Psychotherapy, Science and Spirit: Nonlinear Systems, Hakomi Therapy, and the Tao

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Editor's note: This article is reprinted from *The Journal of Spirituality in Mental Health*, Volume 11, Number 3, July-September 2009, pp. 172-212. It is the first article to deal extensively with Hakomi principles and their roots in the sciences of complex living systems published in a peer-reviewed journal outside of the *Hakomi Forum*.

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ABSTRACT: This article explores how contemporary science may inform psychotherapies that also allow for concepts of "Spirit." Hakomi Therapy is used as one example for exploring such an integration. The discussion begins with tenants from the philosophy of science outlined by Bateson and Wilber, and how Hakomi Therapy incorporates them into therapeutic principles also influenced by Buddhism and Taoism. These meta-principles lead into a discussion of the sciences of complex nonlinear systems and to further implications for psychotherapy. The conditions for fostering transformation in a complex adaptive system are discussed in terms of spiritual concerns about raising consciousness in the world.

KEY WORDS: psychotherapy, philosophy of science, sciences of complexity, non-linear systems, Hakomi Therapy, mindfulness, Taoism, consciousness

The sage views the parts with compassion, because she understands the whole. (39) If the sage would guide the people, he must serve with humility. If he would lead them, he must follow behind. (66)[1]

[1] The bold-italicized quotes interspersed throughout the article are from various chapters of Lao Tzu's book of wisdom, the *Tao-te ching* as found in and expounded upon in Johanson and Kurtz (1991). Though the quotes theoretically relate to the issue at hand, they are sometimes placed without comment. The reader is free to muse about their connections or ignore them. **Bolded words** call attention to key terms in scientific theory and Hakomi Therapy.

Greg Johanson

Introduction

This article deals with selected concepts from the sciences of complexity and living organic systems, and some of their implications for psychotherapy. Hakomi Therapy is used as one example of a therapy that seeks to incorporate such implications, as well as allow for concepts of Spirit. In many respects the article is descriptive in nature. While some issues related to the psychotherapy-science-humanistic dialogue are referenced, there is no attempt to fully engage this long tradition of discourse (Aanstoos, 1990; LeShan 1990; Madsen, 1971; Rice, 1997; Rogers, 1985; Shoben, 1965). Nor is there an effort to survey the entire dialogue between psychology and nonlinear systems that began in the 1990s (Abraham, 1990; Abraham & Gilgen, 1995; Barton, 1994; Kelso, Ding, & Schoener, 1991; Kelso, Scholz, & Schoener, 1991; Saltzmand, 1995; Smith & Thelen, 1993; Turvey, 1990; Vallacher & Nowak, 1994a). While the article illustrates Hakomi's integration of scientific and spiritual-humanistic concerns, there is little meta-discussion of philosophical issues related to such an integration, other than what is found in the works referenced, and more specifically in Johanson and Cohen (2007). Elements from the *Tao-te ching* (Johanson & Kurtz, 1991) are also incorporated with little meta-theory for the perspective they yield on science, psychotherapy, and Spirit.

There is considerable discussion below on how spiritually and/or humanistically oriented therapy might interface with scientific concepts in a clinically relevant way for the reader's consideration. Implications are also outlined for how such therapy moves toward increased consciousness and compassionate action in the world, a common value of spirit-inclusive therapies. While a perspective on Hakomi Therapy necessarily emerges, readers are encouraged to make connections to other approaches and further the discussion. Since, at the time of writing, there were no articles listed in such journals as the *Journal of Humanistic Psychology* or *The Humanistic Psychologist* that contained the words "psychotherapy" and "science" in their titles, let alone the word "spirit," perhaps the descriptive nature of this essay is warranted as an introduction to some of the issues involved.

Philosophy of Science and Hakomi Principles

Hakomi Therapy is an experiential form of psychodynamic psychotherapy that assimilates much of what went before it while specializing in the integration of mindfulness, the mind-body interface, and non-violence in healing and personal growth. It is taught around the world through the Hakomi Institute (www.Hakomi.org) and Ron Kurtz Trainings (www.ronkurtz.com). The main texts in English are Kurtz (1990), Johanson and Kurtz (1991), Kurtz and Prestera (1976), Fisher (2002), Ogden, Minton, and Pain (2007), and the various editions of the *Hakomi Forum*.

The theoretical foundations of Hakomi evolved from the intellectual-clinical pilgrimage of Ron Kurtz who had a remarkable ability to integrate left and right brain perspectives, method and intuition, structure and spontaneity, spirituality and science. On the spiritual side he up grew Jewish while reading a lot of Buddhism and Taoism. On the scientific side he was a mathematical genius who did an undergraduate degree in physics, worked with electronics in the Navy, wrote some of the first computer manuals, and did his doctoral work in experimental psychology.

Science and the philosophy of science were consistent interests for Kurtz. The art and science of therapy, the interpretive and explanatory, the romantic and objective traditions never felt at inseparable odds (Smith, 1994; Salzinger, 1999). He would agree with Giorgi (2000) that it is desirable for psychology to become more unified, but not that humanistic-spiritual traditions would need to take "a complete break from the natural science conception of psychology" (p. 56).

From the spiritual-philosophical side, Kurtz noted that Taoism, the Judeo-Christian heritage, and other spiritual traditions made a radical affirmation of the goodness and wisdom of creation. For example, Lao Tzu observed that:

> ***Thus, Tao is great, Heaven is great, earth is great, and the human is great too. In the universe we have four greatnesses. (25)***
>
> ***Do you think you can take over the universe and improve it? I do not believe it can be done. The universe is sacred. You cannot improve it. If you try to change it, you will ruin it. (29)***

Because of this strong affirmation, the Tao**,** which brought all things into being, is closely aligned with and revealed in nature.

> ***Humanity models itself after Earth. Earth models itself after Heaven. Heaven models itself after Tao. And Tao models itself after Nature. (25)***

The suggestion here is that it would be fruitful for psychotherapists to look to nature to get clues for their work. Kurtz had spent significant time doing that, looking closely at the new sciences of complexity, chaos theory, the study of living, organic, self-organizing, dissipative systems, and more.

It was felt that this search could be done in a way that took into account the concerns of many, such as LeShan, that we must avoid harmful reductionisms (LeShan & Margenau,

1982) by insuring that an adequate science took into account "such observables as self-consciousness and purpose, which [do not] exist in the realm of experience studied by the physicists" (LeShan, 1990, pp. 14-15.) Likewise, Sundararajan's concern (Sundararajan, 2002) that psychotherapeutic practice did not devolve into rules of applied theory that ignored the embodied "logic of practice" (Bourdieu, 1990) that led to the high level "skillful comportment" in psychotherapy (Spinosa, Flores, & Dreyfus, 1997) valued by humanistic therapists (APA Division 32 Task Force, 1997); a concern echoed by LeShan (1996) that our work carry us *Beyond Technique*.

This article follows Kurtz in concentrating on the insights of a more widely conceived systems theory that has been a constant dialogue partner with Hakomi Therapy's grounding since the beginning, along with the Hakomi tenet that psychology and psychotherapy can also be "open to the spiritual, transcendental, or trans-personal dimensions in men and women" (Wilber, 1989, p. 230). Practitioners of Hakomi have always been clear that science is never value free. It is an undertaking to realize that values are multi-determined, and to struggle with bringing them into meaningful coherence while acknowledging that we are always "involved participants" as opposed to "alienated observers" (Berman, 1989, p. 277).

In the early days of Hakomi (the 1970s), one particularly fruitful source from the philosophy of science literature that has held up well was the book *Mind and Nature* by Gregory Bateson (May, 1976). Here Bateson (1979) outlined ten propositions that characterized a living organic system that was said to have a mind of its own and included nature itself, These were tied directly to the fundamental principles that defined Hakomi beyond its particular method and techniques.

Putting Bateson, Lao Tzu, and other sources together in broad principles for guiding the practice of psychotherapy and other disciplines was quite satisfying to everyone involved in the formative period of Hakomi. Psychotherapy can burn us out if it only amounts to a collection of techniques divorced from a comprehensive philosophy of life (Koestenbaum, 1978). Part of the creative context that supported Kurtz's integration was a community of therapists who were bothered by therapeutic outcome studies showing poor results, and who longed for a more efficient, empowering way to do therapy that was scientifically consistent, while including the body, and the wisdom of ancient spiritual traditions (Richards, 1996).

Unity Principle

Bateson's first proposition is that living organic systems with the quality of mind are made of parts organized into wholes. Atoms join to make molecules, molecules join to make complex organisms, organisms join to form larger communities, and so forth. Lao Tzu says

> ***Tao produced the One. The One produced the two. The two produced the three. And the three produced the ten thousand things. (42)***

There is good news here. Things are building up and coming together. In the old Newtonian paradigm things were more depressing. The second law of thermodynamics told us about **entropy**, the notion that the universe is running out of gas. But Prigogine (Prigogine & Stengers, 1984) won the Nobel Prize for demonstrating that there is another force within organic life that moves parts to organize into greater wholes, namely **negentropy**.

This was the basis for Hakomi's **unity principle**, the notion that we are joined with many other parts in increasing levels of complexity. We are in a participatory universe as Bermen (1990) said. Laszlo (2004, pp. 5-6) suggested our "informed universe is a world of subtle but constant interconnection, a world where everything informs—acts on and interacts with—everything else." Or, the most fundamental unity of reality, according to Arthur Koestler (1967) was a **holon**—a shorthand designation for a whole that was made up of parts, which in turn was part of a larger whole (Nowak & Vallacher, 1998, p. 122).

Unity has many implications for psychotherapists. For one, it means we can be lazy, in the sense that we can have faith that whenever people are fragmented there is a force working that is on our side and wants to move things in the direction of greater wholeness. We do not have to engineer or create a new person. Many therapists who come to Hakomi trainings are overly stressed, holding too much responsibility for a client's growth, and too little trust in their innate impulse to move toward wholeness.

