

# Toward An Integral Process Theory Of Human Dynamics: Dancing The Universal Tango

Sara Ross

**Abstract:** This article is an outline toward developing a fuller process theory of human dynamics aimed at practical applications by a diverse audience. The theory represents a transdisciplinary synthesis of a universal pattern and integrates humans' projection dynamics with complex systems dynamics. Five premises, presented in lay language with examples, capture basic elements involved in the meta process of human development and change: reciprocity, projection, development's structural limits, oscillations, and structural coupling. Based on a fractal dialectical pattern that shows up wherever complex systems are involved, the theory's applications are scalable. It could be useful for personal development, public policy design, issue analysis, and systemic action on intransigent issues. It may be a complementary adjunct to developmental stage theories because it deals in an accessible way with the processes involved in stage transitions. Throughout the article, its practical relevance at some individual, social, and political scales is illustrated or mentioned. Readers interested in individual and social change may gain a sense of the human dynamics involved in it, and thus the potential usefulness of a process theory that describes what goes on in human change and development.

**Key words:** developmental process, dynamics, fractal, human development, integral, meta pattern, meta process, metasystems, oscillations, physics, processes, process theory, projection, psychology, public policy, public issues, reciprocity, reciprocal interaction, social change, structural coupling, systems, tango, universal

*Everybody knows the world is made up of processes from which patterns emerge, but we seldom give pause to what this means.  
~ J. A. Scott Kelso (1995, 3)*

## Introduction

This article outlines an integral process theory that attempts to capture and integrate the meta pattern of dynamic processes involved in individual and social change and development. It offers a window into the processes of human dynamics, akin to the "black box" installed in a modern aircraft that tells what operations the aircraft has performed to adjust to flying conditions, pilot instructions, and its own mechanical functions and malfunctions.

The idea to formulate this in terms of a theory is a result of realizing I could no longer write about some subjects of social significance without having it—and some, though not all, of its implications—already spelled out in an independent and transdisciplinary way. Its genesis was

---

INTEGRAL REVIEW 1, 2005



this last year's series of attempts to produce manuscripts I was excited about, only to abandon them because they did not succeed in developing the subjects in writing as robustly as my thinking off-paper did. Each subject needed a lot of foundation laying before I could launch into it. I found myself trying to squeeze in references to only parts of this pattern, which just obscured it and packed its "building blocks" like sardines in a can. My central subjects were left no room to develop into the depth of social analysis I was aiming for in the first place. Through discussion with colleagues, I came to realize the whole set of premises my thinking has been based on for quite a while constitutes a theory, and it needs independent description as such. Thus, this article's origin is self-serving and functional. I offer it because I believe it can serve others in functional ways, too.

The theory's origins are not easy to relate as briefly as this article's origins. Overall, it is the result of my last twenty years' processes of integrating an eclectic range of reading and study with my continuously evolving experiences in all domains of life and intense exploration and integration of them. Periods of individual and family counseling awakened and sharpened my attention to projection dynamics and how they change. Myriad syntheses became platforms for subsequent ones, resulting in the scaffolding represented here. This process theory of human dynamics describes my own process in arriving at it, too. Milestones in my understanding in recent years included:

- Several years of intense study of over a dozen developmental theories and internalizing the human story they tell with the stories that life tells;
- Internalizing *how* our structures of operating<sup>1</sup> involve our entire function *as* whole, undivided organisms;
- Recognizing the concepts of reciprocal interactions and structural coupling are formal terms for the personal micro and macro processes of development I observed in my own functioning as well as in my family, one-on-one ministry, and public action research. Together, they led to developing my theory of how to foster individual and socio-political development – that development progresses *while and by* engaging in complex interactions (which I later found Vygotsky (1978) saying too);
- Integrating all the foregoing with why Bateson (2000) says cybernetic systems are the units of evolution
- And finally, delightfully, having the last explanatory "chunk" that tied it together for me fall into place via Laszlo's (2003) physics, and Wolff & Haselhurst (2005) recently tied the bows in it.

According to Commons and Richards (2002, 2), developmental theories need to address three dimensions of behavior: "a) what behaviors develop and in what order, b) with what speed, and c) how and why development takes place." This article addresses the third dimension: the how and why of development. It is about a *process* theory of development that refers to and requires developmental theories' specific insights. This dimension is often missing in developmental theories because "developmental psychology as a whole has been concerned with what develops and in what sequence" (Commons & Richards, 2) and has been largely silent about the processes involved. Complementary to the work of those authors, this approach to a process theory of human dynamics helps to fill that void.

---

<sup>1</sup> Instrumental for my understanding were Rosenberg (1988; also see 2002) and Michael Commons' work with his numerous colleagues (see references).

## A Way To Peer Into “black boxes”

For many people, trying to understand human behavior can engender a desire to “peer into the black box” of individuals, groups, communities, organizations, governments, and societies. For those of us committed to fostering healthier individual and social relations and development, there is a fundamental need to understand the processes underlying them. Processes and the patterns they create have explanatory power for understanding how and why things happen as they do. Since the meta pattern’s processes transpire at all scales, the theory may be useful to a broad range of interests, which include but are not limited to personal, socio-political, and theoretical, e.g.:

- For people who want to increase their self-awareness and its reflexion, it could facilitate new noticing of specific inner and outer dynamics and learning more about one’s own motivations, assumptions, reactions, choices, and the learning process itself.
- For those who develop policy or organize approaches to address complex issues, it could be a complementary framework to recognize patterns that can hold intransigent issues in place as well as open them to healthier conditions.
- For those who study or use theories with universal stages of human development, this could complement them with an organic look at the dynamics involved in stage-transition processes.<sup>2</sup>
- For those who study complex systems and wonder how they correlate with developmental psychology or even describe humans, this may be an introduction.
- For those who think and write about human issues and design methods to address them, the theory may serve as a foundational set of assumptions from which to launch analyses, and enable them to focus more directly on their specific subject matter because some of the basic assumptions can be referenced rather than explained anew.

The meta pattern captured in this theory shows up in all systems’ dynamics at all scales of time-duration, breadth, and depth. In terms of humanity and time, it ranges from an instant, to the duration of reading this article or being in a meeting, to the lifetimes of individuals, organizations, and societies. In terms of breadth, its dynamics occur in our individual selves just as they do in dynamics between and among individuals and social groupings, our cybernetic systems, and our socio-cultural systems. In terms of depth, it is inherent in the nested layers of systems and metasystems, from individuals all the way up through their societies and beyond.

One implication is that we all participate in the processes and contribute to the pattern because they are inherent in how we function, interact, and develop. Yet, it is often difficult to notice things we are embedded in doing. Noticing patterns involves stepping back from things a bit. My aim for this article is offering an opportunity to step back, and to make transparent (a) the dynamics that make up the pattern I call the universal tango, (b) the many scales on which we are dancing that tango, (c) the “how” of the dance, and (d) the significance of observing the underlying processes in the “black box” of change and development.

---

<sup>2</sup> E.g., Kegan’s subject-object, Graves’ theory of human emergence, life conditions and value systems, Wilber’s integral theory, quadrants, and holons

## Outline of The Process Theory

### Introducing the Meta Pattern It Describes

The outline I am presenting is based on the synthesis I described earlier, of years of eclectic study and observations, analyses, and reflections on processual patterns in myself, others, and the world we live in. I encountered evidence of the pattern everywhere in these domains whenever I “saw through the costumes” it dresses in across scales of time and space. Whether dressed up as anthropology, biology, chaos and complexity, education, human energy systems, history, neurology, philosophy, physics, political science, psychology, or theology, I found (as did Kelso 1995) that a range of fields describe the similar processes and patterns. I noticed, as did Van Eenwyk (1997, 13), that “analytical psychology and physical and mathematical science all employ virtually identical metaphors to understand particular phenomena.” A dynamic meta pattern shows up, and in Kelso’s terms, I gave pause to what it means. Condensed in one place here, it may give pause to others, too.

