BOOK REVIEW

Doing Organizational Complexity: A Review of Jeffrey Goldstein, James Hazy, and Benyamin Lichtenstein, *Complexity and the Nexus of Leadership: Leveraging Nonlinear Science to Create Ecologies of Innovation* New York: Palgrave Macmillan, pp. 213, ISBN 978-0-230-62227-2 (hardcover)

Reviewed by PATRICK MCQUILLAN
Boston College (USA)

I first became interested in complexity theory about 15 years ago after reading Roger Lewin's, *Complexity: Life at the Edge of Chaos.* Having little understanding of the field, I nonetheless found the book engaging and provocative. The seemingly overnight transformation of Chaco Canyon, fluctuations in the stock market, and the collective wisdom of ant colonies all spoke to issues of non-linear change in systems where equilibrium was a temporary state, at best. I wasn't certain how it might relate to my research with educational change but I had a sense that this perspective could illuminate organizational dynamics linked to school reform, or the lack thereof. Though I like to believe I have a much richer understanding of the field now, *Complexity and the Nexus of Leadership* by Jeffrey Goldstein, James Hazy, and Benyamin Lichtenstein has served a comparable purpose—pushing me to think in new ways about organizational change, complex adaptive systems (CAS), and the ontological foundations of complexity theory.
For instance, this book helped me consider how I might approach something of a nagging conundrum: If a complex adaptive system is all about emergence and self-organized transformation, is there a role for intent, planning, or design? Complexity theory offers such a rich understanding of non-linear dynamics—the enduring impact of initial conditions, the power of distributed control, the importance of perturbations and disequilibrium in systemic change, to note but a few—can't we put that knowledge to practical use? Or, must we wait for the proper dynamics to fall into place so change emerges spontaneously and serendipitously, leaving social scientists to explain this transformation after the fact? Maintaining that "plans, intentions, goals and values"

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have no place in the emergence of complex adaptive systems, John Paley (2010) recently wrote:

Complexity explanations account for global order by specifying the local behaviour of units which have no awareness of the order thereby being produced, and which have no intention to produce it (in many cases, they lack the ability to formulate intentions: termites do not design their nests, birds do not intend to fly in formation). . . . Complex systems are examples of a kind of order which is not the result of plans, intentions, goals or values. This is what 'self-organization' . . . means. The system 'self-organizes' in the sense that no intentional force or design is required. Order just happens as a consequence of individuals conforming to local stimulus–response rules. . . . *Intentionality, the restoration of the order–design connection, is the antithesis of self-organization*. (p. 60; emphasis added)

While much I have read in the field aligns with this claim, the perspective leaves me unfulfilled. Can't we somehow apply the power of complexity theory and complex adaptive systems thinking to practical issues. Alluding to recent developments in the field, the authors of *Complexity and the Nexus of Leadership* address this matter:

[C]omplexity science has gone far beyond some of the naïve interpretations of complexity in earlier times where authors imply that a *laissez-faire* style of leadership was all that was needed for people and whole organizations to "self organize". . . . [C]omplex organizing in human systems requires that the right context and the right substrates be in place to begin with, and that these are continually nurtured and maintained in order to support the emergence and growth of useful and innovative structures. (p. 170)

Consistent with this view the authors spend much of the book explicating practical applications of complexity theory for business organizations. While they recognize that effective adaptation requires autonomy and opportunities for spontaneous interaction among system elements, they counterbalance such open-ended, non-directive factors with specific ideas about the "four phases of emergence", "five factors linked to generative leadership", and "eight rules for harnessing positive deviance". In essence, they blend an appreciation for self-organization with insights derived from their research that link to effective organizational change, going well beyond the sit-and-wait-for-transformation-to-occur point of view. Indeed, it is the applied nature of their work that inspired my title for this review, "doing organizational complexity".

The authors also examined a related matter that regularly surfaces in discussions of complexity, what might be termed, the "M-word", the metaphor issue: Often, people critique the work of complexity theorists because they rely more on explicating metaphorical insights derived from aspects of complexity theory than establishing scientific principles (Sorenson, 2002). Speaking to this perceived overemphasis on metaphors, Goldstein, Hazy, and Lichtenstein write:

Unfortunately, most leadership or management books that have appealed to complexity science have presented a narrow understanding of complex system dynamics, on the basis of a highly stylized interpretation of a few intriguing outcomes.

The result is merely a set of metaphors that fail to deliver any sustainable advice to managers and executives dealing with rapid change. (p. 6)

Accordingly, the authors continue: "Rather than masking the inherent complexity of organizations by using simplistic interpretations, we will take this difficulty on directly through clear descriptions and vivid examples, visual diagrams, and alternative ways of understanding" (p. 6). True to their word, the authors provide multiple examples of successful and unsuccessful business ventures and, as mentioned earlier, derive the "phases", "factors", and "rules" that underlie the creation of effective CASs and thereby explore how key principles underlying complexity theory apply to various organizational contexts.

