



FAR OUT AND THE WAY BACK: FUTURE TRENDS, COMPLEXITY AND STRATEGY

*KEYNOTE ADDRESS DELIVERED JOINTLY WITH MARY O'HARA-DEVEREAUX
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Mary has shown us a future that is daunting. How can you thrive in the midst of such radical and unpredictable patterns? How can you help your clients thrive? When you can't predict and control, you have to anticipate and adapt, and to anticipate and adapt you must be able to see and influence patterns as they emerge in the human systems that surround you.

What is a human system? A human system is the coherent space that emerges whenever people think or work or play together.

The first time I was aware of a human system I was four years old, and our little country church in White Deer, Texas had burned down. I wondered all week what they meant when my parents kept talking about "going to church." Even I knew that the church was gone. On Sunday morning, we arrived at the high school auditorium to sing hymns, have communion, and listen to a sermon. At that point I realized that the church wasn't a place, or even a group of people. It was a pattern of common purpose, individual participation, relationship, and activity that emerged over time. I didn't have words for it, but from that time on I watched as patterns emerged from human interaction. I practiced influencing the patterns as they emerged. I, like many of you, built an unconscious competence that helped individuals grow and groups come together. Today I want to share with you some things I've learned along the way as theory has emerged to reflect that practice.

It may seem ironic, but my research indicates that simple, iterative approaches are the best response to complex and unpredictable problems. If you have a complex problem, the last thing you need is more complexity piled on top pretending to be a solution! One powerful tool we use to see and influence human systems involves three simple questions:

What? So what? Now what?

What is going on? So what difference does it make? Now what am I going to do?

These three questions move applications of complexity science and chaos theory out of the world of the merely interesting and into a world of human systems dynamics and action. They give you specific ways to focus as you engage with a turbulent world in the badlands.

You and your clients are caught in a nonlinear spiral of cause and effect where each action has the potential to transform the world or to dissipate without effect. Each time you repeat the cycle of the three questions (What? So what? Now what?) you build your adaptive capacity. You learn about the current situation, understand what it means, and plan for next actions. Those three questions can even guide us through our conversation today. Mary has provided a stark picture of **what** your clients and you will face in the decades to come. My job is to help you explore the **So what?** and **Now what?** What does such a future mean to you and what can you do to thrive?

I'll begin with a brief history of human systems dynamics, HSD. Then I'll share with you three concepts that are fundamental to working in the midst of unpredictability—self-organizing systems, landscape of dynamical patterns, and conditions that shape the speed and outcomes of self-organizing processes. As I close, I give you a quick tour of some concepts, tools, and images that can help you see and influence patterns in human systems so you and your clients adapt more quickly and effectively. So what? Now what? To help you thrive in **what** Mary has shown us as a likely future.

Most of my life I avoided management and organization development. Its theories and language didn't reflect the world as I knew it. It wasn't until I entered the badlands that Mary describes so well, that I found a theory that fit my practice with human systems. I was an entrepreneur. My company used a predictable, engineering approach to deliver reliable products and services until . . . in 1988 our clients' worlds went out of control, so ours did, too. All at once, but for various reasons every one of our clients left the world of the well-behaved and moved into the unpredictable. As my business partner and I dealt with that change, we rejected standard management and OD theory because they didn't match our experience of the real world. I gave up and went on vacation where I read James Gleick's *Chaos: Making a New Science*. I picked it up as a nice escape and found in it the first theory that matched my practice—A way of thinking and talking about the unpredictable but familiar patterns that I'd seen in human systems. As Gleick described emerging science and mathematics about weather, ecology, laser technology, and thermodynamics, I recognized what I saw in human systems—patterns without predictability and anticipation without control.

Since that time, I've been delving into nonlinear science and mathematics. I've come to call this new field—at the intersection of complexity and social sciences—Human Systems Dynamics. I've founded the HSD Institute to facilitate the development of theory and practice in the field. Most important, I've found a network of talented and curious colleagues, much like you, who share this journey of adaptation and discovery with me. Today I will share with you some of the concepts, tools, and techniques we use to navigate, and help our clients navigate, in the badlands of unpredictability and instability. We work with a large number of tools and methods, and the network is generating more all the time. Today I'll talk about the ones we've found most useful to see and influence patterns in individuals, teams, organizations, and communities.

The first lesson I learned from these new nonlinear sciences was how such a thing as a *human system* could come to be. Such transcendent and coherent structures are said to self-organize. What does that mean? The definition I like best comes from the field of complex adaptive systems. In a complex adaptive system, a collection of agents are free to act in unpredictable ways, and their interactions form system-wide patterns over time. Agents, interaction, emergent patterns—sounds like what I experienced as a human system! Agents can be anything—memes interact and ideas emerge, members interact and a team emerges, firms interact and an industry emerges. All of these can be seen as self-organizing, complex adaptive systems. But, the creation of the pattern isn't the end. After a pattern begins to form, it influences the behavior of its participating agents, so, over time, the pattern becomes self-reinforcing. You see this with organizational culture. It emerges not from fiat from above but from an infinite number of interactions among staff, management, clients, and vendors. Once the pattern emerges, players have to follow the "rules." Sometimes the rules become so strong that we think they're real. We think we can predict and

control, but as the badlands emerge, we're going to be dramatically reminded that human systems are transient and fluid when we least expect it.