To convey this with practical applications in mind, I discuss it in tandem with a case to illustrate it at familiar personal and interpersonal scales (while I also take reasonable opportunities to indicate its broad application at all scales). I choose this focus for three reasons. First, we have in common our lived experience of the personal and interpersonal scales. Second, I have a conviction born of my own experience that when we (a) discover and become intimately acquainted with the dynamics going on in our selves, and (b) recognize how those dynamics play out in our interpersonal lives with others, that (c) we are far better equipped to recognize and understand dynamic processes of many kinds going on everywhere else and thereby transfer the learning. This is how we learn to “peer into the black box” of human dynamics. Finally, I hope by discussing it at these familiar levels that this article will be meaningful beyond any intellectual exercise.

To offer readers a sense of the theory’s applicability to other scales of experience, I periodically refer to dynamics reported in a short, web-accessible booklet. The result of participatory research with youth on the issue of substance abuse, it includes an approach to addressing the issue at the community level that reflects some understanding of this meta process.<sup>3</sup>

While I want this outline of a theory to indicate the rigor that produced it, my purpose in this brief article is its general introduction, not its theoretical defense. Therefore, my writing style is non-technical and I confine theoretical supports to footnotes that represent the broad transdisciplinary supports and foundations. My aim is to make this outline accessible so it is useful for (a) noticing and unpacking dynamics’ layers and relationships (b) ongoing reflection on what can be learned from them (in order to integrate the learning), and (c) eventually transferring the learning to perceptions of other events.

---

<sup>3</sup> See *The problem behind the problem of youth substance abuse: What can we do?* (Ross, 2000) at [http://www.global-arina.org/readpublish/reading\\_room/read\\_room\\_commpol\\_developmt/Problem\\_behind\\_problem%20youth\\_drugs%20booklet.pdf](http://www.global-arina.org/readpublish/reading_room/read_room_commpol_developmt/Problem_behind_problem%20youth_drugs%20booklet.pdf).

## Premises Of This Process Theory

The theory describes one overall meta pattern I call the universal tango. As Kelso suggests above, patterns emerge from the processes that comprise them. I describe this pattern through five straightforward premises about its processes' qualities. My introductory-level outline of those premises is accompanied by the phased introduction of a model that depicts each premise's *role* in this pattern of human dynamics. The premises are:

1. It takes (at least) two (of something) to tango.
2. Whatever we don't tango with directly (but could), we put "out there."
3. There are limits to what we can tango with, and they diminish as we develop.
4. There are common dynamic processes involved in dancing the tango
5. Something new emerges from each and every tango.

These premises are like different zoom-angle lenses on qualities of the whole pattern. They represent its dynamic processes. Although they have item numbers for convenient reference, they should not be viewed as a linear sequence of steps because they are not steps at all, but rather premises about a whole. They aim to "reveal the whole elephant" by touching on key aspects of it. This is an important point that is easy to forget when we read in a linear, sequential fashion.

### **Premise 1: It takes (at least) two (of something) to tango.**

Nature, including our thinking and our personal experience, is full of what we call two-ness, dualities, or polarities.<sup>4</sup> The old dance saying that "it takes two to tango" is a useful reminder that we are never with "just ourselves" but rather we are always in interactive relation *with* our selves, others, and our larger environments. Interactive relations are characterized by continuous, dynamic feedback and feedforward processes or loops that connect the people and systems involved.

This first premise is that various forms of interaction of one with another are existential characteristics of being human. Such interactions are always going on at all scales of functioning we can identify. This is the universal dynamic of *reciprocity*.<sup>5</sup> It takes at least two of something to tango, and there are always tangos going on. For example, from the conditions that give rise to teenagers' stress<sup>6</sup>, to their reactions to that stress and their ways of coping with it,<sup>7</sup> to rewards of various kinds for supporting a political candidate, to the "tit for tat" behaviors between nations and other groups, the recursive feedback and feedforward loops characterize humans and all open systems. These dynamics look different—they "wear different clothes"—depending on contexts, scales, and how we adjust our zoom lenses to notice them. However, once the clothes

---

<sup>4</sup> Systems from cells to humans to societies to galaxies and beyond are a part of and in relation (two-ness) to other systems, and even movement has relations to itself. New physics' understandings of the nature of matter posits waves of motion in two directions, in-coming and out-going (Haselhurst & Wolff, 2005).

<sup>5</sup> Different terms are employed by various fields to refer to reciprocity dynamics, e.g., the human universal called reciprocity (Brown 1991), the reciprocity complex (Gouldner 1977), reciprocal perturbations (Maturana & Varela 1987), the reciprocal dynamics evidenced in brain research that apply to interpersonal, socio-political, and economic behaviors (Cory 2004), the reciprocal interaction of the universe's domains (Laszlo 2003), etc.

<sup>6</sup> *The problem behind the problem*, p. 4.

<sup>7</sup> *Ibid.* pp. 5-6

are removed, once we look inside the “black box,” we see the same dynamic pattern operating below the surface.



**Figure 1**

In Figure 1 an organic double funnel represents this premise, with dynamic and symbolic significance. Like one of the basic movements in the tango, it has resemblance to the figure 8 and also hints at strange attractors and the infinity symbol. In applications of this model, the funnel stands for the system we are focusing on at a particular moment in the course of trying to understand something. Its open “ends” indicate the (at least) two-ness of relationships with things beyond our immediate focus (which might be, e.g., our self, teenagers under stress, the juvenile court system, the community, etc.). Though hidden from our view, within any system’s bounds there is a tremendous amount of dynamic activity going on.

### *Application of Premise 1*

What happens when we act *as if* we do not realize it takes at least two of something to tango, yet there’s always a tango going on? I can illustrate this with the case of my earliest self-aware recognition of this dynamic. About fifteen years ago, I was in the internship phase of a training program for the one-on-one ministerial work I do. I knew from the way she dispassionately characterized her way of “doing life,” while introducing herself to the group of interns, that the supervisor who was assigned to me was not the one I wanted to work with. I asked the program director to assign me to a different supervisor, explaining I perceived in advance we would be a mis-match. Told that all staff were fully booked and reassignment was impossible, I discussed with the supervisor my willingness to give the supervision relationship a fair try even though she was not my preferred choice. She reciprocated by saying she would do her best with me and for me. At the end of the internship, we wrote our respective, customary supervisor and supervisee evaluations. Mine focused on what I learned about myself and my way of doing that ministry, the subjects explored or discussed in our supervisory sessions, and was silent about my experience of relating with her, as if it had not been important. Her evaluation of me was also silent about our way of relating, but included a distorted reference to things I had shared with her about the transparency I experienced while working with retreatants: she wrote that I reported those experiences as being “opaque.” I brought the error to her attention, and she corrected it before flying back home. We did not together investigate its roots. What had been happening between us? Over the next weeks, I was on an inner crusade to unpack our tango.

