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Abstract

Back in the fall of 2000, I made a presentation at a RAND Corp. workshop, Complex Systems & Public Analysis: New Tools for a New Millennium. About half way through the second day, during a discussion of agent-based modeling of social systems, the person sitting next to me said, “These people realize what they’ve got their hands on. Most of them just want to slap some complexity tools on their old way of thinking.”

At the time, I agreed with her. But in the years since then, I realized what a long jump incorporating complexity into one’s thinking really is. (I’d call it a “jump of attractors,” if I wasn’t so sure some of my readers would object.) Applying complexity to social systems, it seems to me, isn’t a “theory”; nor can one apply it as a turn-key system for understanding human interactions. Rather, it works best for me as a comprehensive way of thinking, very nearly an epistemology, which resembles Chinese philosophy — with its deep sense of interconnection and causality as a product of the entire system — more than the analytically accessible linear causality of traditional Western science.

Intellectually speaking, that’s a long journey, and I sympathize with newcomers to complexity thinking, who are still at the beginning. Even so, I sometimes miss the I-know-something-you-don’t-know feeling I had at the RAND workshop. And I was surprised to recapture it as I began reading Complexity in World Politics: Concepts and Methods of a New Paradigm. Even the title reminded me of that workshop.

By the time I put it down, however, I’d realized how much things have changed in just a few years. To my surprise, this book examines intelligently how some of the tools of complexity science can (and cannot) be used to study world politics. True, none of the contributors has internalized complexity thinking to the point where they’ve become conscious that it can function very nearly as an epistemology. Still, if for nothing else, the book is a fascinating study in how much the way people are thinking today has changed, and how much closer to a complexity perspective even those new to its study are getting.

Editor Neil H. Harrison began from the assumption that both study and practice of “world politics has for too long been distorted by [the theory of] rational choice” and that complexity theory presents an attractive alternative. Complexity, he tells us in the book’s first essay, “Thinking about the World We Make,” “views politics as emerging from interactions among interdependent individual agents within evolving institutional formations.” In this essay, he discusses several principles of complexity as a way of approaching the study of politics. And while I may argue with some of his points — his use of the concept of “simple rules,” for instance (more about that later) — by and large, Harrison has incorporated complexity thinking to a high degree. So in discussing causality, he explains that the student of complex systems “should look to the evolution of the system, not to individual events.” Impressive stuff.

Not all the essays are equally impressive. For instance, in “Complexity and Conflict Resolution,” Dennis J.D. Sandole seems too intent on attacking traditional Realpolitik to stay true to the principles of complexity. Perhaps my reaction to the essay emerged
in part because of my discomfort at the rhetoric of conflict resolution. In this essay, for example, Sandole insists that post-9/11 terrorists “are not deterred by traditional Realpolitik threats or the actual use of force” [author’s italics]. According to a recent PBS series on terrorism — and, editorially, PBS seems the anti-Fox News Network — al-Qaeda was nearly put out of business during the Afghan war and only revived during the chaos in Iraq. As a result, I wasn’t surprised when he insists that “the crux of complexity” is “the ‘need’ to nudge systems at the ‘edge of chaos’ so that neither chaos nor order prevails at the zero-sum expense of the other.” For me, this is a gross misapplication of an idea, the so-called edge of chaos, that’s of questionable value anyway.

Other essays provide what seem to this non-expert in the field of politics to be valuable insights. Walter C. Clemens, Jr.’s essay on ethnic conflict in the former Soviet Union, for example, makes some fascinating points about diversity and political self-organization in the nations he considers, based on complexity principles. Similarly, Ravi Bhavnani’s “Agent-Based Models in the Study of Ethnic Norms and Violence” makes sense of the way long-time neighbors in Rwanda killed each other. For readers of this journal, however, the most valuable part of the book is the last half, in which the essays explore uses of agent-based modeling and the overall value of complexity theory in the study of political systems.

And what makes it most valuable is that it examines what for me is the critical weakness of the book. That is, that it is based on the same application of complexity theory to social systems — one might call it technical complexity — that Ralph Stacey (2001, for instance) finds so objectionable. If I were to agree with the book’s author’s (and Stacey) that complexity theory is rooted in computerizable complexity, as their emphasis on agent-based modeling in the second half of the book demonstrates, then I would also apply it only reluctantly to human systems.

But I don’t. Their emphasis on “simple rules” does make complexity seem inadequate. That’s because such rules are merely attempts to describe the behaviors that complex systems evolve in a stable state. They are capable of evolving further — that is, their systems can learn — as the context changes. When those behaviors don’t evolve, the systems are driven into phase transition.

And because the author’s have accepted this limited — and limiting — conception of complexity, one of the strengths of the book is its rejection of that limited conception of complexity as “an encompassing theory,” as Harrison puts it in the concluding essay. “Complex systems concepts,” he adds in that essay, “can generate radically novel hypotheses,” leading thinkers to “ask different questions and search for data in new places.” He notes, in particular, that the idea of agents “introduces potential for dynamic system change”; that it enables one to treat “international negotiations as the coevolution of adaptive states”; and that the essay by Ravni Bhavnani on the Rwandan genocide addresses “a puzzle that conventional theories cannot touch.” Putting just these three together, Harrison and his coauthors have taken a giant step toward what I would consider a true complexity-oriented approach toward world politics. As such, it’s well worth the read.