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CONVERSATION ON PERSPECTIVES: THE FIELD OF KM AS A COMPLEX ADAPTIVE SYSTEM

By Alex and David Bennet

Stories in conversation help us explore different viewpoints and frames of reference. Imagine yourself in a high valley in the middle of the Allegheny Mountains of West Virginia sitting in a two-tier research library with several colleagues. The conversation is just getting started ...

Sy, a cognitive psychologist recognized for his ground-breaking work on judgment and decision-making as well as creative approaches to internal motivation, sits on one of the burgundy leather couches of the Mountain Quest Institute¹, reflecting on the research results he has just read. Across from him is Ivan, an international businessman whose specialty is knowledge-based organizations addressing the multicultural challenges of global business. Next to Ivan sits Bianca, a biologist interested in the application of living systems to organizations, and angled into an adjacent chair is Fern, a futurist specializing in global trends at the intersection of technology, culture, economics and management.

Sy looks up at the others and speaks, “I am somewhat surprised—actually, amazed is a better word—that this field, admittedly which I know little about, can contain within itself so many of the key elements that excite us as human beings. We all value knowledge—that’s core to being human—but the field seems to couple that knowledge core with the characteristics of sharing and creating and acting on knowledge that not only offer the possibility of improving our organizations, but make each of us as individuals feel good about our own personal growth and contribution. As Csikszentmihalyi explains, in the West we have historically thought of ourselves as individuals whereas Asian and African cultures see themselves as nodes in a network of relationships (Csikszentmihalyi, 2003, p. 169). In reading this research I got the sense that many of the thought leaders interviewed saw themselves as nodes in a large—perhaps global—network. Perhaps knowledge workers in knowledge organizations also see themselves that way.”

Ivan nods, “That’s an interesting perspective, Sy, howbeit speculative. But as a global businessman my primary concern has to be how to create businesses that live long, maintain competitive advantage and stay profitable. Relative to those goals, I’m not sure how well knowledge management will be able to contribute, although, of course, intuitively I understand the importance of managing knowledge assets. Now, something I’ve learned about this field from both my experience and what I’ve read is its power to move organizations away from the bureaucratic, control-oriented mindset toward recognizing and giving individuals more freedom,

¹ See www.mountainquestinstitute.com

influence, and opportunity to contribute to the organization's mission and direction. What do you think Bianca?"

"Well, what you say certainly makes sense," Bianca responds. "But I'd like to propose that looking at knowledge-centric organizations—those organizations that have learned how to empower their knowledge workers, increase innovation and at the same time maintain cohesion, they have done very well. Birkinshaw addressed this challenge in an MIT *Sloan Management Review* article (Birkinshaw, 2004). We should all be aware that there's a lot of recent work that's being done in the area of complexity theory that relates to the researcher's remarks that a KM organization, or more appropriately perhaps the field of KM itself, could be considered a complex adaptive system. For example, to meet the rapidly changing demands of the marketplace requires both our organizations and the KM field to continuously learn and adapt, or get left behind."

Fern breaks in. "Bianca, I think you're on track. In my work looking at global futures I see a definite trend moving us away from standard industrial age management and thinking toward a much more challenging and uncertain future. I'd like to suggest that the acronym CUCA describes this future, in the sense that our world is one of accelerating *Change*, rising *Uncertainty*, rapidly growing *Complexity*, and increasing *Anxiety* in response to that change, uncertainty and complexity (Bennet & Bennet, 2004). As the research points out, information is growing exponentially and knowledge builds on knowledge. These phenomena do not seem to be leveling off and, frankly, I'm seriously concerned about our ability as a species to handle this. Bianca, could you elaborate a bit on just exactly what is a complex adaptive system? This may be helpful in finding a way to deal with this challenging CUCA environment."

"Sure, Fern, I'd be happy to share my thoughts in this area. The concept originated years ago in biology in a new, closely associated field of study called general systems theory. A complex system is one with so many interrelated parts that it is impossible to trace causal effects, or detail influences or relationships. As Battram has proposed, a complex adaptive system is not only complex but also self-organizing, continuously learning and, of course, changing its internal structure to adapt (Battram, 1996, p. 82)."

Ivan interjects, "Go back for a minute—are you saying we can't use logic and to make rational decisions?"

Sy jumps in, "Let me answer, Ivan. Unfortunately I think you're for the most part right, although what we think of as rational decisions certainly still has a role in decision-making. Let's take the field of knowledge management for example. The direction of the field as it evolves is the result of a large number of knowledge workers and thought leaders making rational decisions, acting on hunches, creating new ideas and pursuing possibilities. This is so because no one is capable of foreseeing or even understanding the future and—as chaos theory has taught us—small changes can sometimes lead to extraordinary results (Cohen & Stewart, 1994). In other words, the direction of the KM field emerges from the actions, decisions, creativity and intuitive thinking of many different individuals. But realize that we're all in the same boat as our organizations become more knowledge-centric and more complex. All of us have grown up from an industrial history which has naturally led us to learn to make decisions—and act on those decisions—from the premise that we live in a deterministic world where the more information

we have and the more rational our thought the better our decisions. (Gigerenzer & Todd, 1999, pp. 8-9) And while this is certainly true for many areas of our work—those areas that still function in simple cause-and-effect environments—as Fern points out, as our milieu becomes more complex we have to recognize that it is not possible to use only logic and analysis.”