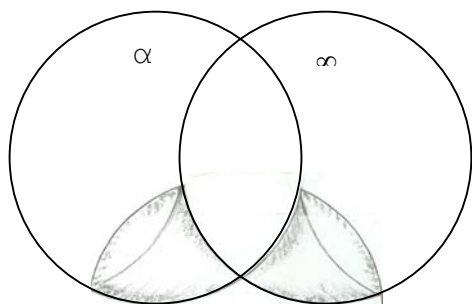
It became my first *consciously aware* encounter with the amazing reciprocity involved in a coping mechanism. I discovered that I had been “taking care of *her*” throughout the internship. I did this by not saying that I felt neither “met” nor “heard” by her, and that it had become pointless to explore anything very meaningful in our sessions. The tango lesson was this: at the time, I thought I was simply “taking care of *me*” by withholding explorations I would find meaningful to share with her only if she could live into the supervisory function of meeting me where I was. It was only when I realized that I took care of me *by* taking care of her, that I saw the reciprocal dynamic. Instead of taking responsibility to express my dissatisfaction and thereby let her take responsibility to hear and respond to it, I took care of her, and the program too in a way, by my silence. I suspect she sensed this on some level, yet like me, she was not transparent in expressing her experience. Thus, a misapplied “opaque” emerged in her evaluation writing.

We were doing a tango, but *acting as if* we each were alone on the dance floor, like only one end of the funnel in Figure 1, *as if* severed from the real interaction between us.

How many of our tangos—as an individual, an organization, a nation—are characterized by acting as if we are alone on the dance floor? From the developmental perspective, we spend a great deal of our adult lives carrying forward a perception we developed when we were younger, an atomistic feeling of being alone in a big world we have to navigate alone. It is a natural part of the developmental process to operate on this subtle, often-unnamed assumption. This first premise can support reflection and analysis on our assumptions about our interactions and dynamics within our selves and with others at any scale. Applicable to every instance and situation, this can help us discover where we operate as if we assume we are doing life's many tangos alone. While there is truth in the saying that “our perceptions are our realities,” it is also true that rarely do our perceptions take in all the realities that comprise our world. It is possible to learn how to take in more of them. As the case suggests, we understand our selves and our experiences to a greater degree when we can recognize, learn from, and consciously engage the reciprocity dynamics we're embedded in.

### **Premise 2: Whatever we don't tango with directly (but could), we put “out there.”**

Despite any subtle, deeply-seated—and transformable—existential assumptions that we navigate life within our own isolated orbit, we do not. We are not only dynamic open systems as represented by the organic funnel, but we also exist in a multitude of larger contexts with which we are always already in mutually co-creative and sustaining interactions. To represent this in the model, I add two multi-dimensional “wholes” or environments that organically give the funnel its shape. Premise 2 focuses on a particular kind of relation with our environments (and they are discussed more in later premises).



**Figure 2**

etc., and those without.<sup>8</sup> Languaged thought helps us assign meaning to complex events and to communicate that meaning to ourselves and others. Given that we inhabit such large domains,

<sup>8</sup> This premise reflects a coordination of psychology's insights into projection with biology's and other complex systems sciences; the physics' version of the “mechanisms” of projection can be found in Laszlo (2003). I believe one implication of having our feet in both domains is that we need to coordinate our assumptions about them when we are paying attention to things that may appear specific to one or the other domain. For example, in Miller's (1995) seminal work on living systems theory, he observes that despite their vast differences in size and complexity, there are [at least] eight levels of living systems: cell, organ, organism, group, organization, community, society, and supranational system. All of the systems have the same 19 critical subsystems with distinct functions to process information, matter, and energy in various combinations he identifies, and all exhibit a common set of systemic characteristics. On the other hand, Maturana & Varela (1987) point out that in addition to treating individual humans as the organismic systems they are, we must also consider our identities as “components of [our] linguistic

it's a big world we live in, and none of us can take it in all at once, or sort out meanings all at once; sometimes we just do not want to. Ironically, there are also aspects of our selves, others, and our environment that we *have* taken in and *do* know about, but we are not yet *consciously* aware of *what* we know of them, i.e, it is not languaged thought. The case example illustrated how I kept from myself the knowledge that I took care of my needs *by* taking care of (what I perceived as) my supervisor's need to avoid facing (what I experienced as) her inability to meet and hear me where I was. I did not tango with what I knew somewhere inside, but *could* have; instead, I put it "out there" somewhere.

Projection is a concept used to describe such things we do not tango with *directly*. It's a complex dynamic, especially because our languaged thought underlies so much of our ability to assign meaning to events. Things have meaning when they affect us. Things that affect us are—in systems' terms—interacting with us (and our meaning-making). All interactions involve a tango, and humans have ways of choosing whether to dance directly or indirectly. By contrast, other mammals seem to respond immediately *and* directly to environmental impacts, e.g., the fight or flight instincts. The purpose of premise 2 is to introduce that projection dynamics are part of our system dynamics and the universal tango we do. It extends projection's significance beyond the psychology field that first explained it, to include its place in a universal set of processes.

Projections can have a co-dependent aspect. It is common to refer to co-dependent coping mechanisms, such as I displayed in the case, as *dysfunctional*. They are also highly functional, because this is how we filter out what we feel we cannot yet deal with if it does not feel safe to do so. Yet that very language, "filter out what we feel we cannot yet deal with" refers to only half of the reciprocity complex. Fifteen years ago, my limited awareness of *how* I was taking care of me with my internship supervisor was also just half of the dynamic. It is essential to learn how to look for the "loose ends" if we want to peer into our black boxes. Oftentimes, projections are some of those loose ends, and they show up at many scales, including that of nations.

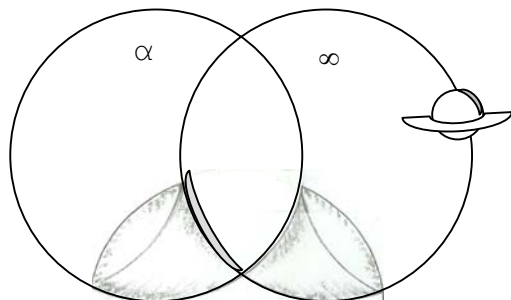
Projection "wears different clothes" depending on the context and focus. The case example helps to illustrate the logic of the process, which might help us to notice it. The basic logic is: what we do not take in, we put "out there." It is analogous to this: we keep inside our houses those things we want to preserve intact, and we place whatever we don't want to preserve, e.g. trash or garbage, outside in a garbage can or compost pile. Sometimes this is called *bracketing reality*, putting limits on what we want to deal with, and it can show up in different ways. Some of the teenagers I did research with used drugs and alcohol to bracket the reality of unmanageable stress, an *overt* way of dancing with reality. But, if the reciprocity complex of recursive feedback loops cannot complete overtly, then it will complete *covertly*. This is because there are no "loose ends" in whole system dynamics. The covert dynamic called projection is analogous to a movie projector that puts the story out onto a screen so we can see it when it feels safe enough to do so.

Another analogy for projection's logic is sunlight shining on a tree that then casts a shadow on the ground. Our *knowing* is like the sunlight, *what* we know but do not take into our conscious

---

domains" and recognize that "human social systems exist also as unities for their components in the realm of language" (198). In other words, human social systems derive from our capacity for linguistic behavior, and as individuals we have characteristics of both domains. Therefore, "any analysis of human social phenomena that does not include these considerations will be defective, for it negates the biologic roots of those phenomena" (199).





**Figure 3**

we do not tango with overtly, and its corresponding shadow is indicated behind the open ends of the funnel.

awareness and interact with has substance like the tree, and we find a place to “put it”—to project it “out there” somewhere—until we are ready or need to notice its shadow. Our human growing edges always include learning to recognize what we project about our selves somewhere else “out there.” I believe there is a correlation between the amount of projection we do and the degree to which we also perceive ourselves navigating life alone. Thus, in the model, the planet Saturn represents any place “out there” we park things

### *Implications of Premise 2*

Images and models are one thing, and our real life system dynamics are another. What happens in projection and where do things really end up? There are different ways to consider this, and a common one is that, from a Jungian perspective, the shadow ends up in our unconscious, and the disowned *emotion* of whatever we do not dance with will flavor our perceptions of other people, events, systems, or beliefs. Thus, my supervisor probably projected her resistance to naming our mutually opaque relationship by putting the opacity “onto” (the way she heard) my experience with retreatants. In a corresponding way, I projected my assumption there was no resolution to my dissatisfaction by taking care of her: I had a lot at stake in that internship and did not want to risk the consequences of finding no satisfactory resolution. When we perceive we have something at stake, emotion accompanies the perceived risk. A way of noticing projections is by attending to *all* of our emotions, which alert us to their presence, and “recognizing the emotions that accompany projections begins the process by which they can be withdrawn from others” (Van Eenwyk 1997, 101).

