

CONVERSATION, THE NEW SCIENCES, AND THE UNLEARNING ORGANIZATION

by Jeff Dooley

1. *Introduction: The Conversation*

Every business day the phrase “the learning organization” flows into countless conversations. Organizational learning is declared by many to be a pivotal strength of healthy business, now and increasingly into the 21st Century. At the same time, leaders strain to understand what a learning organization would look like, what benefits it might bring, how it could be evaluated, and what conditions are required for it to develop.

From within the context of the new sciences, especially those of complex, non-linear systems and self-organization we can begin to address some of these questions in remarkably meaningful ways.

One key but often overlooked result of mining the new sciences for organizational wisdom is that such study changes and expands our conversation. While this expanded conversation is exciting and provocative—seemingly full of promise—it also clashes in many ways with our traditional knowledge, beliefs, and assumptions about the nature of leadership, learning, and the world itself. These traditional assumptions command more deeply-rooted power in our conversation than do insights from the new sciences. Therefore, it is not difficult to imagine how our conversation, as a system in its own right, might organize itself in the face of new ideas that threaten its very core beliefs. The conversation, driven by the network of people who have a stake in it, may adopt a defensive posture to protect itself from threatening, alien influences. If a group of people declare the intention to become a learning organization it is very likely that with this declaration they have, knowingly or unknowingly, set their established conversation at risk.

It is the aim of this paper to explore the conversation as a self-organizing system designed and maintained by the people whose experience it connects. We shall examine elements of the conversation itself and identify them as key obstacles to organizational

learning. Finally, we shall consider some insights from the new sciences that may help us guide our conversation through the rapids of change to a greater state of flexibility and capacity for organizational learning.

At the heart of my presentation lies a controversial assumption about the relationship of conversation to the world we experience. That assumption is captured in the declaration that the world we experience, the things, processes, relationships, and possibilities we recognize appear as they do because we distinguish them that way in language (Winograd and Flores, 1985). This is not to deny the external world an independent existence, but it is to deny that the distinctions we make in language have any necessary correspondence with a reality independent of that arising in our conversation. This assumption, put even more starkly, leads all who accept it to acknowledge that they literally create and maintain their world in the process of continuing conversation. This process of world-creating through language can be diagrammed as a simple self-reinforcing system, as shown in Figure 1. Both the conversation and the perceived world adjust seamlessly to one another over time to become a unified whole.

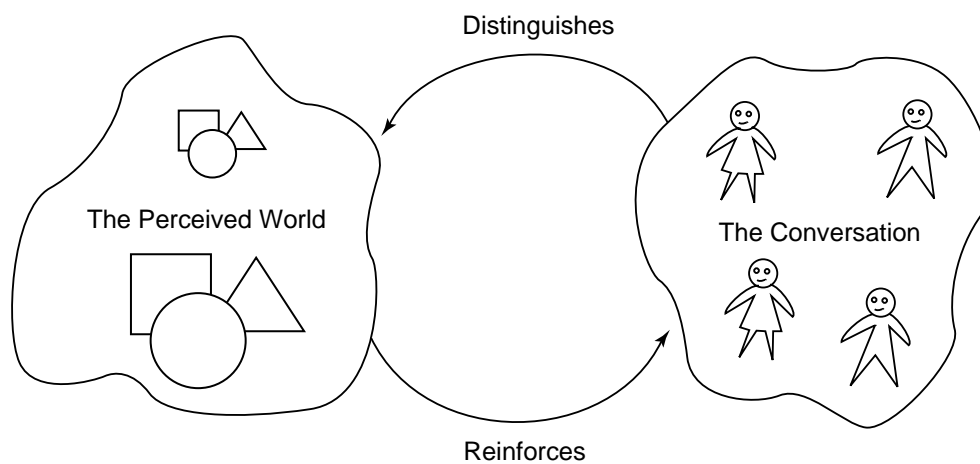


Figure 1

In order to understand how conversation can evolve to enhance organizational learning it helps to see the conversation—a powerful system in its own right—as a key part of the larger system which includes both the conversation and the very world we are

talking about. In terms used by Meg Wheatley (1992), the conversation becomes the “relationship” between individuals and the setting in which they do what they do.