Laszlo (2004, p. 6) pointed to a second connotation when he said our interdependent world should be apprehended "with our heart as well as our brain." Or, **compassion** as Thomas Merton once said, was the profound awareness of the interconnectedness of all things. Clients who stand across from us are not other. They are us as well. Thus, Hakomi therapists find it both scientifically and clinically necessary to develop that sense of compassion and **loving presence** that honors and embodies the communion between living systems. This is foundational for facilitating core transformation as well as normal healthy attachment (Cozolino, 2006; Siegel, 2006).

A third implication, sad for psychotherapists and their pocketbooks, is that we cannot be imperialists. If we are holons composed of sub-systems and we also participate in supra-systems (Skynner, 1976), then all those elements will be important and need proper attention.

For example, to be holistic and responsible, if people present themselves as depressed, we would have to attend to

metabolic issues through nutrition, biochemistry, movement, deep tissue work, and so forth, as well as the developmental, psychological issues that psychotherapy traditionally addresses, as well as family, work, spiritual, community, political, and economic issues in some cases. Since single practitioners do not have skills in all these areas, it means we need to work in interdisciplinary ways as much as possible. Hakomi students are taught to value full psycho-social assessments as outlined in such books as *Metaframeworks* (Breunlin, Schwartz, & Mac Kune-Karrer, 1992).

Ken Wilber was an early resource for Kurtz, and an ongoing one for Hakomi. The Unity principle is where Wilber's all-quadrant-full-spectrum model (**AQAL**) of Integral Psychology recommended itself. While feminist psychologists emphasized holons by saying the self was always and only a self-in-relation (Jordon, 1991), Wilber (1995) expressed it by saying that psychology was always also sociology. Wilber thus also accepted that the meaning of something was intimately related to its context, one of the main points of postmodernism (Harvey, 1989).

Wilber (1995), as well as Habermas (1979), clarified that a human holon not only has an individual and a communal aspect, but also an internal-subjective and external-objective aspect. Laszlo (2004) concurred: "What we call 'matter' is the aspect we apprehend when we look at a person, a plant, or a molecule from the *outside*; 'mind' is the readout we get when we look at the same thing from the *inside*" (pp. 147-49).

Following Wilber in plotting the individual-communal vs. the interior-exterior resulted in a four-part grid, or four quadrants. These quadrants suggest that the intentional, cultural, social, and behavior aspects of a holon are inseparably intertwined, with no one quadrant able to reduce the others to itself. Internal-individual consciousness (II quadrant) has a degree of autonomy, but is highly influenced by internal-communal dispositions (IC quadrant), namely the values of the multiple cultures in which we are immersed. These values might or might not have strong support through actual social structures that embody them in the external-communal (EC) quadrant world of laws, educational systems, housing arrangements, legal systems, economic policies, etc. These three quadrants work in terms of mutual, reciprocal influences with the external-individual (EI) quadrant of one's objective underlying physiology, and observable behavior. Wilber's inclusion here of an interior dimension as well as a cultural-social dimension goes a long way toward addressing what has been the inadequate or shadow side of systems theory (Berman, 1996).

Table 1. Wilber's Four Quadrants with Representative Theorists

	INTERIOR .	**EXTERIOR**
	+Dialogical	+Monological
	+Hermeneutical	+Empirical, Positivistic
	+Consciousness	+Form
INDIVIDUAL	*Sigmund Freud* *C. G. Jung* *Jean Piaget* *Aurobindo* *Plotinus* *Gautama Budda*	*B. F. Skinner* *John Watson* *Empiricism* *Behaviorism* *Biochemistry* *Neurology*
	(II) Intentional Aspect (I)	**(EI) Behavioral Aspect (It)**
	(IC) Cultural Values (We)	**(EC) Social Structures (Its)**
COLLECTIVE	*Thomas Kuhn* *Wilhelm Dilthey* *Jean Gebser* *Max Weber* *Hans-Georg Gadamer*	*Systems Theory* *Talcott Parsons* *Auguste Comte* *Karl Marx* *Gerhard Lenski*

Wilber dealt with the issues of negentropy, development, and evolution in many of his works, arguing that the four quadrants of a holon evolve together over time (Wilber, 2003). In 1995 he summarized twenty tenants of evolution

(Table 2). Every tenet has implications for Hakomi therapists grounded in the Unity principle. For instance, tenets two and three say every person embodies **agency and communion** where the boundaries between the two need to be monitored in terms of rigidity and flexibility (Whitehead, 1994, 1995), a point echoed by the Santa Fe Institute's work on **complex adaptive systems** or CAS (Morowitz & Singer, 1995).

Tenets fifteen and sixteen note that holons evolve with **directionality** toward increased complexity, differentiation, and integration. Thus, when a client presents with anxiety or depression, Hakomi therapists must ascertain if these are the product of pain in the present or past, or signals that the person is resisting moving into a larger future. There are transpersonal dimensions to personhood as well as personal and pre-personal.

Tenets six, seven, and eight outline development by envelopment where there is both **upward and downward causation**. Therapeutic issues arise such as whether a person is depressed because he is eating ice cream and may be hypoglycemic (upward causation); or, is this person's immune system not handling disease because he has lost hope (downward causation now studied in psychoneuroimmunology)?

Table 2. Wilber's Twenty Tenets of Evolution

1. Reality as a whole is not composed of things or processes, but of holons.

2. Holons display capacity for self-preservation: autopoiesis, assimilation, or agency over time.

3. Holons display capacity for self-adaptation; allopoiesis, accommodation, or communion with other wholes.

4. Holons display capacity for self-transcendence, symmetry breaks, creativity (Whitehead) or emergent transformation into new wholes with new forms of agency and communion.

5. Holons display capacity for system memory and self-dissolution along the same vertical sequence on which they were built.

6. Holons emerge in unprecedented ways not determinable from knowledge of component parts.

7. Holons emerge holarchically with each higher holon embracing its junior predecessors and adding its own new and more encompassing pattern or wholeness.

8. Each emergent holon transcends but includes its predecessor, preserving its being, but negating its partiality, developing through envelopment.

9. The lower holon sets the possibilities of the higher; the higher sets the probabilities of the lower; demonstrating both upward and downward causation.

10. "The number of levels which a hierarchy comprises determines whether it is 'shallow' or 'deep'; and the number of holons on any given level we shall call it 'span.'" (Koestler)

11. Each successive level of evolution produces greater depth and less span.

12. Destroy any type of holon, and you will destroy all of the holons above it and none of the holons below it.

13. Holarchies co-evolve, the holons along with their inseparable environments.

14. The micro is in relational exchange with the macro at all levels of depth.

15. Evolution has directionality toward increasing complexity with a greater overall simplicity.

16. Evolution has directionality toward increasing differentiation (producing partness, novelty, or a new manyness), and integration (producing wholeness, coherence or a new oneness).

17. Evolution has directionality toward increasing organization/structuralization.

18. Evolution has directionality toward increasing relative autonomy.

19. Evolution has directionality toward increasing telos of larger/deeper contexts.

Addition 1. The greater the depth of a holon, the greater its degree of consciousness.

Source: Ken Wilber, *Sex, Ecology, Spirituality: The Spirit of Evolution*, Chapter 2, "The Pattern That Connects." (adapted)

Wilber realized the limitations of the twenty tenants in that though they are not written in the "It" language of objective materialism, they must cover all the realms of matter, life, mind, soul, and spirit, and were necessarily addressed to the lowest common denominator. They inform us that development moves toward increasing differentiation and

integration (tenet sixteen), but say little about reproduction, dreaming, falling in love, doing art, being curious, building ships, joining committees, writing constitutions, or being moved by Shakespeare. They are the most fundamental aspects of development that we cannot ignore, but not the most significant (Wilber, 1995, p. 116).

However, the tenets did suggest for Wilber that there was a **telos** built into all levels of being, which implied creative intelligence or a Spirit beneath all of life expressing or manifesting itself through every quadrant, but never reducible to any one. Spirit demonstrated itself in evolutionary movement toward increased complexity. This increase in complexity was understood as an increase of **agency** (self-contained wholeness)**-in-communion** (expanded partness and connectedness).

More of life is embraced and integrated within the holon. A person's system is enlarged as it transcends previous boundaries to inclusion. It increases in both consciousness and compassion, which provides a measure of spiritual growth; not more spiritual in the sense of being closer to Spirit (which is in and through everything equally), but more conscious of expanded aspects of the life of Spirit. This growth is subject to empirical confirmation or disconfirmation and thus meets the **verifiability criterion** of contemporary science (Wilber, 1995).

Organicity Principle

Following the implications of the Unity principle results in John Muir's observation that if we pick up a stick we discover it is connected to everything in the universe. Bateson's second proposition is that what makes a system organic is not simply that it has parts, but that the parts are connected and communicate within the whole (Nowak & Vallacher, 1998, pp. 21-22). Wilber (1979) noted that one way of thinking about therapy in general was a matter of healing splits; splits between one part of the mind and another, between the body and the mind, between the whole self and the environment, and a final transpersonal split that overcame all division.

Trouble, therefore, for living organic systems often flows from a lack of communication. When the liver is not interacting with the pancreas, pituitary, and heart, there are problems. When the family doesn't talk within itself, the football team doesn't huddle, production is out of touch with sales, the designers who are doing the dashboard don't talk to those engineering the heater, and governments don't stay in touch, there is potential for great harm. Various therapies tend to address a particular split. Hakomi therapists working out of this integral system's approach treat their clients in ways appropriate to each split, and/or refer them to specialists who can.

When the communication and information exchange is happening, the system is self-organizing, self-directing, self-correcting, and characterized by complex, non-linear determinism, which means it has a mind of its own based on its own internal wisdom—Bateson's third proposition. A living, organic system is not a machine where one input will mechanically translate into a predictable outcome. It has decider subsystems that take any input and process it in unique ways that organize both its experience of the input and its expression in response to the input (Nowak & Vallacher, 1998, p. 9, p. 32).