As dynamic systems we have a lot of self-preserving or self-optimizing mechanisms, and in the context of projection, of course, one of them is that, at a systemic level, we do not allow ourselves to consciously know what we know we feel. This seems to reinforce subtle assumptions of navigating life in our own lonely orbit, and the reciprocal feedback/feedforward loops “go underground.” In his discussion of the transference aspect of projection, May (1983, 19) defines transference as “*the distortion of encounter*” (emphasis in the original). The same is true of the overall dynamic of projection, because “participating [in relationship] always involves risk” (20) and the “norm of relationship...is grounded in the nature of man [sic] as such” (18). Risk avoidance distorts our encounters by handling our part of the tango covertly, rather than overtly.

Until we withdraw projections from “out there,” conflicts (at some scale, perceived or real, internal and/or external, covert and/or overt) usually arise because some unresolved tension (e.g., lack of safety) underlies why we projected in the first place. At those times, we are not transparent about whatever seems to be practically or emotionally at stake. What we usually have at stake is a relational concern of some kind. (In severe cases it can be our relation to our own survival.) In the case example, I was more concerned about my relation to graduating from the overall training program than I was concerned about my ways of relating with its internship supervisor. Conflicts can bubble up from within these layers of different priorities, and this has

as much significance for socio-political patterns as it does for personal ones to ferret out the layers.

In reflecting upon our experiences, can we trace the connections among our (a) experiences of emotions that arise, (b) the context in which they arise, and (c) what we have at stake, relationally? And if we reflect on an experience where we did not directly attend to those emotions at the time, what was the nature of the inhibitions we decided to live with? Did they represent a risk to some “bigger” layer of relationship? At our current stages of social-cultural development, we can find it a challenge to detach from our familiar concepts enough to recognize the pervasive roles projections play from interpersonal to local to international issues. One of several reasons it is hard is that projection is still an obscure concept for many people. This theory’s emphasis on its systemic role in human dynamics suggests the importance of learning how to notice its dynamics in a supportive way.

**Premise 3: There are limits to what we can tango with, and they diminish as we develop.**

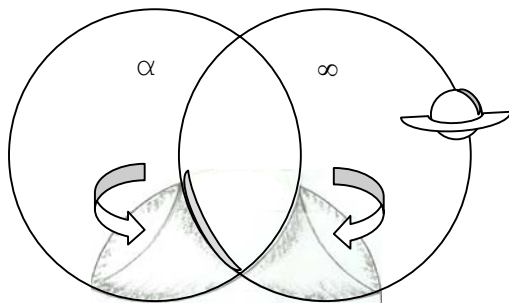
This premise is described in a variety of ways in the fields of developmental psychology, anthropology, biology, and history. In familiar talk we refer to people having “filters” that limit what they are able to perceive, react to, or process, i.e., what they are able to tango with. This is a natural developmental process of the whole human being, and these perceptions of the world change as we grow and mature. As children, we may have believed stories that a stork delivered families’ newborn babies to them, or that Santa Claus and reindeer delivered toys worldwide. These were simple, concrete things we could picture, no more outlandish than many of our storybooks, and the arrivals of babies and toys were very real. We were unable at that age to recognize the stories as family myths, which is a more abstract concept. Our “filters” prevented a tango with the idea of a family myth.

As we mature into adulthood, we develop new, usually more abstract, ways to understand how the world works. Yet, regardless of specifics, as users of language and therefore thought, our filters are constructed in a basic way. William James (1997, 26-27) put it succinctly: “The first thing the intellect does with an object is to class it along with something else [that it resembles].... The next thing the intellect does is to lay bare the causes in which the thing originates” [so there is an explanation for it]. And the next process we go through, whether consciously or not, is deciding what the thing *means* to us. This process of classifying, explaining, and deciding about meaning potentially develops us as we have more and more experiences. At any point in our individual and collective lives, we operate with some system of making-sense-of-things, which for all of us could be called a “filtered view” of the world. We can’t tango with things we can’t perceive because we haven’t developed the capacity yet. What we do not recognize, we do not tango with—like the concept of myth for a child. Instead, we believe storks deliver new babies.

The easiest way I know to describe *why* there are limits to what we can perceive is with arithmetic, in which adding numbers is the starting point. We know we cannot do multiplication unless we first can add. We cannot do division if we cannot multiply and subtract. Each task requires ability to perform the less complex tasks that build up to it. If we never learn any arithmetic beyond adding and subtracting, we will not have any way to conceive what multiplication and division are, what they are good for, or what they might *mean* to us. For example, if I am a street vendor selling individual fruits of several kinds, and quite a few remain unsold toward the end of the afternoon, the difference between knowing how to add and knowing

how to multiply could have significant meaning for my livelihood. If all I know to do is add, I will keep selling them individually to whoever wants one or some, and leftovers may rot unsold, earning me no money. If I know how to multiply, I might change strategies and bundle the remainder into bags of various quantities of fruit. I could calculate the selling price of each bag, and in the remaining time need only a few customers to sell the remaining inventory at full price while it is fresh. I may even sell out earlier this way and get to go home sooner. Multiplication would have *meaning* for me.<sup>9</sup>

Relating premise 3 to the previous one on projection, there is a structural-limit source of projection. Similar to—but different from—premise 2, whatever meaning an individual or social system cannot process due to developmental limits is projected “out there” onto some other person, event, system, or belief. The teen substance abuse issue—and most other issues—illustrates this in various ways. An obvious one is our societal habit of delegating away to agencies “out there” the responsibility to deal with the “presenting symptoms” of issues. We do this even though we individually and collectively co-create and sustain such issues by our personal and institutional behaviors against the backdrop of the cultures we sustain. At certain stages of socio-cultural development, an example is populations’ projections of heroic or father images on leaders they expect to defend and protect them from outside threats, and enemy images on those who are feared. The structural-limits source of projection is particularly noticeable when groups that act the same way toward others are variously called “freedom fighters” or “insurgents,” depending on who is talking about them. Limits on what we can tango with in a complex world play roles in the issues and conflicts.



**Figure 4**

As signs for modeling the dynamic of doing life’s tangos, and to signify limits to how much we can dance with at a particular time, in Figure 4 curved arrows that originate in the “wholes” of our environments indicate the smaller amounts we actually dance with in the funnel of life experience. Many limits diminish as we develop capacity for more complex interactions (like fancier dance steps), and if those limits decrease, we can perform a variety of fancier dance steps with more dance partners. We learn to dance *while* we dance, an idea developed more fully in premise 5.

<sup>9</sup> The math illustration is more than just an analogy. Arithmetic and mathematical operations do structure the increases in complexity of the tango-dancing we can do (Commons, Trudeau, Stein, Richards & Krause, 1998). The complexity of the meaning-making tasks we can perform, like dance steps, sets the furthest limit of what we can tango with at a particular time. This is because we do our tango with only the dance steps we *can* perform; anything more complex, like a myth for a child, is not perceptible because it requires more complex steps to “see” it at all.