2. The Unlearning Organization

The greatest obstacle to the development of new learning and knowledge is to be found in what we already know. If you’ve ever tried to solve “Rubik’s Cube” you encountered a point at which you had to dismantle the partial solution you had worked hard to arrange, all in order to move to the next solution level. This situation is stressful (in a trivial setting) precisely because it requires us to risk some part of what we have already learned. In the conversation for enhanced organizational learning, which is not trivial, what we already know also may be our biggest stumbling block.

From the perspective of the new sciences we can single out some typical artifacts of current knowledge, fed by centuries of solid reliability, that are becoming less useful to us as we shift away from machine-like efficiency and toward organizational learning and adaptiveness. I’ll single out four of them.

2.1. The deployment of conversation for the purpose of transmitting facts

A key development in systems science, that branch of science devoted to investigating the way unified wholes are organized, occurred when practitioners began suggesting that the “systems” they were cleverly distinguishing were their own inventions, not faithful descriptions of some aspect of reality. If the system diagrams they developed led to the unraveling of an organizational knot then they were deemed successful. But no longer were they held up as mirrors of reality. Much earlier in the Twentieth Century the theoretical physicist Werner Heisenberg demonstrated that the establishment of some facts were forever beyond our grasp, and that these uncertainties changed as a function of how we looked. “Universal fuzziness” is the term Wheatley (1992) uses to position perpetual uncertainty within the conversation about the new sciences. One result of institutionalized uncertainty and fuzziness has been the devalued status of “scientific objectivity.” In

answer to this challenge, the basis of knowledge has begun to shift from its correspondence with reality to a more pragmatic grounding in its potential “usefulness.”

With this shift away from objectivity the significance of the conversation has also shifted, from a utilitarian role as the medium of transmission of facts, to a more primary role as the wellspring of pragmatically useful distinctions about the world. Let’s examine the consequences for conversation on either side of this shift. As an activity of transmission of facts, conversation is a one-way, linear affair. I speak, you listen; if you don’t get it, I speak some more. On the other hand, as an act of shared creation, conversation may become a much more dynamic, looping process, a more collaborative conspiracy of people speaking and listening. One way to imagine this latter type of conversation is to see it as the swooping ballet of flocking birds or schools of fish, moving as with one mind and body.

If we wish to have our learning conversations be more like the vaulting acrobatics of birds or fish then we may have some unlearning to do. If we already know that conversation is for transmission of facts, then this very knowledge could be a factor limiting the heights of conversation to which we can collectively soar.

2.2. Learning about something by dismantling it and studying the parts

Biologists struggling to understand the phenomenon of life have found it ironic that we should be required to kill animals and catalog their parts to further our understanding of the living. Therefore it is no surprise that biologists were among the early systems thinkers. Some biologists, like Ludwig von Bertalanffy (1968), asked what “organizing pattern” was it that determined the structure of beasts. He was asking what principle was responsible for the coordinated structure and behavior of the whole animal, maintaining its unique identity. Later biologists, like Humberto Maturana (Maturana and Varela, 1980), imagined that this organizing pattern was not just a kind of passive “blueprint” for “creature-making” but an active, dynamic dance of perpetual interaction and adjustment between a creature and its environment. It is not possible to learn about this pattern

without observing the ecology of the creature over time, the interrelationships with other plants and animals. Simply collecting the parts and studying them on a workbench can only take us so far.

For work communities aspiring to adaptive learning, systemic thinking and sensitivity to patterns and interrelationships that arise over periods of time is essential. For instance, if a company is experiencing flat revenue, a typical, piecemeal response might be to focus on one area—sales—and increase the number of salespeople. Yet, over time the result may be that with sales up, production backlogs increase and customers bolt rather than wait longer for delivery. Meanwhile, the productivity of individual salespeople plummets and revenues are still flat. In this particular case, trying to understand and act upon the whole by tinkering only with parts has seriously backfired. Yet, in order to take organizational learning to the level of systemic awareness and sensitivity, business leaders will likely have to unlearn what they know about understanding and managing their organizations from the perspective of the parts, irrespective of the whole.

2.3. The Illusion of Control

Most of Twentieth Century management science has been built upon the foundational assumption that the function of management is to control the organization. Efficiency and productivity were held to be the result of systematic application of the methods of scientific management. Hence, many managers feel that their primary mission is one of control. For instance, a VP seeking to control a complex, multi-million dollar inventory system, may institute statistical procedures for counting and managing inventory. Lower-level managers learn rapidly what variables are being tracked and manipulate the analysis so that their departments continue to look good. The slides go up and the numbers are impressive. The VP goes to lunch quietly congratulating him or herself for being so clever. Meanwhile money is cascading out of every warehouse bay.