I hope your mind is racing with “so what” does this mean to your clients and “now what” can you do to be more effective in such self-organizing systems. We're tracking many possibilities at the Institute: A special interest group is working with peacemakers to explore how peace and conflict might be transformed when we think of them as self-organizing patterns in a complex adaptive system. We're working with a client to establish regional integration of services to help children reach for the future. Thinking of education reform as self-organizing, we're working with schools to make change sustainable. We're exploring ways to evaluate change in human systems to build the capacity for systemic thinking. This is only the beginning of exciting opportunities when we think of human systems as self-organizing and emergent.

This way of thinking about the world can teach many lessons. It tells you, for example, that you can diagnose problems across the whole human system, but you have to intervene at the level of the individual agent. You can see the emergent patterns such as low quality or competitiveness or disrespect, but you can't change those patterns by talking about them or legislating them away. You have to influence the day-to-day behaviors of the individual agents, or the old patterns will persist.

This image also puts the consultant in the middle of the fray. He or she—we—are just more agents in the mix. We are influenced as we influence, and we can reinforce old patterns more easily than we can transform them.

There are many other lessons that emerge when you think of human systems as resulting from self-organizing processes:

- Answers are useful only in a particular context and for a short period of time. Questions, on the other hand are useful because they can be carried across time and place.
- Adaptation involves a process of seeing and influencing patterns as they emerge.
- Change is not a one-way street of development toward a pre-determined endpoint. It is an iterative process that moves in unpredictable paths.

The concepts of self-organizing and core questions can help you see an emerging pattern—this is critical especially in times of rapid change—but seeing is not an end in itself. Sight should lead to action, and seeing complex patterns can lead to simple, yet effective action to influence emerging dynamics. At the Institute we are now exploring many tools and techniques—both traditional and innovative—that can help us see and influence patterns as they emerge from chaos. The Landscape Diagram is one tool that we use to help us see and respond to patterns of human systems in a particular context.

This diagram, first developed by Ralph Stacey, posits that two factors shape the dynamics of patterns as they emerge in human systems. The one axis focuses on certainty. This is about the predictability of the world “out there.” How certain are you that if you do A, B will follow? A situation can be close to certainty or far from. When multiple people are involved in the process, they may each be certain, but of different outcomes, which brings us to the second parameter in the landscape. The other axis focuses of the people who are making decisions. Among those engaged in decision making, what is the level of agreement? The group may be close to or far from agreement. Within this space described by levels of agreement and certainty, three distinct dynamics emerge.

When the system is close to certainty and close to agreement, the group behaves in an organized way. Their patterns don't change very much. The water processing industry was in this state for decades until their endowments got raided, terrorist threats increased, and water shortages loomed. Their ability to see and influence systems inside and outside of their own organization will determine who adapts and survives in the unpredictable world of the future.

At the other extreme, patterns may come and go so quickly that you cannot even see them form. This space is unorganized. I've worked with an advertising group filled with creatives for whom every day was a new adventure. Reliability wasn't a high value for them, but it was for their clients. You can guess what happened.

In the middle, the active self-organizing dynamics appear. In this domain, behaviors are not predictable, but they are recognizable. Patterns emerge over time and can be discerned and encouraged or discouraged. These are the dynamics you observe during any large scale event. Distinct individuals interact, and new patterns of behavior and relationship emerge. Self-organizing is also the behavior you see after the big event when things shift back to normal.

You can use the Landscape Diagram to plan interventions and select tools. I'll give you an example. A client contacted me to help design a new, more efficient structure for a collaborative of collaboratives. As I collected background data, it became clear that the partners were locked into destructive personal and institutional relationships that seemed insurmountable—stakeholders invested time and energy either in avoiding or disagreeing with each other. We influenced that pattern by introducing surprise and reducing individual control. Simple things like changing seating arrangements, or meeting at odd times and places, challenged their long-held beliefs about partner organizations. These interventions threw the core Work Group into some disarray, and we took that opportunity to invite each member to introduce ideas about a new design for the collaborative structure. At first, the new ideas seemed random and disconnected, each idea came from a different point of view and expectations for outcomes. Over time, however, the group began to name a few things that were critical to all—patterns began to emerge in the self-organizing dynamical space. Today we have a governance proposal that will be discussed, and we hope ratified, by more than 20 collaborating bodies in the next few months.

I did not have a plan for the end game as this project began. I did not know how it would come out. All I knew was that the group was locked into negative control space and needed to be jostled into new ways of being together. It wasn't a complex intervention. It wasn't a violent intervention. I didn't question their commitment or shame them for past behavior. I simply shifted the conditions and waited for new patterns to emerge, then I shifted the conditions again to strengthen the positive patterns as they formed.