The second Hakomi principle of **Organicity** is one that is respectful and trusting of a living system's inner wisdom and integrity as it participates in and interacts with its environment. Organicity is used as a concept to acknowledge that, as opposed to a machine that can be fixed from without, a living organism can only be healed from within through enrolling its own creative intelligence.

The implication for psychotherapy is that it looks for and follows natural processes, inner movements, inner rhythms, and spontaneous signs of the **collaboration of the unconscious** (Kurtz, 1990, p. 55), orienting toward increased wholeness as opposed to artificially prescribing structures or agendas from without. In everyday life parents adapt to the different needs of their children, or teachers take into account the various learning styles of their students. It is organically necessary and natural.

Embracing the principle of Organicity disposes us toward giving up white knight models of riding in and saving people in favor of more organic metaphors—such as mid-wifery or gardening—that talk less extravagantly of coaxing nature.

Lao Tzu seconds this implication in many places:

> ***(The sage) only helps all creatures to find their own nature, but does not venture to lead them by the nose. (64) He simply reminds people of who they have always been. (64) Because she has given up helping, she is people's greatest help. (78) The highest form of goodness is like water. Water knows how to benefit all things without striving with them. (8)***

Mind/Body Holism Principle

A third principle of Hakomi, implied in what has already been said, is that of **Mind/Body Holism**,a simple subset of organicity. Lao Tzu notes:

> ***He who values the world as his body may be entrusted with the empire. She who loves the world as her body may be entrusted with the empire. (13)***

Since the mind and body participate and interact with each other in intimate ways, the body can be used as a royal road to the unconscious, just as dreams or the quality of our relationships can (Johanson, 2006b).

It is therapeutically powerful to use the mind/body interface, because the body doesn't lie. It is immediate and present, and it is not a therapeutic realm that has been overused and abused, as has our capacity for speech (Johanson, 1996). The body's revelations are more closely connected with deeper levels of the tri-partite brain and the physiological correlates of our conscious and unconscious mental functioning.

That is why it is especially necessary, as Ogden and Pain (2006) suggested, to incorporate the body, titrating sensation and doing bottom-up processing when there has been trauma. Traumatic events trigger the primitive fight, flight, or freezing mechanisms that will lead persons to dissociate if standard mental-emotional top-down processing reactivates the memories too soon or without adequate resources, thereby re-traumatizing the person.

The body reflects mental life (Kurtz & Prestera, 1976; Marlock & Weiss, 2006b). The voluntary musculature is under cortical control. The protein receptors of every cell membrane of the body receive signals about the environment from the brain, informed by the mind, which then activates growth or withdrawal responses (Lipton, 2005). The brain's mind monitors and integrates somatic markers in every experience of consciousness (Damasio, 1999). So, perceptions of the world such as "life is a fight and you have to be ready to win at all times" or "life is a wonder to be enjoyed" mobilize the body in different ways that are congruent with these differing beliefs. The mind-body interface can be used in both directions, studying what mental-emotional material is evoked through body-centered interventions, or noticing how the body organizes in response to some mental-emotional experiment (Fisher, 2002, pp. 69-96).

Though fine tuning our metabolism to support our energy is important, Bateson (1979) would say that what we're getting at in mind/body interface work is his fourth proposition, namely that energy is collateral or secondary in living organic systems characterized by mind. What is of primary importance is the way a system **processes information**. An atom bomb or a raging rhinoceros has a lot of energy, but not much creativity in terms of processing information. With a relatively small amount of energy, the human body-mind-spirit can figure out a way to write Shakespeare and go to the moon.

Think of what happens when a young toddler believes it has lost its mother in a department store. That belief sets off a reaction of uncontrollable fear, crying, disorientation, inconsolable isolation, and panic. No one around the child can comfort it. A second later, when the information registers that mother is returning from around the corner of the jewelry counter to pick it up, there is an instant transformation to joy, calm, easy breathing, relaxation of muscles, and a sense of peace and reconnection. A little information goes a long way to control a lot of energetic processes. Siegel (1999) thought of this as an example of the **nonlinear** qualities of a system in which a small input led to a large response in which the limbic system fostered a cascade of responses that affected heart rate, a sense of panic, and so forth.

That leads into the fifth proposition of Bateson (1979); that information is coded, which is a way of saying we **organize our experience**. Experience does not come to us packaged. We process stimuli from within and without. As Suzanne Langer (1962) suggested, we symbolically transform or encode the given of various stimuli to make it available to consciousness. Those in the constructivist school of psychology honor and employ this insight (Mahoney, 2003). For Bateson, the way energy was organized always went back to the context of relationships that influenced its "form, order, and pattern" (May, 1976, p. 40).

A sixth and final Bateson (1979) proposition is that information is coded into a **hierarchy of levels** of organization. In psychotherapy and religion we are especially interested in high level encoding, that is the basic faith or philosophy found in our **core organizing beliefs** that control both our perception and our behavior before we have any awareness of perceiving or responding (Nowak & Vallacher, 1998, p. 122). For example, the belief that "I have to perform to get people's love and approval" encodes or controls a lot of behavior: the way we perceive school and sports, the way we hold our bodies, the expectations we bring to relationships, and more.

Bateson's (1979) propositions lead us into the midst of contemporary **systems theory** that Thelen and Smith (2002), Nowak and Vallacher (1998), the Santa Fe Institute (Cowan, Pine, & Meltzer, 1994) and others argued is an absolute necessity. The necessity arises from the inadequacy of older theories of maturationism, environmentalism, or interactionism between genes and environment to give an adequate account of "problems of emergent order and complexity" (Thelen & Smith, 2002, p. xiii), namely how new structures, patterns, or core narratives arise. These older theories noted the eventual outcome or product of where people ended up, but "take no account of process . . . the route by which the organism moves from an earlier state to a more mature state" (Thelen & Smith, 2002, p. xvi). Gottman, et al (2005. p. 37) noted that "most statistics used in the field of psychology are based upon linear models [which are] seldom justified. . . . It has become increasingly clear that most systems are complex and must be described in nonlinear terms." To put it another way

> The grand sweep of development seems neatly rule-driven. In detail, however, development is messy. As we turn up the magnification of our microscope, we see that our visions of linearity, uniformity, inevitable sequencing, and even irreversibility break

> down. What looks like a cohesive, orchestrated process from afar takes on the flavor of a more exploratory, opportunistic, syncretic, and function-driven process in its instantiation. (Thelen & Smith, 2002, p. xvi)

Certainly, psychotherapists echo this view by routinely dealing with development in terms of transformation. Peterfreund (1983) was an early champion of systems theory:

> Two decades ago my interest in basic aspects of the psychoanalytic process—which I see as the interaction of patient and analyst, two highly complex systems that constantly influence each other while changing over time—led me to the general problem of biological order, organization, control, and adaptation, and then to an information-processing and systems frame of reference (discussed in my 1971 monograph Information, Systems, and Psychoanalysis). I found this general frame of reference to be very congenial because it had a greater explanatory power than psychoanalytic metapsychology and was far more consistent with contemporary scientific thought. (p. x)

As Morgan (2006) put it, understanding the brain and mind in terms of "linear thinking involving cause and effect is inadequate. The brain is the most complex structure known in the universe. The human being is way too complex for simple logic. We need to turn to **complexity theory** for a better understanding" (p. 14). Nowak and Vallacher (1998) agreed that the brain was composed of "100 billion neurons, each of which influences and is influenced by approximately 1,000 other neurons. . . . The range of potential mental states in unimaginably large," (p. 3) and "the same variable can . . . act as a 'cause' one moment and an 'effect' the next. This feedback process is at odds with traditional notions of causality that assume asymmetrical one-directional relationships between cause and effect" (p. 32). And

> . . . many phenomena in nature do not conform to certain longstanding assumptions regarding causality and reduction, but rather are more appropriately conceptualized as nonlinear dynamical systems. Broadly defined, a "**dynamical system**" is simply a set of elements that undergoes change by virtue of the connections among the elements. In nonlinear systems, the connections among elements generate global system-level behavior that displays remarkable variability over time, even in the absence of outside influences. When external influences are present, the system's behavior may change in a manner that is nonproportional to the magnitude of the influences. (p. 2)

In terms of the philosophy of science, Wilber's tenets #4 and #6 [see Table 1], namely that holons display a capacity for self-transcendence, symmetry breaks, creativity (Whitehead), or **emergent transformation** into new wholes with new forms of agency and communion is being echoed here. This reflects the nonlinear character of systems.

Holons emerge in unprecedented ways not determinable from knowledge of component parts. No matter how much is known about the parts that make up a whole, the contexts in which it exists, and the goal towards which it is developing, it is important to emphasize tenet six that growth implies **indeterminacy**.

Laszlo (1987, p. 36) explained that neither knowledge of the initial conditions of a system nor of the changing conditions of its environment can yield certainty of prediction. Mayr (1982, p. 63) wrote that "the characteristics of the whole cannot (even in theory) be deduced from the most complete knowledge of the components, taken separately or in other partial combinations. . . . As Popper said, 'We live in a universe of emergent novelty.'" The most absolute, comprehensive knowledge of both the physiosphere and biosphere could never predict the emergence of Lao Tzu, Jesus, or a 747. That this is so has been a source of humility, hope, and curiosity for caregivers for thousands of years (Bargh & Chartand, 1999).

In terms of scientific inquiry in general, the clear implication is that **determinism**, or **predictive power**, is an insufficient and inadequate guiding principle. It is still true that there is upward and downward causation with lower holons setting the possibilities of the higher, and higher ones setting the probabilities of the lower (tenet nine). For instance, nothing in a Mother Teresa or a hovercraft break with the laws of the physiosphere. However, determinism is a limiting case in which a holon's creativity or capacity for self-transcendence approaches zero.

