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Every month **Attractors** shares tips and tools from human systems dynamics. In this month's edition, Glenda Eoyang reflects on
DYNAMICAL CHANGE

The election.
The economy.

Two bigger-than-life patterns loom large on our shared horizon. How many different ways can we say that the future will be different from the past? What exaggerated phrases of shock and awe have we heard over the past weeks? Each day brings new surprises and more uncertainty about how the future will unfold. How can we as individuals, families, communities, and nations cope with such instability?

First, we need to realize that these big patterns are not different in kind from the patterns of change we face every day. When changes are smaller or more local, we can convince ourselves that we know what is happening. We take change for granted. We help ourselves believe that we have been there before, that the future isn't all that different from the past, that we can continue "business as usual." But even the changes we can comprehend and cope with carry the seeds of a radically new kind of change.

In human systems dynamics, we call this new kind of change *dynamical*.

Static Change

Since the time of Galileo, we have understood the nature of *static* change. Static change begins with an object at rest. The purpose of change is to move that object to a different, equally stable, position. To accomplish static change, we just have to answer two questions: Which direction should I push? How hard should I push? This simplistic perspective can be quite useful when it works. From this perspective, my clients:

- • Enter existing product niches
- • Engage with competitors
- • Deal with resistance to change
- • Provide advice to a failing employee
- • Explore the gap between current reality and future dreams
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When systems are stable and change is slow, these approaches can work perfectly well. In complex situations, like today's election and the roller coaster markets, such an approach can be worse than doing nothing at all. Consider the negative advertising that candidates are heaping on each other. Consider the "bailout" plan that pumped money into a "locked up" credit market. In both cases, our smartest leaders told us we were pushing hard enough and in the right direction. In spite of our faith and our subsequent surprise, these static change strategies did not work. Young voters didn't know what a Socialist was, and institutions didn't have faith in borrowers' ability to repay loans. Our static understanding of change was not enough.

Dynamic Change

Since the time of Newton, we have understood the nature of *dynamic* change. Dynamic change assumes that an object is moving in a smooth path from starting point to logical conclusion. The purpose of dynamic change is to kick off a chain reaction and to anticipate the predictable stages of evolution. To predict and control dynamic processes, we must answer two different questions: What are the initial conditions? What are the forces working on the object? Like static change, dynamic change works wonderfully when it works. From the dynamic perspective, my clients and colleagues:

- • Set objectives and outcomes
- • Track trends of change over time
- • Expect developmental phases like storming, forming, norming, and performing
- • Look for root causes
- • Plan and execute projects
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When conditions are right, dynamic change works beautifully. When conditions are complex, it does not. Politicos and economists have had their share of frustrating dynamic tactics in the past few months. Consider the political strategies based on historical voting patterns or expectations of racism or sexism. Consider the traditional relationships among the values of commodities, stocks, bonds, currency, and real estate. We all expected a smooth curve of relationship and predictable patterns of behavior. We were surprised.

Dynamical Change

The many fields of nonlinear dynamics have opened our eyes to a new kind of change—*dynamical* change. Dynamical change relates to the behavior of complex systems, where patterns of change are completely unpredictable.

Dynamical change is marked by:

- • Fractal patterns when change at one level instigates or prevents change at another level
- • The tipping point when a system is poised far from equilibrium and a small change triggers an avalanche
- • Intermittent jumps and cascades when the system seems stuck as tension accumulates then breaks loose with abandon
- • Networks of connections that can either hold a system stable or move it quickly into new patterns
- • Self-organizing patterns when interacting parts generate coherent system-wide patterns

Dynamical change influences objects that are already in motion. It does not follow smooth dynamic paths because the number of variables is large and/or unknown, the system is open to outside influences, and the forces have the potential to amplify each other.

The conditions for dynamical change should sound familiar. They are exactly what we are experiencing in the election and in the economy.

An election campaign engages with individuals and groups that are never completely at rest. Though pundits try to simplify constituencies, each person is a unique combination of expectations and options for action. The political landscape is influenced by a wide variety of other landscapes including the media, literature and arts, economy, service delivery, and even the weather. Finally, the political world is full of mutually reinforcing factors. Campaign funds increase advertising, and advertising increases campaign funds. Dirty ads increase fear, and increasing fear generates new, more egregious ads. Politicians and voters both feed on the byproducts they create. These conditions set the stage for unpredictable, dynamical change.

The same is true for the market economy. Selling and buying are continuous, especially in this global economy. The number of variables that affect market behaviors are enormous including everything from superstition to rainfall to the price of oil. To make matters even more dynamical, the relationships of prices and markets are tightly coupled. A falling market increases fear, and fear makes people sell, and sales lower the market. A trader on Wall Street watches the Hong Kong exchange, and the Chinese trader is watching New York. And so it goes. We live in the middle of dynamical patterns that we neither understand nor control.

Though there is no silver bullet to resolve issues in dynamical change, human systems dynamics does offer some survival tips:

- • **Watch multiple time horizons.** Be concerned about tomorrow, but don't forget about next quarter and next year. These days it might even be a good idea to think about the next decade.
- • **Attend to the whole, the part, and the greater whole.** Dynamical systems depend on the interdependencies of massively entangled parts and wholes. Consider yourself, your company, and your industry. Consider yourself, your family, and your neighbors. Consider the middle class, the rich, and the poor. And consider the complex relationships among these self-organizing levels.
- • **Stay connected.** Time and space in dynamical change are "lumpy." Nothing may be happening where you are, but things might be spinning around your buddy down the block. The more networked you are, the better prepared you'll be with information and options for action.
- • **Watch for weak signals.** Media focuses on the big messages, but in dynamical change the big messages don't show up until the real change is over. The key to riding the waves of dynamical change is to see and respond to the whispers of change before the tsunami takes over.
- • **Hold tightly to your ethics.** What do you trust when change is unpredictable and out of control? You can only trust yourself, and other people need to trust you, too. That is why times of dynamical change challenge us to know what we value and to act with conviction and courage.

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Whether you are watching the race for the presidency or the dance of the markets, you are witnessing dynamical change at its most extreme. Don't be fooled by those who spout static or dynamic explanations and advice. Keep your eyes and mind open for adaptive options for action that will help you learn from the past, manage the present, and prepare for the future.

On November 5, I will be leading a webinar conversation on planning in the midst of uncertainty. Jennifer Schuster-Jaeger and I will explore how static, dynamic, and dynamical change influence decision making and action in complex human systems. Visit www.uliveandlearn.com and search for HSD planning to register. I hope you can join us, and . .

Remember to vote!

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