## Interim Summary – The Tango As Universal Learning Process

This meta pattern can be characterized as the universal learning process operating at every scale imaginable.<sup>10</sup> The premises of the theory describe the main dynamics going on in the “black box.” From a certain vantage point we may begin to see a familiar, basic simplicity in the

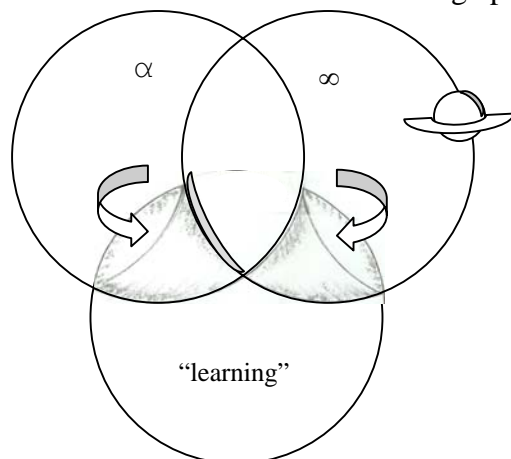


Figure 5

whole process. It is about the ways we learn, the *process* of learning. This kind of processual learning goes on with physically manifest systems such as human beings and the planetary environment, and with less tangible systems of projection and our institutional and cultural holding environments. We are thoroughly immersed in this dialectically-evolving process that constructs and deconstructs at the same time. It takes myriad forms at its different scales, for good or ill, but the same patterned process pervades our existence<sup>11</sup> and always constructs some form of learning. Learning always involves some structural change in some aspect of a system or person, something new. Figure 5 represents this as a new sphere emerging in the process.

### Premise 4: There are common dynamic processes involved in dancing the tango.

This premise focuses on *how* this dynamic learning process looks at a micro level, as compared to the relatively macro treatments thus far. The transformative learning field has provided essential insights into what humans do in the learning process, but does not seem to peer into the black box of *how* the underlying process looks and works. The process of determining what to dance with in life events (or what to park on Saturn) is the same *kind* of process we experience in our decision-making. Some decisions are much more complex than others, yet the *patterned process* is the same. This premise looks more closely at that pattern. If we perceive a decision lies between two options (e.g., yes/no, go/stay) there could be fewer factors to consider to come to the decision. If we perceive there are more than two options, there is a more complex bundle of variables to juggle. If a decision has several viable options and each option depends on contingencies, there are yet more layers of complexity to process in order to arrive at a decision (or a set of related decisions). A pause for reflection on a past decision we made between more than two options likely reveals a pattern of many back-and-forth interior

<sup>10</sup> Here, *learning* means more than knowledge-acquisition in a formal (and formerly traditional) education sense, and in another way perhaps literally means the universe’s recursive process of all-knowledge-acquisition-and-storage/retrieval/creation (see Laszlo 2003).

<sup>11</sup> This dialectical process is described across numerous fields, e.g.: Taylor’s (1989, as cited in Mezirow 1991) model of transformative learning; per Riffert (2002), Piaget’s genetic epistemology and Whitehead’s process philosophy; Commons et al’s various work in hierarchical complexity, Maturana & Varela’s (1998) biology; Thelen & Smith’s (1994) systems dynamics of the development of cognition and action, and Laszlo’s (2003, 74) physics. The inclusion of projection is essential, in my view, to understand the structure of human dynamics without systemic “loose ends” otherwise left out of the process’s equation.

movements (oscillations) to consider all the probable or possible costs, benefits, and consequences of any one choice. People construct many more options than, for example, other mammals, by virtue of having language. The more options we perceive, the more processing we have to do before we get to the end. Our common sense tells us that we can't know what we'll decide until we have decided it. A *dynamic process* is required.

This deliberative process illustrates in familiar terms the kind of process used by complex systems to determine what to dance with. The process is comprised of oscillations that move between at least two poles.<sup>12</sup> These could be characterized as possible choices. The oscillations may feel chaotic (when they are noticed, because very often they are not, i.e., in projections or where reflexive capacities are not developed). This is because the complexity of the process lies—in a scenario of conscious decision-making, for example—in perceiving, comparing and processing the implications of the various poles' *meanings* to us. In the process of assessing meanings, we may end up negating and transforming past beliefs and assumptions (Mezirow 1991). Such assessments are sub-processes nested within the overall process. Internal system dynamics like these can invoke the metaphor of computers: inputs and outputs processed through back-and-forth recursions at lightening speeds, faster for less complex problems, a bit slower for more complicated ones.

The process creates something new: a selection of new meaning, new insight, a decision (which might be a decision to not make a decision), discarding a former assumption and constructing a new one, etc. The process can co-create something else that is new: the capacity to coordinate more variables in a more complex way (changing the limits of what we can dance with, Premise 3).<sup>13</sup> By its conclusion, the process results in excluding some potentials in favor of others.

As a fundamental characteristic of dynamic systems, the oscillating process transpires at all scales, thus it has a fractal nature. Fractals are self-similar patterns that repeat at different scales, some from tiny to huge in size, and/or from extremely short to very long time-spans; the kind of pattern depends on where functions are similar (Kelso 1995). The vastly different scales can make them tricky to notice until we have practice at looking underneath the clothes that dress events and processes. To understand and apply this process theory (which is also fractal), systems' dynamics in general, and how these processes relate to functions at personal, social, economic, and political scales, it is very useful to learn to see *fractal patterns*. This can take a lot of the mystery out of things that seem very complicated, and contribute appropriate assumptions, order, and consistency to our analyses, evaluations, and reflections on experience.

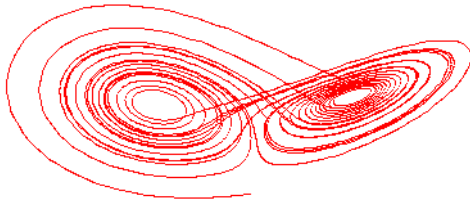
The most accessible learning, perhaps, comes from our own laboratories of reflexive attention to the processes we use already, for example, in identifying how we feel about a disturbing interaction, figuring out (preferably with others) what is happening in a confusing situation, and

---

<sup>12</sup> These poles form and operate in similar fashion, although called by different names, such as: attractors in chaos/complexity terms (Kelso 1995; Van Eenwyk 1997); archetypes in terms of the psyche's dynamics (Jung 1964; Van Eenwyk 1997); behavioral tensions (Cory 2004); and wave function ensembles related to a given species (Laszlo 2003). Based on the observations I have made of my own processing, and consistent with Commons & Richards (2002), as we develop our capacity for more complex tasks, the *kinds* of attractors we perceive (Kelso 1995) change radically both in nature and number, and they can include complex nests of additional poles to process.

<sup>13</sup> These can develop a high degree of complexity, e.g., dialectical reasoning described by Basseches (in this issue)

decision-making. Cory (2004) emphasizes that the universal tensions between self-interested and empathetic acts are embedded in our constitution, and are “tugging and pulling against each other” (30) from the “smallest interactions, the vignettes, of everyday personal life” (26) to the scale of our social, political, and economic systems. These recurring oscillating processes “repeat themselves through the establishment of tensions of opposites, their resolution, and the subsequent appearance of new tensions between the resolution and new possibilities” (Van Eenwyk 1997, 16). They are the “basic moves” of the tango: it doesn’t exist without them.