This means that many theories of development and psychotherapeutic processes are simply **reconstructive**; that is, they are based on looking back at previous results and codifying them into a theory that does not encompass the freedom and spontaneous emergence of the self-organizing, complex, nonlinear determinism Bateson (1979) outlines. Wilber writes

> We never know, and never can know exactly what any holon will do tomorrow (we might know broad outlines and probabilities, based on past observations, but self-transcendent emergence always means, to some degree: surprise!) We have to wait and see, and from that, after the fact, we reconstruct a knowledge system.
>
> However, when a holon's self-transcendence approaches zero (when its creativity is utterly minimal), then the reconstructive sciences collapse

into the predictive sciences. Historically, the empirical sciences got their start by studying precisely those holons that show minimal creativity [rocks in motion].

. . . By taking some of the dumbest holons in existence and making their study the study of "really real reality," these physical sciences . . . were largely responsible for the collapse of the Kosmas into the cosmos, for the reduction of the Great Holarchy of Being to the dumbest creatures on God's green earth, and for the leveling of a multidimensional reality to a flat and faded landscape defined by a minimum of creativity (and thus a maximum of predictive power). It would take such a turn of events as Heisenberg's uncertainty principle to remind us that even the constituents of rocks are neither as predictable nor as dumb as these silly reductionisms. In the meantime, the "ideal" of knowledge as predictive power would ruin virtually every field it was applied to (including rocks), because its very methods would erase any creativity it would find, thus erasing precisely what was novel, significant, valuable, meaningful (Wilber, 1995, p. 48).[2]

The master does his job and then stops. He understands the universe is forever out of control, and that trying to dominate events goes against the current of the Tao. (30) Trying to control the future is like trying to take the master carpenter's place. When you handle the master carpenter's tools, chances are that you'll cut your hand. (74)

Sciences of Complexity and the Human Mystery

In psychology and psychotherapy, we need to work with a systems theory that can take us beyond inadequate cause-and-effect, linear, deterministic, reductionistic models and analysis (Thelen & Smith, 2002, p. 49). This means eschewing "the machine vocabulary of processing, devices, programs, storage units, schemata, modules or wiring diagrams" (Thelen & Smith, 2002, p. xix). It means embracing "principles for the global properties of complex systems . . . systems with a history, systems that change over time, where novelty can be created, where the end-state is not coded anywhere, and where behavior at the **macrolevel** can, in principle, be reconciled with behavior at the **microlevel**" (Thelen & Smith, 2002, p. 49). It also means welcoming uncertainty and anxiety as a "consequence of a creative universe" (Gordon, 2003, p. 96).

While Bateson (1979) talks of living organic systems, others term this science "the study of dynamic, synergetic, dissipative, nonlinear, self-organizing, or chaotic systems" (Thelen & Smith, 2002, p. 50), or "dynamical systems" (Nowak & Vallacher, 1998, p. 2.) John Holland (1995), in line with the work of the Santa Fe Institute (Morowitz & Singer, 1995; Cowan, Pines, & Meltzer, 1994), used the term complex adaptive systems (CAS). Laszlo (2004) spoke of adaptive self-regulating systems, and Varela, Thompson, and Rosch (1991) also adopted dynamical systems.

All these biological systems "belong to a class of systems that are both **complex** and that exist **far from thermal equilibrium"** (Thelen & Smith, 2002, p. 51). They are **open** systems since they continuously interact with their environments, taking in energy and matter to fuel their work, and dissipating some back to the environment. Since the parts or agents of a system have escaped to a higher order of complexity, unpredictable from looking at the parts alone, the system is always more than the sum of the parts.

> Thus, Bertalanffy conveyed the importance of focusing on the pattern of relationships within a system rather than on the substance of the parts. . . .While reductive analysis has a place in science [Bertalanffy] believed the study of whole systems had been grossly neglected, and he urged scientists to learn to "think interaction." . . .That a family system should be seen as more than just a collection of people and that therapists should focus on interaction among family members rather than individual personalities—became central tenets of the field. (Nichols & Schwartz, 1998, p. 113)

In Hakomi Therapy, Rob Fisher (2002, pp. 109-121, pp. 216-230) specifically outlined working with the systemic interaction of couples.

A particular notion from the old systems theory, appropriate for machines, but one we must qualify, is the concept of "**homeostasis**." This is the idea that systems attempt to create **stability through constancy**, that various aspects of a system have set points that will automatically sense any deviance and mechanically bring things back to normal through negative feedback. Think of a thermostat that controls heat. This concept has been applied inappropriately to the human body, individuals, families, and organizations as Bertalanffy (1968) cautioned years ago. More recently, Gottman et al. (2005) concurred that "when applied to the study of interacting systems such as a couple . . . the concept of homeostasis is highly inadequate" (p. 166).

The concept better able to accommodate the features of living organic systems is Sterling's (2004) theory of

[2]Wilber takes the word *Kosmos* from the Pythagoreans, and uses it in the most comprehensive sense to include all manifestations of life. It is contrasted with *cosmos*, which includes only the external, physical aspects of life, or what Wilber refers to as the right-sided flatland of the four quadrants.

"**allostasis**" or **stability through change**, as opposed to constancy. Here the system was seen as making predictions based on past experience and adjusting parameters to best function in the situation at hand. As opposed to maintaining some mythical normal set point, for example, blood pressure fluctuates in an adaptive way depending on whether it anticipates being engaged in sleep, sex, a basketball game, meditating, or dealing with an aggressive boss (Sterling, 2004, p. 6).

Allostasis is another way of talking about Siegel's (1999) description of "the brain as an **anticipatory machine**" (Morgan, 2006, p. 15). That we learn to anticipate life based on our previous experience is not a therapy issue. It is the nature of life that we are hard-wired to constructively (Mahoney, 2003) make sense of it, to give it meaning (Stolorow, Brandchaft, & Atwood, 1987). We develop what Kurtz calls **core organizing beliefs** that provide the **core narrative structure** of our stories and shape our way of being, or our character styles in the world (Shoda, Mischel & Wright, 1994). Nowak and Vallacher (1998) used the language of **intrinsic dynamics** (p. 8) governed by **rules** (p. 20) and **patterns** (pp. 33-35) that help us understand how "complexity can arise from simplicity" (p. 46). They noted that

> . . . personality research in the 1990s began to characterize personality . . . in terms of patterns rather than central tendency. . . . This model holds that stability resides in the internal mechanisms producing behavior, not in the behavior itself, and that these mechanisms produce reliable and personally distinctive patterns across psychological contexts. (Nowak & Vallacher, 1998, p. 35)

As the emotional responses of the beliefs become engrained patterns of neural firing (Schoener & Kelson, 1988), Siegel (1999) observed that they function as **attractor states** that "help the system organize itself and achieve stability (p. 218). Attractor states lend a degree of continuity to the infinitely possible options for activation profiles." Laszlo (1987) maintained that "the principal features of dynamic systems are the attractors; they characterize the long-run behavior of the systems" (p. 70). **Static attractors** govern evolution when system states are relatively at rest; **periodic attractors** govern those systems that go through periodic repetitions of the same cycle; and **chaotic attractors** influence the organization of seemingly irregular, random, unpredictable systems (Barton, 1994; Gallistel, 1980; Nowak & Vallacher, 1998, p. 58; Vallacher & Nowak, 1994b).

While Farmer and Packard (1985) noted that **adaptive behavior** was an emergent property that spontaneously arose through the interaction of simple components—precisely the definition of **nonlinear**—Siegel made the point that new adaptations to new attractors form the foundation upon which increased complexity was built. Nowak and Vallacher (1998) explained that

> . . . in nonlinear dynamical systems, small incremental changes in the value of **control parameters** [external variables that influence behavior] may lead to dramatic, qualitative changes in behavior, such as a change in the number and type of attractors. Radical changes in a pattern of behavior are usually **bifurcations**, although they are sometimes referred to as dynamical **phase transitions** and critical phenomena. Bifurcations represent qualitative changes in a system's dynamics and thus are revealed by noteworthy changes in the values of the system's **order parameters** [internal variables that organize behavior]. (p. 61)

Hawkins (2002) noted that when attractors work habitually, they became **unconscious** and unobvious from the surface.

> Analysis of . . . 'incoherent' data identifie[s] hidden energy patterns, or attractors (which ha[ve] been postulated by the advanced mathematics of nonlinear equations) behind apparently natural phenomena (p. 42).

> "Attractor" is the name given to an identifiable pattern that emerges from a seemingly unmeaningful mass of data. There is a hidden **coherence** in all that appears incoherent, which was first demonstrated in nature by Edward Lorenz. (p. 46)

This is the point made by Ecker and Hulley (1996) when they said most people presented themselves in therapy with an anti-symptom position of not wanting and not understanding their anger, jealousy, or inability to stop shopping. In-depth therapy invariably uncovered a perfectly understandable pro-symptom position or coherent attractor working beneath the surface as deep structure. Krippner (1994) noted that it was the province of **chaos theory** that "investigates processes that initially seem so complex that they do not appear to be governed by any known principles; however, they actually have an underlying order."

Again, therapeutic issues do not arise simply from organizing and making meaning of our experience, but when we have constructed our core beliefs in such a way that they unconsciously and habitually organize-out needed possibilities (support, intimacy, authenticity, inclusion, etc.) even when they are realistically available (Johanson, 2006b; Robertson & Combs, 1995). We anticipate frustration, which might have been true in the past, but it is no longer present in the same way (Mischel & Shoda, 1995). We are unhappy and feel constrained to maintain our presently organized unhappiness that is based on prior experiences that have not been updated. Freud thought of this predicament in terms of the repetition compulsion (Johanson, 1999). We cannot see something new as new,

and so compulsively or habitually repeat old patterns of coping.