“That’s an excellent point,” Bianca agrees. “Because not only is complexity very challenging to understand, it is essentially unpredictable to various degrees. (Battam, 1996, p. 13) There’s what is called an emergent phenomenon in complex organizations. Examples are culture, consciousness, and knowledge itself that arise from multiple interactions within a complex system and take on characteristics entirely different than the components of the system. The field of knowledge management is undoubtedly a complex system because there are far too many people, too many relationships, too many ideas, and too many organizations involved to ever truly “understand” the relationships among them and the details of what is happening. Yet, books are written, trends appear, patterns become clear, and the overall field does have a direction that could be described as a ‘cone of possibilities’ even though the path may appear random, and is unpredictable.”

Ivan leans forward on his seat. “Bianca, are you saying that the KM field has no leader, no strategy no specific direction? If that is the case then is it simply a random group of well-meaning people? This doesn’t make sense to me.”

Bianca responds, “This same self-organization occurs in many complex adaptive systems! It just bubbles up from the large number of interactions, relationships and goals of the many workers—or we could add the term thought leaders—in the field. Also, recall that knowledge itself, when coupled with learning and sharing, forms a common bond that helps the overall field take on slowly changing patterns. For example, the research mentioned several emergent phenomena such as storytelling, communities of practice, living networks and the current movement toward personal knowledge management.”

“Bianca, does this mean that as a businessman I will no longer have control over my organization? Not that I always feel like I’m in control, but if I don’t have control how can I be responsible for it? Senior executives and government leaders are expected to have control of their organizations and be accountable for them, and now you’re telling me because the future is becoming more complex, more of this CUCA stuff, that knowledge and KM are describing a situation in which there’s no such thing as real control?”

Sy looks at Ivan smiling. “Well it sounds like you intuitively recognize, of course, that we as individuals are rarely in control anyway. What’s happening now, as we move toward a knowledge society, is that organizations are moving from the highly-controlled organizations of the early 1900s that spurred Taylorism in the auto production lines and generations of simulated sweat shops, toward an environment which will no longer be dominated by organizations. In other words, in this new paradigm if organizations mimic the field of KM and become more like complex adaptive systems, they scan, observe, interpret and adapt to the environment in addition to, of course, influencing where and what they can. It’s more about collaborative advantage than competitive advantage.”

Bianca jumps in excitedly. “That is absolutely right, and this field of knowledge management offers a good example. The field must adapt to the needs of its customers, which

are organizations and corporations, in the sense that if it doesn't produce value added it will have to struggle to survive, no matter how self-worthy it is."

"And what we have seen," Fern offers, "is a significant movement within the field from its initial focus on technology and information towards knowledge in terms of understanding and the social aspects of knowledge creation and mobilization as predominate value contributors. This is an example of learning and adaptability."

Sy agrees. "Yes, and that's exactly why the field of knowledge management is moving us towards recognizing the significance and importance of humans and individuals and learning and sharing to create value added. It is internally and naturally evolving in the human direction: giving the individual the freedom and responsibility needed for success within the vision and direction of their organization."

Bianca softly exclaims, "Ah, ha! You have just identified a significantly new emergent property of the field of knowledge management."

"A question," Ivan interjects. "Does this mean that the field will survive if it continues to offer value to its customers while adapting to the needs of a changing world?"

Bianca nods, "From a biological point of view, every complex adaptive system must have energy and information coming in, and it must be able to continuously create new ideas and change its infrastructure to adapt to the demands of its environment. In the case of the KM field, its energy comes from the passion of its thought leaders—and most likely knowledge workers as well—and the human desire to learn and understand."

Sy jumps in, "And I think part of that passion is the opportunity to create new ideas, processes and applications, and to better understand the process of developing and exploring our own cognitive limits through personal study, team collaboration and other leveraging approaches. Also, I would suggest that the field offers an inherent internal growth capacity which stimulates its survival. Since knowledge builds on both exponentially growing information and on knowledge itself, by its very nature the field of knowledge management builds upon itself. I guess that's what is meant by the researcher saying the field is self-referential."

"That's certainly true," Fern offers, "although the researcher was pointing out that what thought leaders were doing themselves as thought leaders and practitioners is exactly what they are helping others learn how to do. But I think this is also because the explosion of technology has reduced the cost of communication, emphasized the creation of networks, sped up transactions, and allowed knowledge workers to confront the challenge of understanding and dealing with complexity."

