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Systems Theory and Effective Leadership

> *It is not the strongest of the species that survive, nor the most intelligent, but the ones most responsive to change.*
>
> Charles Darwin

> *The most important role managers have at this time is to lead people through the transition from the industrial era to the information era, from the world of Newton to the world of chaos.*
>
> Toby Tetenbaum

> *Reality is made up of circles but we see straight lines.*
>
> Peter Senge

Introduction

In his classic book on systems theory, *The Systems View of the World*, Ervin Laszlo writes, "If you want to change the world … you have to understand the nature of this world … you must choose an empirical concept for your understanding – one that is based on how human beings interact with the world around them." (1972: pp. v – vi). Like Laszlo, systems theory is the paradigmatic lens through which I, among many others, view phenomenon, including the concept of leadership. Leadership based on the understanding of the systemic nature of the universe is in stark contrast to leadership based on a reductionist, linear view that emphasizes control and command and prizes order and stability.

The Story of Lines and Circles

Theories of leadership mirror society's broader theories of how the world works. In the European world view, during the 16th through 18th centuries, theorists such as René

Descartes (1596 – 1650) and Sir Isaac Newton (1643 – 1727) pioneered the life-as-machine paradigm: all phenomenon could be reduced to discrete parts that operated through linear, pre-determined causes and effects. In this era, leadership roles were bestowed by birth and by God and best maintained by the harsh methods famously advocated by the Italian politician Niccolò Machiavelli (1469 – 1527) who believed that deceit and manipulation were ideal management tools. "Whoever desires to found a state and gives it laws, must start with assuming that all men are bad and ever ready to display their vicious nature, whenever they may find occasion for it." People are bad, stability is good and unyielding power rules.

The Industrial Revolution of the 18th and 19th centuries transformed Western society through the emergence of manufacturing and industrialization. Rural life, which had dominated society throughout history, began to be replaced by urban life. Natural rhythms began to be overshadowed by industrial rhythms. With the linear nature of phenomenon and the concept of man as machine firmly planted, leadership emphasized speed and efficiency.

Frederick Taylor (1856 – 1915), a pioneer in the science of efficiency, formalized *Scientific Management Theory*. Based on the linear, mechanistic view of the world – and of people – Taylor believed leaders main purpose was to plan and control. He advocated the identification and development of the *one* most efficient way to perform discrete tasks and the most well-equipped worker; the constant, close supervision of workers; and motivation through reward and punishment. The point was to find the way to get from Point A to Point B with as little perceived effort, resources and time as possible and then do it again and again and again. In the relatively simple industrial organizations of his day, Taylor was able to increase production – but at the cost of dehumanizing and demoralizing a large part of the workforce.

Taylor's underlying assumptions about workers can be seen in his often-quoted statement that "Hardly a competent workman can be found who does not devote a considerable amount of time to studying just how slowly he can work and still convince his employer

that he is going at a good pace." Contrast this view of the employee with that of the systems thinker, Margaret Wheatley. "People organize together to accomplish more, not less. Behind every impulse is a realization that by joining with others we can accomplish something important that we could not accomplish alone. And this impulse to organize so as to accomplish more is not only true of humans, but is found in all living systems. Every living thing seeks to create a world in which it can thrive. It does this by creating systems of relationships where all members of the system benefit from their connections. (1997: p. 22).

The political economist Max Weber (1864 – 1920) complimented Taylor with his *Bureaucratic Theory of Management*, which advocated clear (linear) lines of authority, a hierarchical (paternalistic) power structure, strict division of labor, and the avoidance of ambiguity. Leadership based on command and control was the ideal. Order must be imposed from above. There was no room for the idea that productive order could emerge from within or that fluidity and flux could be generative.

Many of the basic tenants of this mechanical view of the world and of leadership unfortunately still resonate today. Economic gain is still too often seen as the only work incentive and employees are still too often controlled and manipulated. Organizations are still too often seen as existing in hostile environments from which they must be defended. Stability and uniformity are still stressed, and uncertainty and change avoided (or poorly handled). Strict divisions between leaders and those they lead are common. Employees are still compartmentalized. As Margaret Wheatley observed, this view is dominated by the idea that the universe "cannot be trusted with its own processes for growth and rejuvenation. If we want progress [in this view] then we must provide the energy to reverse decay." (1999: p.19)

In the 1920s, the biologist Ludwig von Bertalanffy (1901 – 1972) formally introduced the idea of *general systems theory*. Many writers have added to the literature on systems theory; almost every review of the evolution of systems theory takes a slightly different path. The following are a few pertinent names in the history of systems theory; there is

not space in this paper to name all those that have contributed to the field. The idea that the world is self-organizing and fundamentally interconnected was elaborated upon by theorists such as Thomas Kuhn (1922 – 1996), Gregory Bateson (1904 – 1980) and David Bohm (1917 – 1992), as well as contemporary thinkers such as Ervin Laszlo. The connection between Eastern religious and philosophical thought and systems theory are explored in books such Joanna Macy's *Mutual Causality in Buddhism and General Systems Theory: The Dharma of Natural Systems*, Fritjof Capra's *The Web of Life: A New Scientific Understanding of Living Systems*, and Gary Zukav's *The Dancing Wu Li Masters*. John Heider's book, *The Tao of Leadership: Lao Tzu's Tao de Ching Adapted for a New Age* captures the 5th Century B.C. Chinese sage's innate understanding of the systemic nature of the universe and its role in effective leadership.