> ***When they think that they know the answers, people are difficult to guide. When they know that they don't know, people find their own way. (65)***

Morgan (2006), following Siegel, underlined the neurological substrate of these habitually active core beliefs. "As certain states are engraved within the system they become more probable. This probability is influenced by the history and the present context" (p. 14). Current events activate entire **memory stacks** "and because emotional memory is always in the now, the old perceptions, feelings and behaviors become blended with [the] current situation" (Morgan, 2006, p. 15). She wrote that the young one's

> . . . interactions with her world are imprinted in her brain circuitry. She is "wired up" for a particular world. Her brain is coded with all kinds of memory, and most of the early memory will be unconscious. However, this memory will deeply affect later emotions, behaviors patterns, beliefs, and abilities to process information. (p. 15)

Complexity Theory and Therapy

How can the sciences of complexity help therapists understand the processes by which people can be helped to develop beyond the constraints of a limited but powerfully fixed worldview? For one, by challenging the notion of homeostasis that implies we should find something that has deviated beyond an average range and correct it.

Likewise, in terms of new possibilities in organizing experience, "**emergent organizations** are totally different from the elements that constitute the systems, and the patterns cannot be predicted solely from the characteristics of the individual elements" (Thelen & Smith, 2002, p. 54). This is the essence of systems characterized by **nonlinearity** (Farmer & Packard, 1985). "Nonlinear relations are simply relations in which changes in the value of one variable cannot be described as a linear function of changes in the values of the other variables" (Nowak & Vallacher, 1998, p. 36). Thus, therapists cannot hope to find one part of a system, make one input, and expect a particular output. While there are multiple levels within the compound individual, "no one element alone has causal primacy" (Thelen & Smith, 2002, p. xviii), and in a CAS no one element can be controlled to determine a predictable outcome (Morowitz & Singer, 1995). One implication of organicity here is that depth therapy must be fundamentally **collaborative**.

In addition, Thelen and Smith (2002) noted that transformation and development "appears to be **modular** and **heterochronic**. That is, not all of the structures and functions . . . develop apace or as a unified whole. . . .The paradox is that the organism moves along as an adapted integrated whole as the component structures and processing change in fits and starts" (pp. xvi-xvii). That means, as Wilber (2006) pointed out, humans develop at different rates along different developmental lines, such as the intellectual, emotional, moral, musical, athletic, aesthetic, and so forth. So, we know that working with one aspect of a person may or may not affect other aspects.

Another way of considering the various elements or aspects of the system according to Schwartz (1995) is to speak of **parts**, which is the language commonly used by clients. Parts imply the concept of **multiplicity** (Rowan & Cooper, 1999). When dealing with one part of a person, we are actually entering into a complex **inner ecology** with parts that function like sub-personalities. These might be polarized or cooperative with each other as are external family members. Many of the basic parts identified by Schwartz were congruent with the parts Eisman (1989) identified in Hakomi as aspects of the "**child state of consciousness**(child state of consciouisness is a technical terms
(Johanson & Taylor, 1988, pp. 239-40).

Bateson (1979) said that if the parts within the whole, or holon, were communicating, that the system was **self-organizing**, self-directing, and self-correcting. It had a wisdom of its own that must be honored and collaborated with when therapeutic experiments were done, to help it explore the possibility of accommodating new realities. Once again, it "is the way energy flows through" the system that coordinates the components (Thelen & Smith, 2002, p. 52). As Peterfreund (1971) said: "All structure involves information; indeed, it is information that truly marks our identity. As Norbert Wiener (1950) wrote (1950) 'We, are not stuff that abides, but **patterns** that perpetuate themselves'" (p. 119). For Nowak and Vallacher (1998)

> The internally generated behavior of a dynamical system often can be characterized in terms of patterns of changes. If a **reliable pattern** can in fact be discerned, the unit of analysis is no longer the discrete changes constituting the pattern, but rather the pattern itself. (p. 33)
>
> The value of any given feature (attitude expression, intimacy) may well vary a great deal over time, but if this temporal variation conforms to a reliable pattern, the phenomenon can be nonetheless characterized as stable and predictable. (p. 34)

Nowak and Vallacher (1998) added ". . . pattern recognition is clearly central to an understanding of dynamical systems" (p. 35); what Kurtz discussed under the heading of tracking

for **indicators** of core beliefs that generated our habitual or reliable patterns (Keller, 2005).

We perpetuate ourselves through patterns (plural) that evolve over time. Self-organizing systems begin with many parts with large **degrees of initial freedom** that are then "compressed to produce more patterned behavior" (Thelen & Smith, 2002, p. 51). "The system loses degrees of freedom, and the state of the system can sometimes be described by fewer variables than can relatively simply systems" (Nowak & Vallacher, 1998, p. 53).

"In self-organization, the system selects or is attracted to one preferred configuration out of many possible states, but **behavioral variability** is an essential precursor" (Thelen & Smith, 2002, p. 55). Nonlinear means **order out of chaos** (Vallacher & Nowak, 1994b). In Schwartz's terms, many different parts can blend or fuse with consciousness at any given time to lead a person in many directions. Which part emerges depends to a certain extent on the interactions of the internal parts and their perception of what is happening in the external world. Neurologically, the activation of one pattern often corresponds to the inhibition of another (Siegel, 2006).

> Under different conditions the components are free to assemble into other stable behavioral modes, and it is indeed this ability of multi-component systems to "**soft-assemble**" that both provides the enormous flexibility of biological systems and explains some of the most persistent puzzles of development. (Thelen & Smith, 2002, p. 60)

Siegel (1999) wrote, "Every moment, in fact, is the emergence of a unique pattern of activity in a world that is similar but never identical to a past moment in time" (p. 218). As therapists, we are always entering into a mysterious place of not knowing, and not controlling when we work with others. It is a place where we need to **track** carefully (Fisher, 2002, pp. 32-43) and develop exquisite sensitivity to signs of **unconscious commentary** on whether we are following the process at hand without preferences so it organically unfolds, or pushing it beyond where it wants to go. We proceed with radical non-directivity (Roy, 2007, p. 375; Weiss, 2008).

> ***Darkness within darkness, the gateway to all understanding. Ever desireless, one can see the mystery. (1)***

Out of multiple possibilities for the soft assembly of parts, the system organizes around a particular one.

> Whereas before the elements acted independently, now certain configurations or collective actions of the individual elements increase until they appear to dominate and govern the behavior of the system. Haken (1977) refers to these dominant modes as the **order parameters**, which are capable of slaving all other modes of the system. The system can be described, therefore, in terms of one or a few-order parameters, or collective variables, rather than by the individual elements. The order parameter acts to constrain or compress the degrees of freedom available to the elemental components. (Thelen & Smith, 2002, p. 55)

Order parameters correspond to core organizing beliefs (Mischel & Shoda, 1995; Nowak & Vallacher, 1998, pp. 48-49). "Because order parameters are dynamical variables . . . they not only describe the response of a system, but they also determine the state of the system in succeeding moments in time, even in the absence of other sources of influence" (Nowak & Vallacher, 1998, p. 51), which, again, distinguish them from control parameters.

It could be that the system in a non-threatening environment simply organizes around its core belief. It carries out basic functions with core order parameters in the background. Consider a family of recent immigrants who believe that "America is not a welcoming or safe place." It is possible that though the family shares a core belief, that it organizes around the concerns of a particular member at a particular time. Perhaps, it is the scared member who needs reassurance; the nurturing member whose job it is to make home so attractive nobody needs to explore elsewhere, but gets tired; the protective member who answers the door and makes runs for needed supplies, who is weary of being so vigilant; or the unconvinced member who pushes for more curiosity and connection to this new world, who feels constrained by the boundaries. The family can manifest multiple looks in multiple situations.

> When systems self-organize under the influence of an **order parameter**, they "settle into" one or a few modes of behavior that the system prefers over all the possible modes. In dynamic terminology, this behavior mode is an **attractor state**. The system prefers a certain topology in its **state space**. The state space of a dynamic system is an abstract construct of a space whose coordinates define the components of the system; they define the degrees of freedom of the system's behavior. (Thelen & Smith, 2002, p. 56)

Nowak and Vallacher (1998) noted that "The concept of *state space* . . . enables one to generate a geometrical descriptions in the form of trajectories, even without complete knowledge of all the dynamical variables in the system" (p. 24). Gottman et al. (2005) were experimenting with using nonlinear terms in equations of change to understand behavior in couples. While these "equations are generally not solvable in closed functional mathematical form," they can result in visual graphical results that "can be very appealing in engaging the intuition of a scientist working in the field" (p. 37)

Thelen and Smith (2002) made it clear that the "control parameter does not control the system in any conventional sense; it is only the variable or parameter that assembles the system in one or another attractor regime" (p. 62). The family referenced above can manifest fear, a disposition to withdraw, or the face of defensive anger. The high school student with good grades and manners can become ferocious on the football field, relate as an insecure friend, or show up as an obsessive lover. Persons can show variable forms of attachment in relation to different persons (Siegel, 1999). "The concept that a system can assume different collective states through the action of a quite nonspecific control parameter is a powerful challenge to more accepted machine and computer metaphors of biological order" (Thelen & Smith, 2002, p. 62).

Thus, the order that emerges "is created in the **process of the action"** (Thelen & Smith, 2002, p. 63). Action is understood in terms of **stability and fluctuation**, and not simply schemata, filters, maps, programs, beliefs, and such. As stated above, a stable state where the system settles into a relative equilibrium "can be thought of as an 'attractor' state" (Thelen & Smith, 2002, p. 52), another term for order parameter.