What this story illustrates is that there is an organizing pattern in this VP's inventory system, and that he or she has neither a clue to what it is nor any control over it whatsoever.

One effective way for lower level managers to control their stress level is to assist the senior manager in experiencing the illusion of control. The pattern of thinking, speaking, and listening that results when everybody is invested in the illusion of control can be seen as a self-perpetuating cultural system. People come and go, different stresses arise, yet this system, through the coordinated conversation of all participants, retains its unique organizing pattern, seeming to have a hidden life of its own.

As a result of our assumption that management is embodied in the control of numbers, people, and processes the likelihood of a self-determined order arising from within work processes is eliminated. Yet, as we learn from biology (Maturana and Varela, 1980) and from the theory of management cybernetics (Beer, 1985), the design of self-organizing, autonomous systems requires the absence of one-way control from outside of the system. These authors specify, at least in a metaphorical sense, the architecture of self-organization for autonomous systems. Among the characteristics of self-organizing systems applied to work group design are the following attributes:

1. The capacity of the work group to specify and adjust its own performance goals
2. The capacity of the work group to monitor its environment, which includes both the rest of the organization and the world outside of it
3. The capacity of the work group to measure its output against its own specified performance goals
4. The capacity of the work group to alter its own structure in case its output fails to meet its own performance goals
5. The capacity of the work group to remember its developmental history so that it may learn from its own experience

6. The capacity of the work group to specify and create its own boundary within which its identity holds

It is possible to imagine a company in which the people responsible for the various processes are entrusted with the conscious design of their own self-organizing processes, exhibiting healthy operation within the context of the whole. For this to have an opportunity to emerge, senior and junior managers must unlearn a cornerstone of their management training: that their job is to be in control.

2.4. The value of winning, not losing, and of being right

One of the most fun training exercises I've seen is the well-known arm-wrestling experiment. Participants pair off and are given 15 seconds to "win as many times as possible." Though I conduct this as a thought experiment, without any actual contact, the lightbulbs seem to go off just the same. Overwhelmingly, participants report that they imagine forcing their partner's arm to the table, maybe two or three times during the 15 seconds. They are astonished to learn that it could be possible to experience up to 30 "wins" if both worked together to score alternating wins with a rapid, windshield wiper action. The mental model most participants unconsciously bring into this simulation is that of competition, in which one wins and one loses.

In the tumult of organizational life individuals who emerge as "leaders" are often the individuals who win most often. Winning conspicuously, especially in the clutch with a lot riding on success or failure, gives individuals a track record of "leadership" that usually paves their way to the executive suite. Even before we enter business, and from the time we are children, we compete with one another for privileges and honors that can go to only a few. Later, as managers, we take "assertiveness" training to increase our skill at standing our ground. Often, as in the arm wrestling experiment above, our concept of winning entails another's loss. We may conclude, as has Chris Argyris (1993), that "win, do not lose" is a key value driving much of our behavior, organizational and otherwise, whether we know it or not.

Closely associated with such driving values are the behavioral strategies we frame to satisfy them. The value “win, do not lose” is associated with action strategies such as, “own and control the task” and “unilaterally protect self and others,” according to Argyris. Another action strategy, stemming from the work of Fernando Flores, that is deeply rooted in our mental models is: “always be right and look good in the process.” It is not difficult to remember episodes in which we or others have gone to extremes of shouting on behalf of our investment in being right about something. At the same time, a consolation for losers in organizational conflict is that they get to be right (usually privately) about what monsters those are who manage to prevail. Tracy Goss (1996) tells us that the drive to win and be right is deeply rooted in our human nature, and that we are not likely to leave this legacy behind.

If winning, tooth and nail competition, and being right are so deeply institutionalized in our organizational thinking and behavior what are we to do? Apparently, simply admonishing ourselves and others to act on correct principles isn't sufficient. More is needed if we are to transform our thinking and behavior. Argyris has theorized that when we act in ways that violate our espoused values we are actually, expertly, enacting a different set of values than those we espouse. This different set of values, which includes “win, do not lose,” is a default deeply programmed into our mental models and we are largely unaware of it. His approach to behavior change revolves around action learning to rebuild automatic behaviors that flow from our espoused values, and not from our default values. But what is the relationship of values to behavior?

