmet relational needs. The object relations therapist attempts to serve as a “good object” to counteract past relational trauma and compensate for arrested emotional and social development.

In contrast to these polarized positions, Shapiro’s Dynamical Systems Model presents patient psychology as a balance between self-oriented needs and other-oriented templates as shaped by dialectical evolutionary pulls and specific environmental contexts, what Shapiro calls “nature through nurture.” Current states, defenses, and transference dynamics can be mapped as features on the patient’s adaptive landscape, where they serve the function of negotiating the best self/other balance in light of the patient’s current social, physical, and material contexts. In order to map features of a patient’s adaptive landscape, attractors appear in the form of valleys and rivulets that represent entrenched emotional/relational/behavioral patterns, whether implicit/unconscious or explicit/conscious in nature, to which the patient is “attracted” again and again. Repellors appear as hillocks or mountains that represent emotional/relational/behavioral tendencies, whether implicit/unconscious or explicit/conscious in nature, which are either actively or passively avoided.

Multiple advantages exist to such a diagnostic system. It is both multimodal and synthetic in nature. Both subjective and objective information can be portrayed in simple, visual form. The visual nature of the map allows the clinician to avoid complex verbal formulations as well as the reductive use of language. The mapping system is inherently dynamic and flexible, capable of representing current patterns, malleable self states and developmental trends as they shift over

time. Adaptive landscapes also have the advantage of being able to fold in interpersonal dynamics, including the intersubjective field as lived in the present moment by patient and therapist. Finally, by representing all possible states of the patient's psychology, adaptive landscapes honor the fundamental unpredictability of living systems (one never knows where the patient will go next), alongside clear constraints (yet, all behavioral possibilities are laid out as features on the landscape).

With respect to Shapiro's second parameter of bifurcations, or change dynamics, Shapiro makes a useful distinction between first-order, quantitative adaptations and second-order, qualitative adaptations. First-order adaptations involve small, predictable changes that occur close to equilibrium. When a complex adaptive system exists close to equilibrium, there is little exchange of energy and/or information with the outside environment, and so the system remains within the pull of the same attractor. Second-order adaptations, by contrast, involve spontaneous and emergent shifts to new order, that is, new attractors. This type of large-scale, sweeping change occurs primarily in far from equilibrium conditions, when a high level of information and/or energy is exchanged across open borders. On adaptive landscapes, bifurcations appear as the edges between attractors and repellers. The more energy there is in the complex adaptive system, the greater its likelihood of its moving from one attractor system to another. At the same time, the deeper the gullies and/or higher its hillocks, the more energy the system requires in order for the system to shift to a new attractor.

The potential of adaptive landscapes to reveal energy-related aspects of psychotherapy is a significant way that Shapiro's DST breaks new ground. Especially from the neurobiological perspective of regulation theory, where emotional dysregulation is conceived to be at the heart of most psychopathology, the arousal dimension of psychotherapy is extremely important. Even more significant than whether negative emotion is present is whether whatever emotion is present is too intense to hold with equanimity, which brings the autonomic nervous system's arousal regulating aspect into front and center stage. Especially when working with highly traumatized individuals, there is widespread belief that therapists and patients must work at the edges of the regulatory boundaries in order to effect deep change. Within in the DST model, this translates to working in far from equilibrium conditions, otherwise known as the edge of chaos.

Shapiro outlines five salient points of the dynamic systems therapy model, illustrating each with a clinical example. The first point involves the necessity to map the patient's adaptive landscapes with primary attention to the here and now, where attractors manifest and are amenable to change. There is a shift in the therapeutic focus "from perceiving symptoms as clinical problems to be fixed to systematically analyzing them as the patient's adaptation to her developmental and interpersonal reality."

Because deep change occurs in complex, adaptive systems far from equilibrium, the second point involves the importance of the DST therapist shifting the relational dynamics farther from equilibrium, where deep change becomes possible. This requires the capacities to sit with discomforts and high arousal in the present moment. An interesting aspect of this stance is that it can flip upside down an understanding of therapeutic enactments. Not so long ago, enactments during psychotherapy were seen as highly undesirable, representing unconscious acting-out and regressive "slips" on the part of the therapist. Over time, they have become more accepted as a means to discover and work through problematic, mutually unconscious relational patterns. According to the DST perspective, enactments are not only acceptable but also become vital ways to capitalize on the natural energy of the system. Enactments help to bring the patient-therapist system

farther from equilibrium, inside that highly energized zone where deep transformation becomes possible.