**Figure 6**

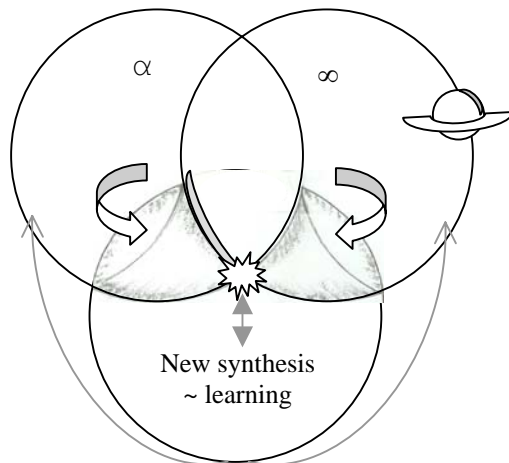
Premise 4’s dynamics are the primary window for us to peer into *how* the “black boxes” of humans and their societies look inside as they dance. The tango exists in a multitude of interactions with other individuals, other cultures, other social structures, and their own selves. In their dances they conduct ongoing, often complexly nested, patterned, oscillation processes, acting like the “engine” of learning, change, development, and yes, deaths. For a look at a basic oscillation (from atmospheric dynamics) this link includes an animation of Figure 6’s image of oscillation dynamics as the Lorenz attractor<sup>14</sup> and different views into the nested oscillations comprising it. <http://www.levitated.net/daily/levLorenzAttractor.html>

### **Premise 5: Something new emerges from each and every tango.**

This premise points to the dialectical nature of the meta pattern, that the dynamics of the tango’s processes create something new by virtue of happening at all. This is the *nature* of all life’s tangos, because they are creative. The entire process reflects the synergy of “(1) the environments acting on the system, (2) the interacting elements involved, and (3) what emerges from the interactions” (Kelso 1995, 17-18). In the process model:

- (1) the environments acting on the system [or meta system]
  - a. are represented by the two spheres on either side
  - b. the system that the environments “act on” (trigger, influence, constrain, liberate, etc.) is represented by the model’s funnel
- (2) the interacting elements involved
  - a. are indicated by the curved arrows heading into the funnel’s openings
  - b. include the elements from the environment and the system’s (funnel) elements
  - c. and the “intersection” where the real dance takes place is signified by the starburst added to the model in Figure 7 below
- (3) what emerges from the interactions
  - a. is something new
  - b. and it takes a variety of “forms” depending on what we’re studying, its nature, time span we’re considering, etc.

<sup>14</sup> This image is copied from a document at [http://encyclopedia.lockergnome.com/s/b/Lorenz\\_attractor](http://encyclopedia.lockergnome.com/s/b/Lorenz_attractor) licensed under the GNU Free Documentation License (GFDL), which means that you can copy and modify it as long as its entire work (including additions) remains under this license. <http://www.gnu.org/copyleft/fdl.html>



**Figure 7**

My experience with the internship supervisor suggests some of the sorts of new things that may develop in a context like that. While the most significant new structural change in me was the learning that emerged from my crusade to understand what had been happening with us, it was throughout all our interactions that I built up, tore down, and built up something new in a recursive fashion. From hope to doubt, from invested trying to feeling unheard, from exploration to withdrawal, from resisting failure in relating to accepting it, from projection of self care to the explicit self care of confronting her error. It took interactions that created all of those new movements to create enough motivation in me at a systemic level to “bifurcate” into the new action of the crusade that, itself, was another series of diverse dynamics that restructured my understandings.

The new “things” that emerge from our tangos can include new systems. For example, if my experience with the supervisor had been very different, we might have created an enduring friendship characterized by mutual transparency (a new social system, as compared to the short-term, institutionally-created supervisor-supervisee system). The way we were structurally coupled did not result in dynamics for that possibility to emerge.

Teenagers developed a thorough description of how they and their substance abuse were structurally coupled with the cultures and institutions of their families, peers, schools, and communities (Ross, 2000). They were bound in such a way that the options they could access and make decisions about were severely limited. Their recursive learning from interaction upon interaction with those systems, in many cases, took the form of re-choosing their decisions to stick with their existing coping mechanisms for dealing with that stressful tango.

These examples hint at the significance of *structural coupling* (Maturana & Varela 1987) for change and development. Called by different terms, the dual-dynamic is inherent to complex systems, showing up wherever systemic processes are described.<sup>15</sup> The rather thorough treatments it receives in such works make for highly recommended reading. Often referred to as the diachronic and synchronic dynamics, which are always discussed together, it is *the structural dynamic of evolving development*. This concept is essential for understanding what’s in the black box. This dynamic tango will challenge many of us to think in more fluid, systemic-process terms to understand its role in change, development, and overall evolution. In basic terms, it refers to the connective relationship between interacting systems and the new structures that

The significance of the tango’s dynamic at all scales of time and space is immense: creation is learning how to happen all the time everywhere. From the perspectives of process, learning, and conscious awareness, all events *matter*, no matter how small. Helping us to *look for, notice, and use* this insight in new ways is a primary motivation for sharing this theory, and earlier points attempted to illustrate the implications at personal, interpersonal, and other social scales.

#### *Application of Premise 5*

<sup>15</sup> e.g., Bateson, 2000; Kelso 1997; Laszlo 2003; Riffert 2002; Thelen & Smith 1994; Van Eenwyk 1997; Whitehead 1960.

emerge *in each* by virtue of the interaction. It accounts for *how* new “things” emerge. The concept of *structural coupling* supports attention to both our selves and our partners in every tango at every scale: we trigger changes in each other with every interaction and something new is created, for good or ill. It may be more projections parked on Saturn, it may be new capacities for more complex diplomacy and policy- or decision-making, it may be new social systems that are more generative or more destructive for people within them. This concept can reinforce the importance to place on every tango and what it creates.

## The Universal Scale of The Tango

For this introduction to be complete, it needs to refer at least minimally to this meta pattern’s literally universal depth and scale, developed in somewhat lay-accessible ways by Laszlo (2003), Wolff & Haselhurst (2005), and Bohm (1999). Applied at that depth and scale to this outline’s model, the environmental sphere on one side would signify what Laszlo calls the virtual domain of the universe, and the other environmental sphere would signify what he calls the manifest domain. The manifest is the domain of the entire physical universe, while the virtual domain is not as easy to consider because its virtual contents are described in physics terms<sup>16</sup> that do not resonate very much with those of us outside the math and physics fields. An important caveat: the model is visually misleading because these two domains are not really separated in a such a bounded way, although the model represents their interactivity by the spheres’ overlap. By contrast, the latest physics would have us understand their thorough “entanglement” rather than any kind of compartmentalization (Laszlo 2003; Wolff & Haselhurst 2005). This structural coupling of the two domains is the universal tango at the highest known scale of dynamics and analysis.

Laszlo lays out the virtual domain’s intimate role everything, which includes individual and social change and development. This article shines only a little light on that role through a last illustration from its case, which briefly recapitulates the overall tango. Where did my sudden insight come from, after my internship and subsequent crusade to understand what was happening? What conditions enabled my crusade to begin? During the internship, I was not raising the question, thus I was not receptive to learning where I had hidden my own secret. I was structurally coupled in a very unsatisfying system that I didn’t see a way out of if I wanted to complete the program. Once it was over, I was “free” again and wanted to learn more about that tango. My searching oscillations processed all the information that seemed available to me, and accumulated many dead ends of possible explanations...then, Wham! There the insight was, in an instant, and I knew it was true, and it resulted in a new structure of understanding in me. I had to get to the point of looking for what I had parked on Saturn to understand the missing part of the reciprocal dynamic: taking care of me *by* taking care of my supervisor. One of the virtual domain’s functions is storing what we park on Saturn (in the form of their wave functions, like attractors). Once I was finally open to reclaiming it, I could “attract it back home.” This is because, as Laszlo describes, each individual act, thought, etc., generates its own wave function (an expression of its attractor dynamics) and these attractors’ “records” reside in the universal and cumulative “memory” which is the virtual domain.

