COMMUNICATION FOR DEVELOPMENT AND SOCIAL CHANGE
VOLUME 2(4), 2008, pp. 1-6

2008 pp 000-000
ISSN 1555-8711

Where Social Change Scholarship and Practice Went Wrong?

Might Complexity Science Provide a Way Out of this Mess?

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HERE I ARGUE THAT social change scholarship and practice has gone horribly wrong. Simply put, we stand on a ground that is shaky—fraught with faulty assumptions. We have been climbing a ladder (or ladders), steadily reinforcing its wobbly foundation, not questioning the need to climb.

Am I purporting to be holier than thou? No. I have been complicit in this enterprise, not questioning enough, perpetuating a misguided way of thinking, inadvertent as it may seem.

How did we get into this mess? Is there a way out? Here I present my thoughts, tempered by the thoughts of others,[1] striving for a thesis and an antithesis, and perhaps some synthesis.

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[1] I am grateful to Everett M. Rogers (late), Curt Lindberg, Henri Lipmanowicz, Reuben McDaniel, Jr., Ruth Anderson, Jerry and Monique Sternin, Jon Lloyd, Virginia Lacayo, Karen Greiner, and several others who introduced me to the science of complexity and sharpened my understanding of the subject.

Social scientists and practitioners are for the most part trained erroneously in believing that social change phenomena can be predicted, controlled, and achieved in linear steps and often with a high degree of certainty (Papa, Singhal, & Papa, 2006; Servaes, 2007). This problematic prevailing mind-set—"if we do this to people, they will behave in this way"—is a result of the overwhelming dominance of Newtonian thinking that spilled over to social science and was reified over decades without much questioning.

Why did this happen? The mechanistic principles, wrapped in the three Newtonian laws, operated so brilliantly in creating predictable machines that we mistakenly began to believe that social and organizational systems could be built and manipulated like machines—with rigid hierarchies and interchangeable parts (Zimmerman, Lindberg, & Plsek, 1998). The march of science with the Industrial Revolution in tow etched the prescriptive "machine" metaphor indelibly. The derived implication was that social and living systems should be viewed as machines, designed as blueprints, implemented with precision, and outputs could be predicted, controlled, and measured (rather "counted"). When social systems did not behave in such predictable ways, the blueprint was re-engineered, the parts interchanged, the supervision enhanced, and stricter measures of quality control implemented. In essence, the "machine" was tweaked, greased, cleaned, and even rested, before it was put in use again, full throttle.

To question this prevailing machine metaphor meant turning upside down the "Holy Grail" of science (who would want to do that?) and inviting derision and condescension about being "soft" on the subject and not being scientific enough (God forbid). As a result, the premise that the thoughts and actions of human beings could be predicted, controlled, and measured in the same way as a machine, a clock, or the trajectory of an intercontinental ballistic missile, faulty as it was, dominated the mainstream discourse, overlooking, silencing, or downright rejecting other ways of framing the world.

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The social change enterprise needs a framework that debunks the mechanistic and "machine" view of a social system, recognizing that living beings cannot be controlled, manipulated, predicted, and/or replaced at free will. They cannot be hierarchically arranged as machine parts and work like clockwork, devoid of feelings, aspirations, and motivations. Needed is a framework that can simultaneously explain the certainty and uncertainty associated with outcomes, as also the agreement and disagreement about how those outcomes could be achieved. Needed is a framework in which outcomes can be conceptualized as being dynamic and emergent and in which serendipity, self-organizing, and surprise is valued, and not dismissed as anomaly. Needed is a framework that can account for both

linearity as well as nonlinearity—that is, why small inputs in a social system can yield surprisingly big outcomes and why often big, expensive interventions yield small, dismal outcomes. Needed is a framework that can account for the simultaneous order and disorder in a system, as well as the co-existence of paradoxes and contradictions.

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One framework that can be helpful in seeing the social world in all its glorious complexity is commonly referred to as "complexity science." I discovered this framework through serendipity some years ago, although I later learned that Nobel laureates and MacArthur "geniuses" such as Murray Gell-Mann in physics, Ilya Prigogine in chemistry, and the late Herbert Simon in psychology have been writing about it for decades (www.plexusinstitute.org).

How did I learn about complexity science? In June 2004, while co-facilitating a three-day workshop on HIV/AIDS prevention, care, and support at Princeton University, my paths crossed—for the first time—with Professor Brenda Zimmerman of the Schulich School of Business, York University, Toronto, Canada. In the late afternoon of the first day, Brenda, a scholar of complexity and organizational change, said something that blew my socks off. She noted that HIV/AIDS was a complex social problem but, unfortunately, most interventions to combat it treated HIV as if it were a simple, or at best, a complicated problem.