Drawing on cybernetics, the science of purposeful systems, we can begin to see how powerfully values inform our behavior. Moreover, we can begin to see a pragmatically useful way of using the cybernetic model of values and behavior to help us grow beyond the need to win and be right. A diagram of a cybernetic system is shown in Figure 2.

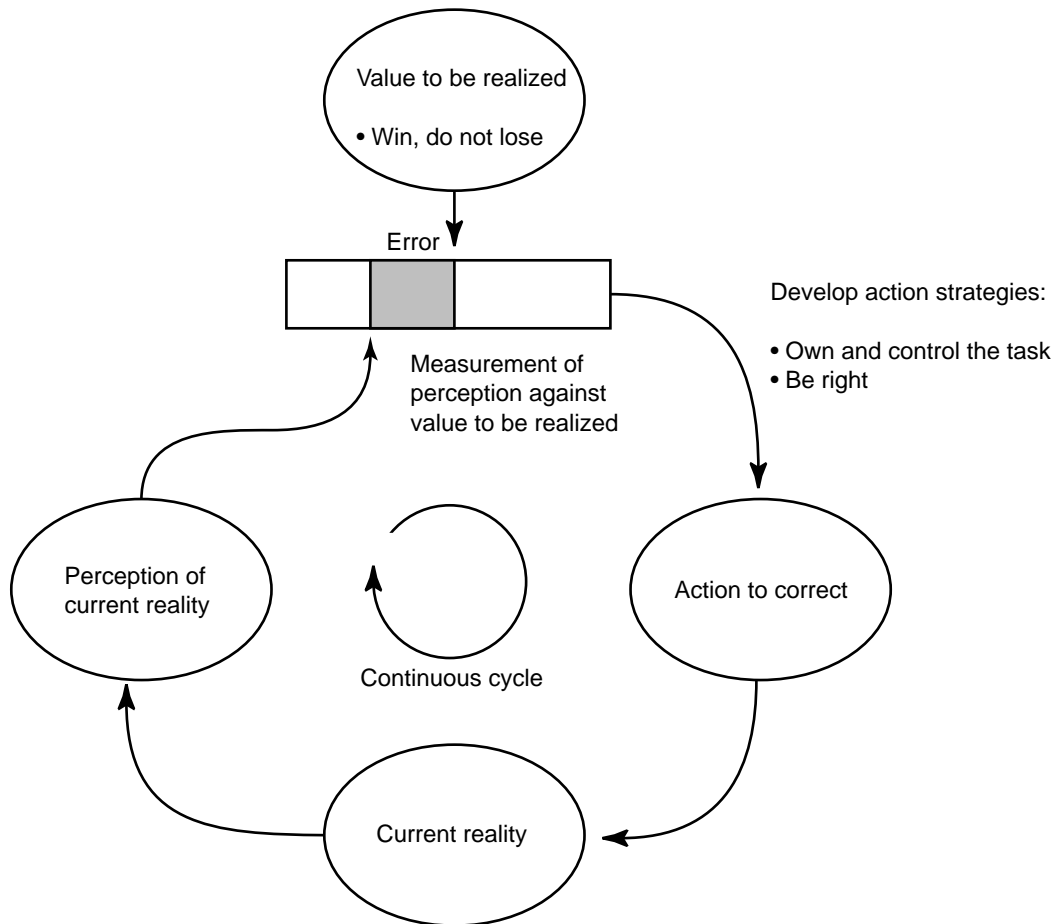


Figure 2 (Adapted from William Powers, 1974)

This system behaves with a purpose and is capable of achieving some goal. The goal or governing value, may be determined either within the system or outside of it. The behavior of the system is completely explained by seeing its action as the continuous process of adjusting its perception to within an acceptable approximation of the goal, or value to be achieved. Once perception matches the goal or value, no more behavior occurs. A typical system of this sort is a thermostat. We set a target temperature and the system dutifully, because of the way it is structured and it's capacity for action, brings about the desired room temperature. Another type of cybernetic system is a continuous improvement team at work. Usually it sets its own goal for what it wants to achieve.