---

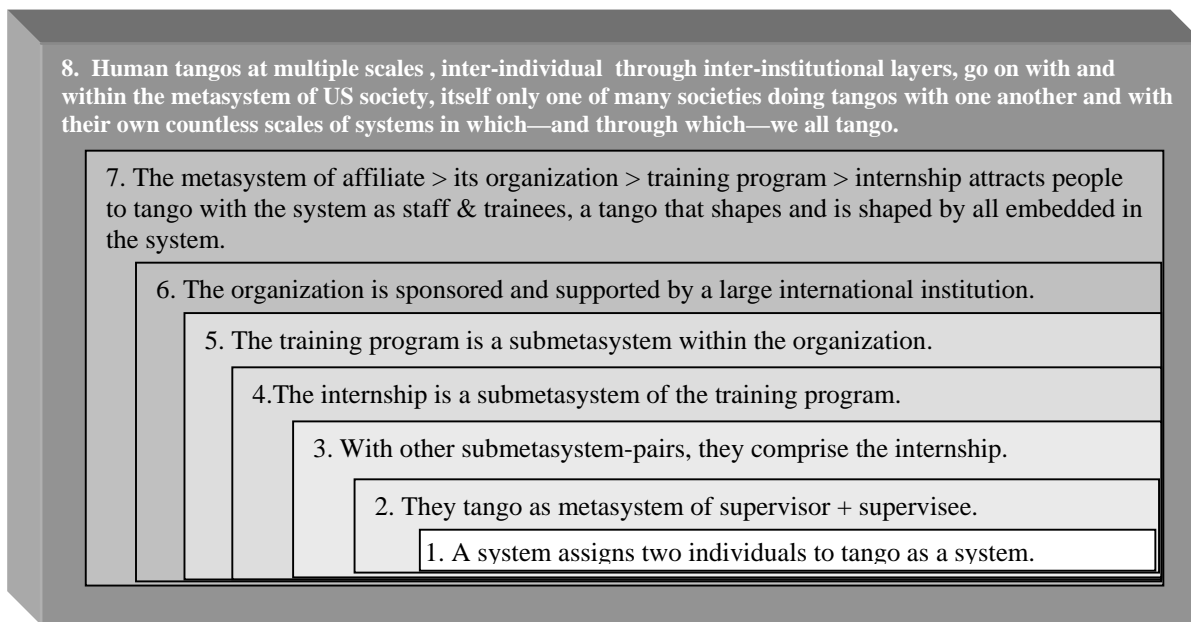
<sup>16</sup> e.g., wave function, wave interference pattern, scalar field, and others



As Laszlo suggests, there is much more we can understand about change and development in the manifest domain when we understand its tango with the virtual. I believe these contemporary physicists' and philosophers' work has major implications for how we understand many kinds of connections, how we construct our beliefs, how we understand more about the "black box" of the tango, and for practical applications of this integral process theory. Wrapping up this discussion at the universal scale, Laszlo (2003) explains these domains' tango in the same terms as the systems discussed earlier, in "a two-way process" (74): "the two domains evolve in reciprocal interaction" (106-107) establishing the template for needing two to tango and creating something new by virtue of doing the dance in the first place.

## Scaling The Model's Environmental Spheres to Applications

The fractal nature of this process theory derives from the fractal scales of the tango it describes. Thus, the environmental spheres that dance with a system, metasystem, or group of metasystems will be different depending on the scale of attention, the context giving rise to a particular set of inquiries, and users' purpose(s) for exploring past, current, and/or potential dynamics.<sup>17</sup> Figure 8 illustrates the nesting of systemic tangos. It shows, using the case example, that tangos don't exist in isolated orbits any more than we do. They *are* the activity throughout and among systems related at different scales.

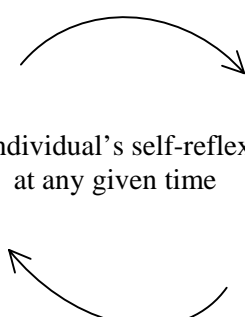


**Figure 8:** A partial model of the metasystemic setting of a supervisor-supervisee tango.

<sup>17</sup> Purposes may be as varied as the users that have them, and can include, e.g., self-reflexion, 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> person action inquiry and analysis, design and design-evaluation of systemic intervention processes, identifying recursive adjustments needed in intervention strategies, evaluation of intervention processes' impacts, comparisons and assessments of other frameworks, etc..

Table 1 is a way to convey an example of elements the environmental spheres may include (described *generically* for example’s sake) when the theory’s premises are scaled to focus on an individual’s self-reflexion process (focal systems at any scale are signified by the model’s funnel). But the contents of the table need to be situated in the meta process of dynamic recursions that create something new, which enters into the recursive processes already underway (tangos): nothing here is static. Systemic environments that have done and are currently doing tangos ( $\alpha$ )<sup>18</sup> with the system(s) getting our focus, are recursively placed in relationship with the environmental elements ( $\infty$ ) the system perceives as available to tango with.

**Table 1:** Example of Environmental Elements Scaled to a Specific Focus

<b>Environmental Sphere <math>\alpha</math> Have done or currently doing</b>	<b>With Focus On System Of:</b>	<b>Environmental Sphere <math>\beta</math> Perceived as available</b>
<p><i>Pre-existing, developing, or to-be-developed self-awareness of:</i></p> <ul style="list-style-type: none"> <li>~ personal &amp; social history, including nuclear family’s and larger culture’s shaping influences, past &amp; currently held belief systems &amp; coping mechanisms</li> <li>~ felt constraints of behaviors and projections embedded in culture of relevant adjacent systems,</li> <li>~ current triggers giving rise to reflexion</li> <li>~ operating assumptions in context of triggers</li> <li>~ etc.</li> </ul>	 <p>An individual’s self-reflexion at any given time</p>	<p>~ <i>Perceptions and assumptions (i.e., the stories I tell my self) of what exists and what is at stake beneath current triggers in the layers of systems in my environment, and these in relation to:</i></p> <ul style="list-style-type: none"> <li>~ the meanings assigned to triggers</li> <li>~ perceived environmental constraints on responses</li> <li>~ perceptions of current capacities to tango</li> <li>~ existing or potential support systems for new tangos</li> <li>~ etc.</li> </ul>

## Summarizing The Process

This outline of a process theory of human dynamics distills a universal pattern down to five premises about its integrated processes to help us understand what goes on in the “black boxes” of individual and social processes at all scales. An important caveat is in order, too, with respect to the model: it is a *static* representation, offered via a limited medium, of *integrated not separate* processes taking place in *multi-dimensional environments over time*, which further *develop in time* by virtue of their interactive processes. Thus, the environmental spheres, the something new/learning sphere, the arrows, the funnel, the starburst, and Saturn and its shadow, are merely icons for the dynamic realities they signify.

As a whole, the aim of this presentation is to make the following interdependent ideas accessible to a wide audience.