If a clear pattern hadn't been obvious at the beginning of the project, we might have concluded that the group was far from certainty and far from agreement, and we would have chosen different tools and techniques to help them move to their most productive state.

The picture may look static, but it isn't. Individuals and groups are moving across it all the time. Think of a team. The first meeting is like popcorn—random this and that coming from all directions. In time, the group begins to carry on rational conversations, and at some point they may work like a well oiled machine. The same thing is true at other scales. It makes as much sense to talk about an individual's learning journey (from confusion, through adaptation, to expertise) as it does to talk about the development of a new technical product (from initial needs assessment, through design alternatives, to production and distribution).

All OD tools, methods, and techniques have the capacity to shift a group on this landscape. Some, like brainstorming and storytelling serve to move a group up and to the right. Other approaches, like re-engineering, standard operating procedures, persistent feedback, move a system down and to the left. You can think about your favorite approaches and see when and in what circumstances they move your client systems toward or away from randomness or control.

Another tool that is helpful while dealing with complex adaptive human systems is a model I developed during my doctoral program. It has helped practitioners to think analytically about how to see and influence patterns on the landscape. The CDE Model describes three conditions that influence the speed, direction, and outcomes of self-organizing processes.

First, a container (C) bounds the system and determines the parts that will interact to form collective patterns. Examples of containers in organizations include visions, charismatic leaders, physical spaces, membership lists—all hold a group together and distinguish the “inside” from the “outside.” OD interventions that deal with mission, vision, and values strengthen the container for a group. If a container is small, then patterns will form more quickly and be more orderly. In a large container, more diffuse patterns emerge and it takes more time. One of the best examples I’ve seen of the use of containers in OD is the NTL Human Interaction Lab, where multiple containers (dyads, whole group, and T-group) are designed as part of the whole experience to contribute to individual transformation.

The second condition involves differences (D) that exist within the container. Differences establish the tendency toward motion and define the features of the pattern that emerges across the system. Difference is the engine that drives self-organizing behavior. Without difference within a container, nothing will happen—entropy rules. Racial and cultural diversity are examples of differences that might make a difference, but many others also shape the dynamics and emergent patterns of a group. Seniority, power, expertise, jargon, dress are all differences that might shape the emerging group patterns. Focus on too few differences drives a system into the control space. Too many relevant differences move the system toward randomness. Focus on a small number of significant differences sets the context for lively and adaptive self-organizing. Though difference is the core feature that drives the dynamics of complex adaptive systems, few OD interventions focus on the potential of differences within and between groups. The popular focus on “common ground” can unnaturally reduce differences and drive a system into apparent control. Over time, the system will either disengage or sabotage the apparent coherence of what turns out to be not-so-common ground.

The third and last condition for self-organizing describes the interactions or exchanges (E) among the agents. Exchanges provide the interactive options that allow system-wide patterns to emerge. They are necessary to emerging dynamics, but they are by no means sufficient by themselves. Frequent and tight exchange moves a system toward predictable behavior, while weak or absent exchanges shift the system toward random behavior. Traditional OD approaches deal primarily with exchanges, as they encourage feedback and dialogue. My experience and research indicate that such approaches will work only when the other conditions (container and differences) are sufficient to establish or sustain effective self-organizing patterns. For example, if the mission and/or membership of a group aren’t clear, then meaningful dialogue will be difficult to establish or maintain over time.

I suspect you’re feeling a bit overwhelmed at this point—way up in the right-hand corner with random dynamics. Relax and take a deep breath. Even if these ideas resonate with your own world view and experience, learning to see and influence human systems dynamics is a long and arduous process. I’ve been doing this work in this particular way longer than anyone in the world, and still each day is a journey of inquiry and discovery for me. It is like learning to play the piano. There are some basics that require practice, but are relatively simple. The real skill evolves over a lifetime as you try new pieces, listen to

others perform, give and receive critiques and accolades, and engage the world from the pianist's perspective. In the same way, if you choose to share the HSD path, each conscious encounter with an emerging human system will teach you new ways to see and influence patterned dynamics as they emerge.

In closing, I'd like to share with you some of the beautiful images from complexity that we've found particularly interesting and helpful in developing theory and practice in HSD. This is a fractal. Does it look like a portrait of some human systems you deal with? This is a bifurcation chart that shows how a system moves in and out of control through a process of stretching and folding. This is another fractal, one I like to think of as a picture of the acquisition that didn't. And this is an attractor—finite boundary and infinite possibility.

Before I had the language of complexity, I, like you, experienced and intuitively influenced human systems all around me. Now I can reflect on three questions again and again: What? So what? Now what? and come consciously to see and influence the patterns around me. Today I work with a network of individuals engaged in radical inquiry to articulate theory and practice that reflect the power, unpredictability and beauty of human systems dynamics. I would like to thank the many people in the audience who've made this journey so productive and so much fun. And welcome others to join the journey. As we open for questions, I hope that our time today has helped you all imagine ways that you and your clients will be able not only to survive but to thrive in the unpredictable landscape of the badlands to come.