"Yes, but recognize," Sy suggests, "that we're only at the beginning of this transition into the age of complexity, and frankly no one really understands how or what we as a species need to do."

Bianca offers, "True. But the field of KM has helped awakened many of us to the importance of continuous learning, knowledge sharing, and understanding our connectivity and inter-dependence as a race. This may be the beginning of a changing world."

"Well, from my psychologist perspective," Sy says, "I certainly understand why autotelic work is so frequently found within the field of KM, and why the field seems to have a magnetic attraction to many people. It both supports our own personal deep desire for understanding and

growing as well as providing a contribution to the broader good of organizations and families, and maybe even the greater good.”

“If it can do all that,” Ivan says excitedly, “and in addition create a new value proposition which improves our economy, our collective affluence level, and help developing countries make a larger contribution to world growth and create an improved standard of living, then this field should be recognized for its potential.”

Sy laughs. “Well, I don’t disagree, except to add that it’s really people who will do all that, howbeit people who are both more knowledgeable and connected through living networks, and people who are supported by everything this field pushes us to focus on. So our focus is not so much on people as assets, but people as investors, investing time, energy and intelligence” (Stewart, 2001, p.252).

Fern, who has been listening carefully, reflects on the dialogue before saying, “Ivan, I don’t know whether you’re aware of it, but some developing countries are already using the field to leapfrog developed countries. They are bypassing industrial development and moving directly into the knowledge world. This makes sense. Besides needing natural land resources, industrialization takes a great deal of capital and time, and developing countries don’t have much of either. But now that people around the world have access to satellites, Internet, cell phones, and so forth, they are aware of what’s happening on other continents. This creates intense pressures to raise standards of living.”

“Now that you point it out, Fern,” Bianca responds, “perhaps the field of KM as a complex adaptive system is spreading its wings far enough to potentially become a world-wide phenomenon.”

“That’s an interesting possibility,” Sy says. “I do know that if we had world-wide communication and recognition of the importance of learning, sharing and innovation that the knowledge management field promotes, then technology coupled with living networks could help the world become closer and more collaborative rather than highly competitive and divisive. Mind you I’m all for a little competition, just not the kind that separates winners and losers. In our multinational enterprises we’ve already recognized that our exposure to a wider variety of customers, competitors and technologies stimulates innovation by helping us sense and respond to a diverse array of environmental signals. Then, we have the ability to tap into the resources and capabilities of a rich knowledge-creating network. That means better responses to choose from, and the ability to proliferate certain innovations (Gupta & Westney, 2003). Living networks may well move us toward a win-win world.”

“Living networks can certainly change the global business arena,” Ivan notes.

“What a fascinating possibility,” Fern suggests, “that something as seemingly benign as the field of knowledge management, no matter what you call it, could be significant as a world movement.”

“Well, I can tell you this,” Bianca responds, “historically very few living organisms have been able to survive the test of evolution unless they *were* complex adaptive. As we all know, Darwin learned that many years ago” (Wilson, 1998, p. 190).

“But aren’t we as individuals *intelligent* complex adaptive organizations?” Sy poses with a smile. “So that hopefully when we start working together that intelligence—connected by need and a willingness to learn and share—can launch us into a bright future.”

Fern sighs, “Did you notice that the researcher applies the word intelligent to the field? Let me confirm that language.” She flips through the pages in front of her. “Yes, the researcher does say that the field of knowledge management is an *intelligent* complex adaptive system.”

Sy responds, “I’m not really sure how a field could be intelligent—other than being the sum of the individual actions and contributions by its thought leaders and knowledge workers connected sufficiently through communications and the sharing of understanding such that there can emerge a mode of behavior and an intention of force that move the field in a direction for its survival and contribution.”

Thinking carefully, Bianca responds, “That’s a long sentence, and a fascinating idea, Sy. There is a concept called ‘swarm intelligence’ that comes from the amazing ability of ants and some other insects to change their individual behavior when needed so that the swarm, as a whole, adapts to, and takes advantage of, changes in its environment. ‘Perhaps the most powerful insight from swarm intelligence is that complex collective behavior can emerge from individuals following simple rules’ (Bonabeau & Meyer, 2001).”

“You know the more I reflect on this field,” Ivan mutters, “the more important I think it may become in all of our futures.”

Fern adds quickly, “I know from my working viewpoint—and maybe my personal one as well—I’m going to follow this field with intense interest, and do some serious study to understand it better.”

“That’s a task it would behoove all of us to take on,” Sy states emphatically.

“Yes, I agree,” Bianca responds, “because I think each of us with our own special expertise—and many other people looking at the field from their own experiential viewpoint and areas of interest and work—will help improve our collective understanding of what’s going on, what we need to do, and the possibilities for the future.”

“Isn’t that the concept of a living network?” Ivan asks.

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