Given this observation, it is perhaps a bit ironic that much of what I gained from this work involves metaphorical conceptions of organizational dynamics. As Maguire and his colleagues (2006) documented in their review of the field: some consider "the provision of new metaphors [to be] perhaps complexity science's most valuable contribution to organizational studies" (p. 175). So while Complexity and the Nexus of Leadership takes the reader beyond the purely metaphorical, the authors also reinforced the power of a good metaphor, at least for me. For example, I found the following concepts to be powerful sources of analogic insight: generative leadership (rather than working to secure their status in a bureaucratic hierarchy, effective leaders enhance the leadership capabilities of those ostensibly being "led"); opportunity tension (understanding opportunity as a sense of disequilibrium that can push an organization, either through internal perceptions or external pressures, to a "new level of functioning"(p. 82), and interaction resonance (realizing that all interactions have the potential to engender ongoing information flow, "the key enabler of adaptation" (p. 16). So while the authors offer practical guidance grounded in explicit aphorisms and strategies, these ideas also offer some rich ways to conceptualize the work one might undertake.

Throughout this work the authors keep two ideas front and center: First, everything is comprised of multiple systems and, in turn, is a component part to many other systems. At their core, organizations are all about systems, and they need to be understood as such. Given this understanding, when successful adaptation occurs "it is the entire ecology that evolves; individual subsystems contribute to, and are affected by, the whole system's evolution" (p. 32). Systemic transformation should be understood "as an interwoven nexus of systems in interchange with each other, rather than one system or organization necessarily trying to get ahead of others" (p. 32). Therefore, when working with systems one should look at multiple levels to understand the emerging patterns and trends. Far more than mere background factors, by their mutual interactions system elements at any level can be shaped by, and can shape, other elements in significant ways.

And second, to create healthy adaptive systems one must attend to the relationships among system elements, be they corporations or employees, collaborators or competitors. Speaking to the need for creating "ecologies of innovation" to nurture organizational adaptability, the authors early on emphasize this point: "[T]he true

catalysts of innovation are the web of relationships—in the nexus of interactions—that connect members to each other and to others in the environment" (p. 2). Generative leadership, for instance, requires that leaders "intentionally construct the right kind of networks of exchange, through which interaction resonance can expand the quality of information transmitted" (p. 39). Specifically, an ecosystem thrives only when "the exchanges of energy and resources among its subsystems [in other words, its relationships], are vital, numerous, and sustainable, which make it more adaptable to unpredictable changes in its environment" (p. 31).

To generate a context within which organizations and the relationships on which they are founded can thrive, diversity is critical. As the authors explain, "[D]iversity provides a wide range of possible responses to any given situation. The wider is the range of variations, the more likely it is that (at least) one will become viable in furthering the adaptability of the whole" (p. 179). Relationships can be further enriched by shifting how one thinks about leadership. Specifically, "reframing leader and leadership as referring primarily to events rather than to people" (p. 2), the authors highlight the salience of relationships by focusing on collective outcomes rather than individual actions. Complementing this perspective, they further maintain that leadership should not be understood as something unique to particular individuals; rather, "[E]very single employee is responsible for generative leadership on an hour-by-hour, day-by-year basis. . . . [L]eadership is not in the senior managers; instead, leadership is in every interaction throughout the organization" (p. 195). Leadership therefore entails managing relations throughout an organization as well as relationships with other organizations throughout the relevant ecology, always searching for the synergistic and symbiotic:

[G]enerative leadership of ecosystems is a function of managing the nature of the interaction whose vitality is the impetus for change. Just as biological ecosystems thrive through connecting and reconnecting to subsystems . . . management theory must yield an appreciation for, and a nurturing of, the vast web of relationships that are always in flux, both in their number and in the quality or resonance that characterize them. (p. 36)

There is one final topic I'd like to raise, another metaphor of sorts, "positive deviance". In a compelling way, the authors discuss how a study of Vietnamese villages identified families whose children were healthy and well-nourished though most children were badly undernourished. Focusing on the positive deviants within each village, the study found that some families enacted practices that proved quite productive for their children's well-being: feeding them more often, though not more; consuming "low class" food sources others shunned; and employing alternative strategies for cultivating rice previously considered ineffective. These families did not intend that their actions would improve their children's nutritional well-being but their actions proved to be forms of positive deviance. For me, this seems much like Paley's description of an effective CAS, lacking any intent or design, merely enacting a stimulus-response scenario within existing environmental conditions.

So what might the implications be for organizational change? To some degree, the assumption underlying positive deviance is that some people will create effective

strategies for dealing with their particular ecology largely out of random chance, which sounds much like Paley's conception of how a complex adaptive system emerges. The trick is to identify these persons and what they are doing. It would have been interesting for the authors to consider whether the idea of positive deviance offers a way to balance Paley's assertions with the aims of this book? Should we be "mining" examples of self-organization in varied contexts that will likely follow the tenets of complexity theory? Are some people always enacting simple but deviant strategies that may have long-term adaptive potential? Is complexity at work in more systems than people realize? In their next book, the authors might consider these issues. I'll certainly read it.

For those interested in complexity theory, non-linear dynamics, and organizational leadership, this book is a fine read. The authors make a concerted and quite effective effort to apply insights from complexity theory to organizational change. While they focus on business organizations, as an educational researcher, I still found the book offered much to think about. The authors have certainly shaped how I now understand this field.

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About the author

Patrick McQuillan, a cultural anthropologist, is an Associate Professor in the Lynch School of Education at Boston College. He works in urban secondary schools and his current research interests focus on school reform with an emphasis on using complexity theory to inform educational change. His recent publications include The Impact of State intervention on 'underperforming' schools in Massachusetts: Implications for policy and practice which was published in *Education Policy Analysis Archives* and Understanding Small-School Reform Through the Lens of Complexity Theory: It's 'Good to Think With' which appeared in *Teachers College Record*. He can be contacted via email at mcquilpa@bc.edu