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Learning Organizations Part 10: Systems Thinking — The Whole and the Parts by Marilyn Herasymowych, MCE

“The old metaphor was one of a machine, of components that operate in a linear fashion and outcomes that are predictable. The new metaphor is one of a living organism — extremely complex, unpredictable, and interconnected to other organisms.”

— Jerold Apps, *Leadership for the Emerging Age* (1994)

The concept of systems thinking requires us to change from thinking in mechanistic ways to thinking in systemic ways about organizations and learning. To Senge, systems thinking is not just the fifth discipline, *it is the most important discipline*. Each of his two books is titled **The Fifth Discipline**, and in

each of these books, Senge talks first about systems thinking. You need to be able to think *systemically* in order to appreciate the interrelatedness of the other four disciplines. Senge defines systems thinking as “a way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behaviour of systems. This discipline helps us see how to change systems more effectively, and to act more in tune with the larger processes of the natural and economic world” (1994, pp. 6-7).

Senge uses the metaphor of an elephant to describe systems thinking. When we practice systems thinking, we look at the parts of the elephant *within the context of the whole elephant*. If the elephant’s leg is injured, we study the injury and the leg by looking at

how it interacts with the other parts of the system, known as the whole elephant. In contrast, our current mechanistic way of thinking requires us to cut off the elephant’s leg in order to isolate it for study. Too often, when we cut off the leg, we are completely unaware of the impact of our decision and our actions on the elephant.

A more concrete example can be found in employee discipline problems. When an employee’s performance is suffering, supervisors and team members usually blame the employee. This type of thinking is highly mechanistic, because it cuts off the employee from the larger context, much like cutting off the leg of the elephant. The *problem employee* is isolated for study.

This isolated study provides the remedies for this problem employee.

These remedies seldom consider deeper root causes of the problem, embedded in a larger system. For example, if the employee is not showing commitment to his or her work, it may be due to the lack of a shared vision on the part of the organization and the team. If the employee understood, and could buy into, a shared vision, he or she might become highly committed to the work. Or, if the employee does not speak up at team meetings, it may be due to a lack of loyalty to the truth on the part of the team. If the team openly valued loyalty to truth, the employee would know that he or she could speak up, and disagree with the prevailing point of view, without punishment. As a result, the employee might consistently participate in, and add value to, team meetings.

Systems thinking always examines a problem or set of events in a *holistic* context. Senge says, "A good systems thinker, particularly in an organizational setting, is someone who can see four levels operating simultaneously: events, patterns of behaviour, systems, and mental models" (p. 97).

An article in **The Western Producer** (July 6, 1995), demonstrates these four levels. Two berry farmers had a problem (*event*): how to get enough water for their U-Pick berry farm. They looked at the most obvious solution, which was to use the local water supply. They considered the long-term effects of this decision, and recognized that this *pattern of behaviour* would eventually drain the local water supply *system*.

Then they tried to collect water in a plastic-lined dugout, but found that the dugout collected a lot of dirt, seeds, and insects, and grew large

amounts of algae, which contaminated the water (more *events*). They questioned this *mental model* and researched alternative solutions to this problem. They discovered an ancient water system, used centuries ago by Natives in the southwestern United States. The berry farmers built and installed the ancient water *system* on their farm (*event*). This *system* now collects "2,100 litres of water for every millilitre of rain that falls," and does not use a drop of water from the local water supply (p. 19).

According to Senge, "The art of systems thinking includes learning to recognize the ramifications and trade-offs of the action you choose" (p. 91). This is much easier said than done. Systems thinking is a mental stretch for us, because we have been programmed since birth to think in ways that fragment and isolate problems from their sources. Jerold Apps, author of **Leadership for the Emerging Age**, says, "... most of us resist tampering with something as basic as how we think. The tendency is to continue doing as we have done in the past. We believe, most often erroneously, that with a little fine-tuning our current thinking ... will continue to serve us well. Some of it will; much of it will not" (1994, p. 18).

A holograph is a metaphor for the concept of systems thinking. When you look at a holograph, you see a three-dimensional image that is visible from many angles. If you use only a part of the holograph, you will still see the whole picture. However, you will have far less detail, and you will not be able to see the picture from as many angles.

Workplace learning is much like the metaphor of the holograph. As a leader in my company, I must gather the parts of the holograph from the

widest variety of sources. I must continue to challenge myself, to share what I learn, and to demonstrate my knowledge through my actions. Each of the team members brings his or her own holograph; together they generate other holographs. People are often astounded by the insights and transformational learning that result from this process. Even when teams and individuals focus on a single task, they are aware of the larger context in which the task is being done.

"...Leaders for the emerging age are people with confidence, courage, and vision. ... Increasingly, leaders develop approaches that are unique to the contexts in which they work. ... [These] leaders view people as whole persons, striving to provide situations in which people can find meaning and can express their spiritual as well as their mental potential."

— Jerold Apps, **Leadership for the Emerging Age** (1994)

Further Reading:

For an introduction to systems thinking, read the following sections in **The Fifth Discipline Fieldbook**:

- *Brownie's Lamb*, pages 94-96
- *Systems Thinking in the Classroom*, pages 487-490
- *Strategies for Systems Thinking*, pages 87-96

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