Stability and fluctuation can also be thought of in terms of **continuity and flexibility.** Wilber's tenets 15 through 19 express various aspects of how a system moves toward increasing **complexity**. Siegel (1999) argued that

> Complexity does not come from random activation, but instead is enhanced by a balance between the continuity and flexibility of the system. "Continuity" refers to the strength of previously achieved states, and therefore the probability of their repetition; it implies sameness, familiarity, and predictability. "Flexibility" indicates the system's degree of sensitivity to environmental conditions; it involves the capacity for variability, novelty, and uncertainty. The ability to produce new variations allows the system to adapt to the environment. However, excessive variation or flexibility leads toward random activation. On the other hand, rigid adherence to previously engrained states produces excessive continuity and minimizes the system's ability to adapt and change. (p. 219)

Piaget talked about these developmental issues in terms of "assimilating" new experience into previous structures of organization, as opposed to "accommodating" to new experience by modifying and expanding the schemata, maps or order parameters, and thus incorporating increased complexity (Horner, 1974, pp. 9-10).

Attractors can have varying degrees of stability and instability, continuity and flexibility depending on the reinforcement of learned response schemas to anticipated events, as allostasis suggests. Siegel (1999) noted that neural nets that fire together tend to wire together. Schwartz's ecology of inner parts can be understood in terms of a CAS having "two or more attractors with different basins of attraction coexisting, . . .**multistable modes** which are discrete areas in the state space" (Thelen & Smith, 2002, p. 61). Thus, a person can act in varying ways, depending on the context.

In general, "CASs seek preferred behavioral modes as a function of the interactions of their internal components and their sensitivity to external conditions" (Thelen & Smith, 2002, p. 60). People can have varying parts take over because they are sensitive to something happening in the environment and/or because internal family members subjectively think something is happening, whether it has an objective base or not.

In terms of transformation in psychotherapy, "nonlinear phase shifts or phase transitions are highly characteristic of nonequilibrium systems and are the very source of new forms" (Thelen & Smith, 2002, p. 62). Here we are emphasizing that what leads to shifts or transitions are **fluctuations**, "the inevitable accompaniment of complex systems. It is these fluctuations that are the source of new forms in behavior and development and that account for the nonlinearity of much of the natural world" (Thelen & Smith, p. 63). "Change or **transformation** is the transition from one stable state or attractor to another" (Thelen & Smith, p. 63).

Change is fostered when "inherent fluctuations act like continuous **perturbations** in the form of **noise** on the collective behavior of the system. Within ranges of the control parameter, the system maintains its preferred behavioral pattern despite the noise" (Thelen & Smith, 2002, p. 63). However, when the internal and/or external perturbations sufficiently shake the system's ability to satisfyingly operate out of old order parameters, it can come to a **critical or bifurcation point** where transformation to new attractor states becomes possible.

There are an endless number of perturbations that can drive a system to fluctuating enough for someone to enter therapy: spouses or friends saying certain behaviors are enough to threaten the relationship; bosses saying addictions are getting out of hand; unhappiness growing through an inability to get beyond predictable, unsatisfying habits and interactions; longings for more meaning than what is being met through work or possessions; children being born or leaving the home; one's once solid pension being reneged, or decent paying job being outsourced, etc.

Mindfulness Principle

When clients do seek therapy, the fluctuations in their systems are disturbing enough that they want relief, and they have been unsuccessful in trying to make the change

themselves. Their failure is predictable since the core organizing parameters that affect perception and expression are normally unconsciously stored in **implicit memory** (Schacter, 1996, 1992; Siegel, 1999). The ordinary consciousness the client attempts to work with is already organized. Consciousness is the problem as Watzlawick (1974) and those who use hypnotic and/or paradoxical techniques assert.

However, the **process of action** can continue through the therapeutic relationship as the therapist attempts to work with this critical bifurcation point in the client's life. In general, Siegel (1999) wrote that "we are always in a perpetual state of being created and creating ourselves" (p. 221), as emergent and recursive patterns interact with life, especially interpersonal relationships. In the first phase of a Hakomi session, the therapist seeks to provide an interpersonal relationship that generates a safe, welcoming, and hospitable space where it is possible for clients to mindfully turn their awareness inward toward felt present experience (Kurtz, 1990, pp. 67-74).

Mindfulness, in the experience of Hakomi Therapy, is the most effective tool with which we can study the organization of our experience and begin to relate to it in healing ways (Johanson & Taylor, 1988, pp. 238-239; Siegel, 2007, pp. 164-188). Mindfulness is a core principle, method, and practice in Hakomi Therapy. As Nowak and Vallacher (1998) expressed, "What really sets the human mind apart from other systems in nature . . . is its ability to reflect on its own operations and output" (p. 4)" "The self-evaluation afforded by self-awareness . . . can provide the impetus for people to modify their own psychological structure and thereby change their internal bases for action" (p. 5).

Present experience is always the focus of mindful therapy because it is what is currently organized by the order parameters or core narrative beliefs, and immediately manifest in sensations, feelings, thoughts, memories, attitudes, relational ways of being, dreams, posture, breathing, movements, and so forth (Roy, 2007, pp. 374-75). Morgan (2006) reminded us that neurologically "because emotional memory is always in the now, the old perceptions, feelings and behaviors become blended with the current situation" (p. 15). The chapter on transference in Stolorow, Brandchaft, and Atwood's work (1987) on psychoanalytic intersubjective theory is titled "The Organization of Experience," indicating transference is revealed in how one has made meaning of his or her world, including significant others, something that is present every moment in every situation.

In a second phase, after encouraging mindfulness of present experience, a Hakomi therapist often moves toward introducing the optimal amount of increased perturbations to evoke the issue at hand more fully. Kurtz (2002) noted that "complex adaptive systems learn on the border of order and chaos . . . in a zone where change and memory are possible. . . .[a] zone between the crystal fixity of ice and the frivolous anarchy of water, between the unchangeable world of rigid order and the chaos of the uncontained variation" (p. 1). The art of the therapy is to heat things up enough (Kurtz, 1978) that signals emerge to guide clients deeper into their core narrative themes, but not so far and fast that they are overwhelmed and unable to retain meaning.

One Hakomi method for heating things up is **accessing** (Fisher, 2002, pp. 59-60), bringing awareness to bear on an issue of concern as it manifests in present moment experience. If clients present sadness, and therapists invite them to suspend judgments or explanation in favor of bringing spacious **mindful attention** to where the sadness is in the body, or what the quality of the sadness is, the sadness invariably deepens (or unveils fear-infused barriers to doing so, which then become the new objects of mindfulness).

Focusing attention on one thread of experience draws others to it, **deepening** (Fisher, 2002, pp. 60-68; Kurtz, 1990, pp. 115-124) the mindful exploration. Siegel (1999) suggested, ". . . as elements of your brain become active, they may recruit other neuronal groups to join in the pattern of activation" (p. 218), as the hippocampus collects pieces of implicit and explicit memory to make available for change a normally unconscious multimodal pattern. Sometimes the process leads quickly or unexpectedly to primal memories of grief or non-support that can be explored for what they need.

> ***Learning consists in daily accumulating; the practice of Tao consists in daily diminishing. (48)***

Or, since the problem with a client's core belief is often that it has organized out needful and realistic aspects of life such as the possibility of being supported, the therapist can pick up **indicators** of how this belief manifests in the person (Kurtz, 1976; Keller, 2005, p. 6, pp. 13-14). Then an **experiment in awareness** can be done, such as inviting the person to be mindful, and to study how he or she organizes around the words, "It is okay to take in support." If the therapist's hypothesis is correct, barriers to the words immediately arise in terms of thoughts, feelings, sensations, muscular tensions, memories, and such that can foster the activation of the order parameter in its multimodal pattern or belief system (Fisher, 2002, pp. 69-96).

Principle of Non-Violence

Sometimes these actions function to make the process overheat. In system theory terms, **unstable patterns** and **transient behaviors** may manifest. In Hakomi terms, the person may enter into **riding the rapids** (Johanson & Taylor, 1988, p. 239) where there can be crying, spontaneous emotional release, with concomitant efforts to hold in. Sometimes, with this issue of lacking early support,

there are bitter tears at remembering harsh formative memories. There is often a mix of grateful tears at welcoming new possibilities that are simultaneously resisted by the fears of the old order parameters. The therapist must skillfully maintain calm, support, or **take over** (Roy, 2007, pp. 371-72, 378-79) the spontaneous movements until the person returns to the possibility of mindful consciousness.

Taking over in Hakomi refers to a set of techniques that take over for clients what they are already doing for themselves in terms of muscular tensions, inner voices, etc. These techniques are congruent with the non-violence principle of Hakomi that honors all behavior for its organic wisdom, and provides the safety that is necessary for turning one's awareness inward in a mindful way (Fisher, 2002, pp. 6-8, 97-108). When properly done, taking over techniques serve to support and honor one's defenses, reduce tension, lower the noise in the system, and thereby increase sensitivity to the guidance of organic signals. They are a deep reflection of Hakomi's roots in Taoism.

> ***(The sage) is ready to use all situations and doesn't waste anything. This is called "following the light." (27) The sage gives herself up to whatever the moment brings. (50)***

In some cases where there has been literal trauma of being fearful of death, the client could dissociate in various ways. The therapist would need to switch from top down processing of thoughts and feelings to bottom up processing of sensations that separate them from a trauma vortex connected to feelings and memories (Ogden, Minton, & Pain, 2006).

In the third phase of a Hakomi process when clients are in the transient state of mindfully (Johanson, 2006a) working with barriers, and curiously exploring (Johanson, 1988) the possibility of yielding to new attractor states that encompass new realities, therapists must be exquisitely sensitive to every nuance of anxiety or resistance. Radical openness to the client's organic wisdom and unfolding must take precedence over the therapist's hunch or desire for where the transformation is heading. Ogden, Minton, and Pain (2006, p. 195) wrote: the "therapist adopts an '**experimental attitude'**—a mind-set of openness and receptivity that is characterized by curiosity and playfulness rather than effort or fear (Kurtz, 1990). The experimental attitude invites exploration of new experiences without investment in a specific outcome." This is also an expression of non-violence.