If we now imagine our mental models as little cybernetic systems of values, strategies, actions, perceptions, and measurements—essentially Piaget's self-equilibrating

cognitive structures (1985)—then we can see the power commanded by their governing values. Argyris suggests that if we consciously rebuild our mental models by replacing default values that inhibit learning with those that support it and then, by trial and error, acting out new behavioral patterns that more closely realize those values, we may be able to act and communicate more effectively. A key mark of this new effectiveness is that we lapse less frequently into defensiveness and that we trigger it less often in others.

The usefulness of this perspective is in how likely it is to help us bring to the surface our default dispositions to win, be right, and look good in the organizational conversation. Further usefulness will be marked to the extent that this approach can help us unlearn, through continuous practice, some of the most powerful behavioral schemes that we have programmed within us. The consequences of this unlearning for the conversation are likely to be that we will exhibit less defensiveness, withdrawal, cynicism, groupthink, fear, aggression, and hidden resentment. There is likely to be more conflict of a productive type, more sharing of valid information, and more free and informed consent to and ownership of conversations for learning, action, and results.

3. *Conclusion*

The questions addressed in these pages are: what is the role of conversation in organizational learning, and what obstacles may we find in our current conversation that may invisibly and implacably prevent organizational learning? I have suggested that the conversation itself determines our perceived reality and the distinctions we make within it, and that these distinctions feedback to reinforce the meanings in our conversation, in a reinforcing system that Peter Senge identifies in the *Fifth Discipline* with a snowball falling down a hill, getting larger and larger and more out of control. This conversation, and the knowledge it declares useful, can be examined for its congeniality to organizational learning.

Some key archetypal elements of most conversations that inhibit organizational learning are discussed. These are:

1. The deployment of conversation for the purpose of transmitting facts
2. Learning about something by dismantling it and studying the parts
3. The illusion of control
4. The value of winning, not losing, and of being right

We have viewed these obstacles from the perspective of the new sciences of complex, self-organizing systems and cybernetics. We have also examined the relevance to this angle of inquiry of some powerful new directions in social science and organizational behavior in the work of Chris Argyris and Fernando Flores.

Hopefully, if we can learn to be as graceful in continuous unlearning as we wish to be in continuous learning, our conversations will become more powerful than we can imagine.

4. Bibliography

- Argyris, Chris. 1990. *Overcoming Organizational Defenses*. Boston: Allyn & Bacon.
- _____. 1992. *On Organizational Learning*. Oxford: Blackwell.
- _____. 1993. *Knowledge for Action*. San Francisco: Jossey-Bass.
- _____. 1994. "Good Communication That Blocks Learning," *Harvard Business Review*. (July-August): pp. 77-85
- Argyris, Chris, and Donald Schön. 1974. *Theory in Practice*. San Francisco: Jossey-Bass.
- _____. 1978. *Organizational Learning: A Theory of Action Perspective*. Reading, MA.: Addison Wesley.
- Argyris, Chris, Robert Putnam, and Diana Smith. 1985. *Action Science*. San Francisco: Jossey-Bass.
- Beer, Stafford. 1985. *The Heart of Enterprise*. NY: Wiley.
- Checkland, Peter, and Jim Scholes. 1990. *Soft Systems Methodology in Action*. New York: Wiley.
- Goss, Tracy. 1996. *The Last Word on Power*. New York: Doubleday.
- Maturana, Humberto and Francisco Varela. 1980. *Autopoiesis and Cognition*. Boston Studies in the Philosophy of Science, vol. 42. Dordrecht: D. Reidel.
- Piaget, Jean. 1985. *The Equilibration of Cognitive Structures*, Translated by Terence Brown and Kishore Julian Thampy. Chicago: University of Chicago Press.
- Powers, William. 1973. *Behavior: The Control of Perception*. Chicago: Aldine.
- Schein, Edgar. 1992. *Organizational Culture and Leadership, Second Edition*. San Francisco: Jossey-Bass.
- Senge, Peter. 1990. *The Fifth Discipline*. New York: Doubleday.
- Senge, Peter, Rick Ross, Charlotte Roberts, Bryan Smith, and Art Kleiner. 1994. *The Fifth Discipline Fieldbook*. New York: Doubleday.
- von Bertalanffy, Ludwig. 1968. *General Systems Theory*. New York: Braziller.
- Wheatley, Margaret. 1992. *Leadership and the New Science*. San Francisco: Berrett-Koehler.
- Winograd, Terry and Fernando Flores. 1985. *Understanding Computers and Cognition: A New Foundation for Design*. Norwood, NJ: Ablex.