Point 3 of the DST model involves providing a healthier adaptive environment in the here and now by achieving a better self-other balance. In Shapiro's (this issue) words, "The task in Dynamical Systems Therapy shifts from offering unconditional positive regard to *contingent responsiveness* aimed at helping the patient to establish a more functional self-other balance in her therapeutic and outside relationships" (p. 99). Shapiro chooses a clinical example to illustrate how a patient's repetitive attractor cycle affects her loved ones. The therapist's intervention could have been merely shaming, if not devastating, to the patient on the receiving end in front of other group members. Yet it is clear from the vignette's follow-up that this was not the case, as the patient later reported deep and lasting change. Such examples illustrate beautifully that what arises in the patient-therapist dynamics depends so precisely and sensitively on the moment, history, and relational context. Especially when taking high emotional risks, one has to be there to know how it feels.

Point 4 of the DST model addresses the power of choice. Shapiro encourages an intentional stance in patients to "own" their patterns and attractor states, which requires taking responsibility for how we actively create our own subjective and intersubjective realities, even for implicit levels of choice. The idea is "to provide an opening for a more genuine way-of-being-with-others as a potential new relational attractor configuration" (p. 102). Finally, Point 5 of the DST model asserts that therapeutic action can only arise in the emerging present, which brings the perspective full circle to a fully intersubjective stance where the power of psychotherapy is in how the dynamics are played out between therapist and patient in the present moment.

The nonlinear revolution has been slow to infiltrate our field partly because psychotherapists have been left questioning its relevance and unsure how to apply its highly abstract concepts. Others, including myself, have concentrated on using nonlinear dynamics more descriptively, as an interpretive lens to process the often unpredictable, highly complex enterprise of psychotherapy. Shapiro's DST is groundbreaking in that it may represent the first operationalization of nonlinear concepts into a unique form of psychotherapy. Perhaps this methodology that blends relational psychoanalysis with universal concepts cross-cutting multiple descriptive levels can assist our field in breaking out of an often hermeneutically sealed atmosphere.

Along with my admiration for Shapiro's utilitarian method of rendering nonlinear theory more user friendly, I do have some cautionary remarks. First, please note that Shapiro offers an information-theoretic perspective to bridge psychological, social, and physical levels. It is important to distinguish an informational approach that unifies mind/matter plus subjective/objective levels from a cognitive stance that privileges thought over emotion. From a neurobiological perspective, the evolutionarily older limbic system lays the foundation for newer cognitive capacities, which represent an emergent level of the neo-cortex. Sound emotion is critical for sound thought.

Second, my experience of DST is that it is further along in theory than it is in practice. Shapiro aims to holistically examine the patient's adaptive landscape, where both subjective experiences and observational data are charted as malleable attractor/repellor states. This is a great goal to aspire toward. Yet to begin by asking "What is the pattern?" and "Why is such a cycle attractive?" is a blatantly left-brain, analytic approach. Further, if the landscape is charted to represent the problem and/or symptoms, and then the treatment proceeds from there, then the system also comes dangerously close to the medical model of diagnosis and treatment. Meanwhile, if the therapist alone constructs the adaptive landscape, this runs the risk of reifying separation between

therapist as observer and patient as observed. Even if the patient helps to formulate the adaptive landscape, the lens is still on the patient's psychology, which smacks of a one-person system, or perhaps a one and a half person perspective, a charge previously levied at self-psychology. Even if the map includes the patient's unconscious landscape, it nonetheless is being formulated through explicit processing of conscious awareness. This renders Shapiro's system susceptible to all of the omissions and blind spots that conscious thought has.

And all of this occurs amidst claims of a holistic psychobiological approach. Yet happily, these short-comings can be addressed by using other methods to construct adaptive landscapes. One possibility would be to use psychobiological markers instead of consciously constructed ones. For example, patients' heart rate variability could be monitored during a 24-hr period using nonlinear methods that retain the precise timing of shifts and full range of variability. If these measures were combined with subjective reports about context and circumstances, psychobiological adaptive landscapes could be constructed that fully incorporates subjective and objective elements.

I am truly excited about the potential of Shapiro's DST to bridge the gaps between not just between mind and brain but also between mind and body. I have long believed that dynamical systems theory represents a cutting edge paradigm not only for psychotherapists but also for the social sciences at large. Yet there is especial relevance for contemporary psychoanalysis with a context-sensitive, depth perspective that honors both the entire trajectory of development alongside the minute-to-minute shifting dynamics. Only a complexity perspective such as Shapiro's is nuanced and dynamic enough to capture this level of interpersonal complexity.

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