> ***The Tao nourishes by not forcing. By not dominating, the Sage leads. (81)***

In Schwartz's terms, controlling **manager** parts and out-of-control **firefighter** parts in one's **inner ecology** must be honored and respected before attempting change with vulnerable, wounded, **exiled or child** parts. Old order parameters are in place for good reasons. Even if they now seem out of date, the past experience and wisdom they are based on must be acknowledged and integrated into new wider possibilities. In Hakomi terms, defenses are best supported rather than opposed or fought (Johanson & Kurtz, 1991, pp. 40-47).

> ***Whoever relies on the Tao in governing men doesn't try to force issues or defeat enemies by force of arms. For every force there is a counterforce. Violence, even well intentioned, always rebounds upon oneself. (30) Can you love people and lead them without imposing your will? Can you deal with the most vital matters by letting events take their course? (10)***

In the transformation/integration phase when clients are in that transient space of considering new attractor states that contain new beliefs and experiences in relation to old fears, burdens, and memories, it is crucial that the person's **essential, or core self** (Almaas, 1988; Eisman, 2006; Fosha, 2000; Kurtz, 1990; Schwartz, 1995;) come into play to insure second-order change. This relates to Bateson's (1979) point that systems are organized into a **hierarchy** of levels (Ogden, Minton, & Pain, 2006, pp. 3-25). As Wilber (1995) put it, hierarchies of developmental sequences were built into life. In general, the sciences of complexity

> . . . maintain that you cannot have wholeness without hierarchy, because unless you organize the parts into a larger whole whose glue is a principle higher or deeper than the parts possess alone—unless you do that, then you have heaps, not wholes. You have strands, but never a web. Even if the whole is a mutual interaction of parts, the wholeness cannot be on the same level as the partness or it would itself be merely another part, not a whole capable of embracing and integrating each and every part. "Hierarchy" and "wholeness," in other words, are two names of the same thing and if you destroy one, you completely destroy the other. (p. 16)

Riane Eisler (1987, pp. 105-06) argued the importance of distinguishing **domination hierarchies** that inappropriately usurped and imposed power, from **actualization hierarchies** that supported and maximized an organism's developmental potentials.

Healing or change happens in part because the client is able to accommodate new or **missing experiences** (Kurtz, 1990, pp. 146-47), helping to counteract and/or balance old experiences that have resulted in a limited organization of experience. For transformation, insight is never enough. It takes an experience to offset another experience. In addition, there must be a change in the client's relationship to their organization as such. As Segal, Williams, and Teasdale (2002) discovered when they researched the effectiveness of cognitive therapy with depression:

> . . . it turned out that the reason was not the common assumption that the contents of depressive ideation were being changed, but that the patient's relationship to negative thoughts and feelings was altered. (pp. 38)
> It was the distancing or de-centering aspect of cognitive work that proved helpful through allowing one to shift perspective and view negativities as passing events rather than abiding realities. (Johanson, 2006, p. 21)

In Kegan's work (1982) this was an issue of **subject-object differentiation**. Clients moved to no longer identify with their current organization, but made what was once subject, now object, thus dis-identifying with it to an extent. Kegan's overall description of the transformational process under consideration here was in three stages in which the structure of a client's present order parameter was first affirmed so that he or she could hold on to it. Then material was introduced that contradicted or revealed the inadequacy of the present organization, leading it into a transient unstable space that encouraged letting go or loosening up of parameter structures. Thirdly, the therapist maintained contact and continuity for the reintegration of the new attractor state.

This process of differentiation and de-centering is what the **witnessing** aspect of Hakomi Therapy does when people are invited into and encouraged to remain in a **mindful** state of consciousness. **The witness** can simply act in a passive way that brings **bare attention** to studying the organization of one's experience, helping the client know that *I am not just my anger or fear. Certainly my awareness that is doing the witnessing is not angry or fearful.*

The witness can also bring essential qualities such as compassion and wisdom to bear to heal the fragmented ego in an active way. **The Self** in Schwartz's (1995) terminology, or the **Organic Self** of Eisman (2006) embraced both these **active and passive capacities of consciousness**. As Marlock and Weiss (2006a) expressed it, the Self

> . . . is a higher state of consciousness that has the capacity to modulate and integrate an entire system of parts. . . to constructively deal with, heal, and integrate all the parts/trances that a person is composed of—and initially identified with. If no Self-like function was able to accomplish this process, the body-mind-whole would lose integration; parts would polarize, entertain hostile relationships, and fragment. Differentiation would slip into dissociation. . . .The Self will eventually be able to perform functions of integration and regulation that are temporarily provided by a therapist—or the mothering person on the developmental level. A therapist has to provide space for Self-regulation to occur. . . .The emergence of a Self, or expressed phenomenologically, the occurrence of a cohesive, integrative Self-state, is a measure of maturation and health. . . .Maturation . . . [is] based on integrative functions of the Self that clarify and value the contributions of each component of the body-mind. (p. 50)

Varela, Thompson, and Rosch (1991) discussed mindfulness in relation to freedom:

> Through mindfulness, the mindfulness/awareness practitioners can begin to interrupt automatic patterns of conditioned behavior (specifically, they can let go of automatic grasping when craving arises). . . . As mindfulness grows, appreciation for the components of experience grows. The point of mindfulness/awareness is not to disengage the mind from the phenomenal world; it is to enable the mind to be fully present in the world. The goal is not to avoid action but to be fully present in one's actions, so that one's behavior becomes progressively more responsive and aware. . . . To be progressively more free is to be sensitive to the conditions and genuine possibilities of some present situation and to be able to act in an open manner that is not conditioned by grasping and egoistic volitions. This openness and sensitivity encompasses not only one's own immediate sphere of perceptions; it also enables one to appreciate others and to develop compassionate insight into their predicaments. (pp. 122-23)

Ogden, Minton, and Pain (2006, p. 169) offered the following example of how mindful Self-witnessing was employed to help a client study the organization of her experience in terms of sensations, thoughts, and movements in relation to a traumatic car accident. The therapist and client

> . . . study what is going on, not as disease or something to be rid of, but in an effort to help the client become conscious of how experience is managed and how the capacity for experience can be expanded. The whole endeavor is more fun and play rather than work and it is motivated by curiosity, rather than fear. (Kurtz, 1990, p. 111)

> Through mindfulness of **present-moment organization of experience**, the client shifts from being caught up in the story and upset about her reactions to becoming curious about them (Siegel, 2007). She notices that as she talks about the accident, she has the thought, I am going to die. Next she observes her body tensing in response to the thought, and she describes feeling slightly panicky. Rather than reliving this experience, as she might have done if the therapist had not directed her attention to observation of the present-moment

> organization of it, she is learning to step back, observe, and report it. She is discovering the difference between "having" an experience and exploring the organization of that experience here and now, days or weeks or years after the event itself.
>
> Mindful observing of here-and-now experience changes **information processing.** Rather than triggering bottom-up hijacking of cognitions or escalation of trauma-related beliefs and emotions about impending danger, the act of mindful exploration facilitates **dual processing**. Clients do not get caught up in their trauma-related beliefs or arousal, but rather, study the evocation of titrated components of internal experience, especially the body's responses. Arousal stays within the **window of tolerance** and associations with traumatic memories begin to shift from automatic and exaggerated reactions to mediated, observable response.
>
> The use of mindfulness has been shown to change brain function in positive ways, increasing activity in areas of the brain associated with positive affect (Davidson et al., 2003). Mindful exploration of present-moment experience is also thought to engage the executive and observing functions of the prefrontal cortex. The prefrontal cortices and cognitive functions often fail to inhibit the instinctive defensive actions kindled by unresolved past trauma (Van der Kolk, 1994), and the ability to self-observe is hindered. Activating the prefrontal cortex allows clients to maintain an observing presence. The therapist's job is to "wake up" the prefrontal cortices through mindfulness, stimulating the curiosity typical of the **exploration action system** in service of discovering the organization of experience. The capacity to maintain observation of internal experience is what can prevent clients from becoming overwhelmed by the stimulation of past traumatic reactions and develop "**mental coherence**" (Siegel, 2006).

However the **process of action** proceeds intersubjectively (Stolorow, Brandchaft & Atwood, 1987), working with trauma or developmental issues with the recognition that both client and therapist organize around engrained perspectives (Bertalanffy, 1968). The Self-Witness needs to provide a **holding environment** for the system to evolve into the stability of a new attractor state. Part of the holding environment is the therapist's appreciation for the beauty of clients' creativities in finding ways to manage and survive, as well as their longings to pursue attractors that include higher levels of freedom (Richards, 2001).

As Fosha (2000) expressed it: "The **core state** . . . refers to an altered state of openness and contact, where the individual is deeply in touch with essential aspects of his own experience. The core state is the internal affective holding environment generated by the self" (p. 20). Ogden, Minton, and Pain (2006) echoed this perspective by saying that operating from

> . . . the core—the symbolic and physical center of the body that represents the core sense of self—helps clients accomplish [the] task [of moving from constricted victim to empowered initiator]. In a "core state," which in sensorimotor psychotherapy includes connection to the core of the body, clients are [indeed] deeply in touch with essential aspects of [their] own experience. (p. 271)

Perhaps a Hakomi therapist allows his or her client to be or to embody the part of him or herself that organizes out support, as the **barriers** to this possibility are explored and softened. Then, the client is finally able to move through the mindful transient state of flux to a new, more inclusive parameter as he or she is able to accommodate the therapist's words, spoken from his or her Self or core state in mindful **loving presence**: *It is okay to take in support when you are confident the person will not leave you without warning.* A transformational leap occurs from *nobody is ever there for me at any time* to *some people can be there for me some of the time.* The system's organization as an "anticipatory machine" or living organic system has been affected to allow more complexity (Thelen, 1989) and allostatic nuance (Sterling, 2004).