At that time, I did not know much about "complexity science" but Brenda's remark resonated with my own experiences. A year earlier, I had co-authored a book with Professor Everett M. Rogers titled *Combating AIDS: Communication Strategies in Action* (2003) in which we emphasized the sociocultural and political-economic complexities of HIV/AIDS, and pointed to the inadequacies of the dominant biomedical model in addressing this pandemic. However, not entirely clear about the distinctions that Brenda was making between simple, complicated, and complex systemic problems, I requested her to say more.

Brenda noted that the recipe for tomato soup was an example of a *simple* system. One could bring the various ingredients together in such a way that one could be quite certain about what the result would be. In essence, by mixing a few things together (or having certain agents interact in a certain manner), one could predict with almost 99% certainty (or more) what the systemic outcome would be.

Complicated systems are multiple simple systems strung together, but still characterized by a very high degree of certainty about the systemic outcomes. An example of a complicated system would be building an airplane with the help of blueprint (that is, the recipe to make an airplane). Brenda used the example of sending a rocket to the moon and bringing it back to illustrate a complicated system. In this case, too, there is a very high degree of agreement about what

to do, and a high degree of certainty (predictability) about what the outcomes will be.

However, most social problems, Brenda argued, were *complex* systemic problems. For instance, what is the "recipe" for raising a child? There was silence in the room.

I gasped: It seemed the hot air of formulaic "certainty" that I was trained in as a social scientist (that is, rejecting a null hypothesis about the relationship between two variables underlying a social phenomenon with the confidence level $p < 0.05$ or $p < 0.01$) left me, escaping into thin air.

As our discussions moved forward, I increasingly realized: *Although most social problems were complex; social scientists approached them as being simple or complicated ones. That is where social change scholarship and practice had fundamentally gone wrong.*

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So what is complexity science? Succinctly put, complexity science is a discipline that provides new insights into how social systems self-organize, evolve, and adapt as a result of interactions among its constituent elements. Complexity science debunks highly planned cause-effect approaches to social change, especially paying attention to the quality of interactions, mutual causality, nonlinearity, outliers, and contradictions (Lacayo Criquillion, 2006; Papa, Singhal, & Papa, 2006; Zimmerman, Lindberg, & Plsek, 1998).

For those interested in further study of complexity science, a short bibliography is provided. However, for starters, some complexity-inspired statements are presented here along with reflections on the implications they hold for social change scholars and practitioners (www.plexusinstitute.org/About/New_to_Complexity.cfm):

1. *Order (or disorder) flows in a system and emerges as a result of interactions among the constituent parts, not from central control.*

The social change implication of this premise is that leaders, change agents, and facilitators must help create conditions that unleash the talent distributed among people. The leader is more a cultivator and weaver, less of a controller.

2. *When the quality of the interactions among agents is enhanced, the adaptability and creativity of the agents and the system are also enhanced.* Further, the diversity of agents in the system further enhances the system's adaptability and creativity.

The social change implication of this premise is that leaders, change agents, and facilitators must place a very high value on developing and strengthening personal relationships between and among themselves, interested others, and clients. Relationship-centered practices such as openness, diversity, integrity, and

authenticity deeply influence how the system's constituent elements coalesce and self-organize.

3. *Small changes in system inputs can produce big ripple effects.* This occurs because the web of connections among the interacting parts can cause changes to ripple throughout the system. For example, an extra grain of sand can cause an avalanche in a sand pile. Rosa Parks' refusal to give up her seat on a segregated bus, for instance, led to cascading events culminating in the granting of civil rights to black Americans.

The social change implication of this nonlinear premise is that big problems do not necessarily need big solutions. For instance, in 2002–2003 the Indian state of Bihar was the site of a radio soap opera broadcast called *Taru,* designed to promote gender equality (Singhal, Sharma, Papa, & Witte, 2004). In one episode, the feminist protagonist, Taru, arranges with a village family to celebrate the birthday of one of the little girls. In reality, girls' birthdays are traditionally not celebrated in rural Bihar; whereas a boy's birthday calls for ritualistic ceremony. However, after this particular episode was broadcast, several villages in Bihar reported the celebration of girls' birthdays (Singhal, Rao, & Pant, 2006). Also, once a girl's birthday was celebrated, many other girls in the same village (who attended the birthday party) demanded that their birthdays be celebrated as well. One may ask: Is this just a new fad, complete with cakes, balloons, and sweets? Or is it more? If girls in today's rural Bihar demand that their birthdays be celebrated on a par with boys, are they not likely to demand someday that they also ride the bicycle, or go to school, as their brothers do? Where will this stop?

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Complexity science is not a prescription, mantra, or religion. Nor is it dogma. It is a growing field of scholarship and practice, not tied up in mechanistic knots of cause-effect and prediction-control equations. Complexity science values human agency, especially in enacting society through interactions, good and bad, productive and interactive. Complexity science is not too concerned about unknowns and messiness; it knows that they are an integral part of the social change enterprise.

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