<sup>18</sup> i.e., have been and currently are *structurally coupled*

- Premise 1, *It takes (at least) two (of something) to tango*, reminds us we cannot regard any individual or system of any kind as isolated in its own orbit, but rather seek out where the reciprocity dynamics are happening, and expect to find layers of them, like ripple effect interactions.
- Premise 2, *Whatever we don't tango with directly (but could), we put "out there,"* has significant implications. It reminds us we need to learn how to recognize projections, to keep an eye out for those that get parked on Saturn, to be alert to look for and reclaim them, and consider the conditions and potentials for projection dynamics in all our human undertakings. It highlights projection because it seems little-known or recognized outside the field of psychology, even though it plays phenomenal roles wherever human beings are concerned. If this premise gained traction, supportive human development methods that help people and societies recognize and reclaim their projections, along with the creation of healthier holding environments so fewer projections develop, might become higher on social change agendas.
- Premise 3, *There are limits to what we can tango with, and they diminish as we develop*, calls our attention to learning about and applying some basic understandings of structural limits germane to human and social functioning. The adult developmental psychology and transformative learning fields, which are as instrumental in this premise as complexity sciences, demonstrate their own limits in various ways, yet they are some we need to keep referring to, developing further, and integrating with other fields of research and practice.
- Premise 4, *There are common dynamic processes involved in dancing the tango*, encourages us to learn how to adjust our zoom lenses appropriately to look for and notice the dynamics going on all the time. It encourages us to decenter our attention enough to notice fractal patterns that can help us transfer our learning about how things work in black boxes at many human scales. It gives us some ways to start noticing our own "inner" dynamics, which can help us discover our own projections, assumptions, etc. This premise can help us make sense of how these dynamics affect what we want to learn, understand, or support, because the processes *are* what comprises whatever we consider our focus. Nothing is standing still inside the black boxes.
- Premise 5, *Something new emerges from each and every tango*, emphasizes the massive co-creative learning laboratories in which, with which, and as which we exist. It reminds us we need to find ways to identify and consider the complex range of environments interacting and/or coupled with anything we study. It challenges us to take a dynamic, processually-integrated approach to all phenomena, because all phenomena are dynamic processes in an ongoing pattern of co-creative evolution.

## Conclusion

If Kelso is right, that everybody knows the world is made up of processes from which patterns emerge, but we seldom give pause to what this means, I hope this article is an opportunity to give pause. I have shared what this means to me, and what I believe it could mean for others. I also believe this theory fills a void because it transcends boundaries of specific fields of study and practice, and offers a synthesis of some of their essential knowledge to general audiences. It illuminates the process dynamics that co-construct the dialectical meta pattern of development itself, and integrates "the stages of" development with "the process of" development. It places projections in the forefront of attention as some of our key individual and collective tango partners and integrates them with system dynamics. As a transdisciplinary distillation, the theory

puts a tool of developmental process analysis into the hands of people who want to understand and use what goes on in the “black box” of human dynamics.

As an experiment in distilling a lot of information that I, and others, can refer to and further develop, I have made my best effort to keep this introduction as accessible and accurate as possible. I do not know if I struck a useful balance, and I welcome suggestions for improving the theory’s structure and integrity, its alignment with lived experience and the bodies of knowledge that inform it, and its usefulness. I am also eager to both test the sufficiency and deepen the explication of the premises, and I hope others will participate in that discourse.

At the level of application, I hope it fosters new understandings to support holistic inquiry into, analysis of, and action on a wide array of complex individual and socio-political issues we need to address across the planet. And I especially hope it contributes to efforts to explore, discuss, notice, articulate, and integrate the significance of interrelated dynamic patterns doing their tangos all around us and within us. These are my hopes, and although the uni-directional language of this writing has its limitation when the subject is *process* dynamics, we can engage in the tango of discourse at an experiential learning level and watch our new tangos unfold.

*Language was never invented by anyone only to take in an outside world. Therefore, it cannot be used as a tool to reveal that world. Rather, it is by languaging that the act of knowing, in the behavioral coordination which is language, brings forth a world. ... We find ourselves in this co-ontogenic coupling, not as a preexisting reference nor in reference to an origin, but as an ongoing transformation in the becoming of the linguistic world that we build with other human beings.*

~ Maturana & Varela (1987, 234-235)

## References

- Bateson, G. (2000). *Steps to an ecology of mind*. Chicago: University of Chicago Press. (Originally published 1972).
- Bohm, D. (1999). *Wholeness and the implicate order*. London and New York: Routledge. (Originally published 1980).
- Brown, D. E. (1991). *Human universals*. Boston, MA: McGraw Hill.
- Commons, M. L., & Richards, F. A. (2002). Organizing components into combinations: How stage transition works. *Journal of Adult Development*, 9(3), 159-177.
- Commons, M. L., Trudeau, E. J., Stein, S. A., Richards, F. A., & Krause, S. R. (1998). The existence of developmental stages as shown by the hierarchical complexity of tasks. *Developmental Review*, 8(3), 237-278.
- Cory, J., Gerald A. (2004). *The consilient brain: The bioneurological basis of economics, society, and politics*. New York, NY: Kluwer Academic/Plenum Publishers.
- Gouldner, A. W. (1977). The norm of reciprocity: A preliminary statement. In S. W. Schmidt, L. Guasti, C. H. Lande & J. C. Scott (Eds.), *Friends, followers, and factions: A reader in political clientelism* (pp. 28-43). Berkeley, CA: University of California Press.
- James, W. (1997). *The varieties of religious experience: A study in human nature*. New York: Simon & Schuster.
- Jung, C. G. (1964). *Man and his symbols*. New York: Bantam Doubleday Dell Publishing Group
- Kelso, J.A.S. (1995). *Dynamic patterns: The self-organization of brain and behavior*. Cambridge, MA: The MIT Press.

- Laszlo, (2003). *The connectivity hypothesis: Foundations of an integral science of quantum, cosmos, life, and consciousness*. Albany, NY: State University of New York Press.
- Maturana, H. R. & Varela, F. J. (1998). *The tree of knowledge: The biological roots of human understanding*. Boston, MA: Shambhala.
- May, R. (1983) *The discovery of being*. New York: W.W. Norton & Co.
- Mezirow, J. (1991). *Transformative dimensions of adult learning*. San Francisco: Jossey-Bass
- Miller, J. G. (1995). *Living Systems*. Niwot, CO: University Press of Colorado. (Originally published 1978, McGraw-Hill).
- Riffert, F. G. (2002). On Non-Substantialism in Psychology—Convergences Between Whitehead’s Process Philosophy and Piaget’s Genetic Structuralism. In *International Journal for Field-Being*, Vol. 2(1) Article No. 2. Retrieved November 26, 2003, from <http://www.iifb.org/ijfb/FGRiffert-3-htm>
- Rosenberg, S. W. (1988). *Reason, ideology and politics*. Princeton, NJ: Princeton University Press.
- Rosenberg, S. W. (2002). *The not so common sense: Differences in how people judge social and political life*. New Haven, CT: Yale University Press.
- Ross, S. (2000). *The problem behind the problem of youth substance abuse: What can we do?* Wilmington, OH: Adolescent Substance Abuse Treatment Planning and Development Project.
- Thelen, E. & Smith, L. B. (1994). *A dynamic systems approach to the development of cognition and action*. Cambridge, MA: MIT Press.
- Van Eenwyk, J. R. (1997). *Archetypes & strange attractors*. Toronto: Inner City Books.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. (M. Cole, V. John-Steiner, S. Scribner, E. Souberman, Eds.). Cambridge, MA: Harvard University Press.
- Whitehead, A. N. (1960). *Process and reality: An essay in cosmology*. New York: Harper & Brothers. (Originally published 1929, Macmillan)
- Wolff, M. & Haselhurst, G. (2005). *The wave structure of matter*. Retrieved April 8, 2005 from <http://www.spaceandmotion.com/Wolff-Haselhurst-Physics-Philosophy-Letters.htm>

*Sara Ross, Ph.D. (Cand.) founder and president of ARINA, Inc., has been an independent action researcher and scholar as well as spiritual director in one-on-one ministry. Her doctorate will be in political development. She is currently working on her dissertation research, which tests hypotheses drawn from the theory described in this article.*

3109 State Route 222  
Bethel, OH 45106-8225  
USA

Email: [sara.ross@global-arina.org](mailto:sara.ross@global-arina.org)