Siegel (1999) confirmed that such small changes in the constraints of the system can yield nonlinear "large changes in behavior and internal experience" (pp. 221, 223). Likewise, Fosha (2000) affirmed "affect-centered models of change deal with rapid transformation" (p. 19). Recall the example above of the child thinking it had lost and then found its mother.

Transformation, or an evolutionary advance according to the sciences of complexity, happens through turbulence, and the resultant catastrophic bifurcations that move a system into a third state, far from equilibrium position, and then shift it from one attractor to another. Laszlo (1994) wrote that when this occurs

> . . . the system achieves a new state of dynamic stability, the chaotic attractors of the bifurcation epoch give way to a new set of point or periodic attractors. These attractors maintain the system in a condition far from thermodynamic equilibrium, with [1] more effective use of information, [2] greater efficiency in the use of free energies, [3] greater flexibility [relative autonomy], as well as [4] greater structural complexity on a higher level of organization. (p. 93)

These four markers of transformation are congruent with criteria that some counselors and spiritual directors use for noting a person's growth in ability to love. During the **integration phase** of the session, the therapist will need to insure the person's own active Self state is on board by communicating in some manner. For example: *Now it is good if You can say that same thing I said a few moments ago to this part of you that was feeling so fearful of taking in support. Notice if You are in that compassionate place toward it, and then try saying "It is okay to take in support when . . .*"

It is also possible the person's active Self-state has been involved earlier in the process. The therapist could have guided or coached the process by collaborating with the client's Essential Self (Organic Self, Heart Self, Ontological Self, Higher Self, etc.) or Self state (Cole, 2006): "What does this part of you seem to need? . . . Oh, something about knowing people won't leave without warning like they did when it was four. How about experimenting with that, saying to him that, 'it's okay to take in support if you are confident the person will not leave you without warning,' and see if he takes it in?"

> ***Open yourself to the Tao, then trust your natural responses; and everything will fall into place. (23)***

However it evolves, the witnessing-compassionate-Self state ends up in a position of leadership or actualizing hierarchy that can take the system under observation while providing wisdom and care for the constituent parts. In this model the Self-state is an essential human capacity that comes by virtue of birth, in contrast to the drama of the parts that are affected by historical circumstances and object relations.

> ***The Tao is called the Great Mother: It is present within you. (6) Every being in the universe is an expression of the Tao. (51) How do I know about the world? By what is within me. (54)***

The Self-state is likewise crucial for affecting the neurological substrate of core beliefs mentioned above. As the Self-state is compassionately and reassuringly brought to bear on the parts from day-to-day, like a parent regularly checks with a child in an interpersonal way, new neural pathways are constructed as the more encompassing core narratives are integrated (Germer, 2006). The old ones wither from disuse over time, and the new ones gain strength as they are nurtured along (Siegel, 2007, pp. 288-320). Siegel noted that it is the same neural mechanisms involved in early childhood attachment that were evoked when the Self was brought into mindful, compassionate relationship with our internal parts. The parts thus learned to trust the larger wisdom and compassion of the Self, and rest in it.

Emergent Transformation to Self-Transcendent Compassion

There is a bridge here between Eastern and Western psychology. The Essential Self state can bring **active compassionate healing** to the fragmented, historically conditioned parts, as is valued in the West. This same state of consciousness can maintain **passive bare attention** of the inner world until one is pulled into the ultimate attractor state of the **no-self or unity consciousness** heralded in the East, where it is revealed that ultimately there are no boundaries (Wilber, 1979) within what Laszlo (2004, p. 120) termed the coherent fine-tuned interconnected whole.

> ***All things arise from Tao. They are nourished by Virtue. They are formed from matter. They are shaped by environment. Thus the ten thousand things all respect Tao and honor Virtue. Respect of Tao and honor of Virtue are not demanded, but they are in the nature of things. (51)***

Laszlo (1974), who also applied systems theory to issues of world society in his *Strategy for the Future*, wrote about what Wilber would call the four-quadrant impact of therapy that worked with mindful subject-object differentiation. It raised levels of consciousness that embraced greater levels of compassion, or the ability to be moved in the guts (from the Greek) by the situation of others.

> Consciousness evolution is from the ego-bound to the transpersonal form. If this is so, it is a source of great hope. Transpersonal consciousness is open to more of the information that reaches the brain than the dominant consciousness of today. This could have momentous consequences. It could produce greater empathy among people, and greater sensitivity to animals, plants, and the entire biosphere. It could create subtle contact with other parts of the cosmos. It could change our world.
>
> A society hallmarked by transpersonal consciousness is not likely to be materialistic and self-centered; it would be more deeply and widely informed. Under the impact of a more evolved consciousness, the system of nation-states would transform into a more inclusive and coordinated system with due respect for diversity and the right of all peoples and cultures to self-determination. Economic systems would remain diversified but not fragmented; they would combine local autonomy with global coordination and pursue goals that serve all the peoples and countries of the world, whatever their creed level of economic development, population size, and natural resources endowment. As a result, disparities in wealth and power would be moderated and frustration and resentment would diminish, together with crime, terrorism, war, and other forms of

violence. Societies would become more peaceful and sustainable, offering a fair chance of life and well-being to all their members, living and yet to be born. (Laszlo, 2004, pp. 152-153).

When the world is governed according to Tao, horses are used to work on the farm. When the world is not governed according to Tao, horses and weapons are produced for the frontier. No crime is greater than that of ambition. No misfortune is greater than that of discontentment. No fault is greater than that of conquering. (46) The Way of Heaven is to benefit others and not to injure. The Way of the sage is to act but not compete. (81)

The effect of increasing consciousness was the theme of David Hawkins in many of his works (2006, 2002). Siegel and Hartzell (2003) applied growth in consciousness to everyday parenting. In Hakomi, it is deepening into the interconnectedness of the unity principle that increases compassion consciousness. In Internal Family Systems work, it is an example of Self leadership qualities that apply on all levels of a system. Wilber wrote of progressing from the noosphere (mind) to the theosphere (soul-spirit). For Gordon (2003) it was a matter of a mysterious and unpredictable universe opening into the unknown transpersonal.

Cultivate Virtue in your own person, And it becomes a genuine part of you. Cultivate it in the family, And it will abide. Cultivate it in the community, And it will live and grow. Cultivate it in the state, And it will flourish abundantly. Cultivate it in the world, And it will become universal. (54)

Since we know from research on psychotherapeutic effectiveness that the relational qualities the therapist brings to growth processes is eight times greater a factor than the particular methodology employed (Mahoney, 1991), the need for therapists to work on themselves to allow more of their Essential-Organic Selves to lead their interventions has been emphasized (Fisher, 2002, pp. 13-17; Schwartz, 1995, pp. 157-59). The being of the therapist must be a primary concern of training programs in addition to the mastery of skills.

He who knows men is clever. He who knows himself has insight. He who conquers men has force. He who conquers himself is truly strong. (33) When you are content to be simply yourself and don't compare or compete, everybody will respect you. (8)

The sage uses words sparingly. When the work is done, the people say, "Amazing: we did it all by ourselves." (17) Withdraw as soon as your work is done. Such is heaven's way. (9)

When trust is insufficient, there will be no trust in return (17)

Conclusion

One of Bateson's concerns that May (1976) outlined is that ideas have consequences. Now that a number of ideas have been broached about psychotherapy, spirit, and the sciences of complexity, it would be good to look at what their consequences might be. Since this article has been heavily descriptive of how the principles of CAS and psychotherapy might interface in practice, it would be appropriate to take a step back to consider some meta-questions, however, space does not permit further consideration here. Instead, I will list a few questions out of many possibilities for later research and discussion.

For instance, are there serious consequences in relation to humanistic, spiritually-inclusive psychotherapy being more connected with scientific fundamentals than Bateson (1979) thought in his day? Having used some of Bateson's own theoretical ideas, those of the Santa Fe Institute, and others in the psychology-nonlinear systems dialogue, do we still allow for the dimensions of grace and art Bateson valued? Is there still room for the union of feeling and thinking that poetry conveys?

In terms of Sundararajan (2002) concerns, after immersing ourselves in scientific perspectives can therapy still be "an open-ended process, which unfolds in the expressive space of the body and capitalizes on the strategic play with temporality" (p. 45)? Can therapists retain their calling as "tinkerers" creatively using what is available, as opposed to becoming "engineers" following the rules of a treatment manual? Since learning to do therapy is experiential like learning how to ride a bike, how hard will it be to learn to ride in practice while struggling to assimilate such abstract theories about how to ride? Hopefully, the perspective of nonlinear systems that disputes pre-packaged approaches will help here.

Do the abstract concepts of CASs truly describe the reality of a human living organic system such that we should strive to integrate them in our therapy? Does it constrict spiritual concerns to think in terms of CAS? Are flexibility and creativity retained? Is the language appropriate to full human-beingness? Can we really escape the dilemma of Freud's compulsion to repeat through fostering emergent transformation?

Do we risk seeing parts of a system as real as opposed to acknowledging their patterns and contextual roots in relationships that Bateson (1979) taught? Do we leave enough room for immaterial form, order, and pattern to escape being materialists?

To what degree are the spiritual or Taoistic concepts that Hakomi Therapy, Wilber, and other mind-body-spirit therapies incorporate actually congruent with the wisdom of contemporary philosophy of science? To what extent are Hakomi methods, such as the use of mindfulness and taking over techniques, clinically promising for engaging therapeutically with human nonlinear systems?

Obviously, Hakomi practitioners and theorists would have relatively positive responses to these queries. However, it is the wisdom and dialogue of the wider community that moves the field forward as a whole. Continuing research about the integration of contemporary science and spiritually inclusive psychotherapy is a worthy task to engage as we struggle with the promises and pitfalls of transformational therapy.

> ***A good traveler has no fixed plans and is not intent upon arriving. A good artist lets his intuition lead him wherever it wants. A good scientist has freed herself of concepts and keeps her mind open to what is . . . . She is ready to use all situations and doesn't waste anything (27)***

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