In the 1970s, F. E. Kast and J. E. Rosenzweig formally applied general systems theory to management theory in their "*General Systems Theory: Applications for Organizations and Management*." In their "*The Modern View: Systems and Contingency Concepts*," Kast and Rosenzweig wrote

> There are several key characteristics of organizational systems. They are not natural, like physical or biological systems, but are *contrived*. There are boundaries that separate the organization from its environment. Open systems display growth through internal elaboration. They tend to move in the direction of greater differentiation and to a higher level of organization. Finally, open systems have the characteristic of equifinality – objectives may be achieved with varying inputs and in different ways. The organization can be viewed as an open system in interaction with its environment and composed of five primary components: goals and values, and technical, structural, psychosocial, and managerial subsystems. (p. 120)

Two of the most prominent contemporary theorists on systems theory and leadership are Peter Senge and Margaret Wheatley. Senge, who was trained as a psychologist and founded The Center for Organizational Learning at MIT's Sloan School of Management, approaches the issue of systems theory and leadership from an organizational development viewpoint. In his book, *The Fifth Discipline: The Art and*

Practice of the Learning Organization, Senge writes "… the unhealthiness of our world today is in direct proportion to our inability to see it as a whole." (1990: p. 68). Systems thinking, according to Senge, "is a conceptual framework, a body of knowledge and tools that has been developed over the past fifty years, to make the full patterns clearer, and to help us see how to change them effectively. Though the tools are new, the underlying worldview is extremely intuitive." (1990; p.7)

Margaret Wheatley, in the vein of Macy, Fritjof and Capra, combines quantum physics with cosmology, theology, chaos theory and fractal design to form her systemic theory of leadership in books such as *Leadership and the New Science: Discovering Order in a Chaotic World.* Wheatley takes a nurturing approach to systems theory and leadership, believing we "have to learn how to support the workings of each other, to realize that intelligence is distributed and that our role is to nourish others with truthful, meaningful information." (1999: p.102)

General Systems Theory

General systems theory is a holistic, process-oriented model of the universe in which all parts are mutually affecting. As noted, it stands in sharp contrast to the traditional linear, mechanistic model in which the universe is reduced to an assemblage of unrelated entities operating acausally where there is only one discreet cause for every event. According to systems theory, everything is fundamentally interrelated and input into one aspect of a complex system will affect other aspects of that system which will in turn affect other aspects of the system and so on and so forth. In addition, complex living systems are composed of smaller systems and are in turn imbedded within larger systems – the idea of nested hierarchy or holonarchy. The ripple effect inherent in system responses also impacts the systems of which the original system is an integral part. Systems are thus circuits of information flow. The circuitry of a system involves the reception of input from the environment, the perception of that input in reference to existing codes, and finally, the system's response.

Two fundamental properties of complex living systems are that they are self-organizing and self-regulating. Both self-regulation and self-organization occur through information processing via feedback loops. What is called “negative feedback” reinforces the structure of the system, while “positive feedback” leads to reorganization. At times both negative and positive feedback can also lead to the disintegration of the system.

Complex systems process and edit information against internal codes, which have evolved within each system. Codes can be biological or societal, or a combination of both. In all cases codes are essentially the means of evaluating and thus relating to ongoing developments in other systems. Codes are how complex systems edit the immense amount of information flowing continuously through and between interrelated systems. This process of self-regulation and self-organization through information processing is evident in the complex systems that are human beings and within the societal systems they create and operate within. Humans are open systems operating within multiple open systems. Information is generated from our body and mind’s interaction with other systems including our unconscious systems, other human beings, and our ecosystem. As Joanna Macy has observed, “a person is an irreducible and dynamic whole, in open interaction with her world, sustaining and organizing herself through appropriation, transformation, and differentiation of meanings and symbols” (1991: p. 80).

Human interactions occur within systems within systems. Action, response, action, response. Humans and their societies are webs of interactions. Some external information matches the internal code under which a system operates. This information is called negative feedback and it leads to stasis within the system. Positive feedback, on the other hand, is information that does not match with a system’s perceived code, thus, it causes change within the system. Another essential property of systems is that when positive feedback forces them to reorganize, the resulting new systems are more complicated and more diverse than their predecessors. While one could thus say that

evolution moves towards increased complexity and diversity, on the one hand, on the other hand, there is also a tendency towards unity.

Leading in Open Systems

In the last fifty years or so, there have been unprecedented changes in society, technology and in the workplace. In *The Systems View*, Peter Schoderbeck et al wrote

> A half century ago organizations were not as complex as they are today … Today the complexities include global and multinational firms, vertical integration, intense competition for limited resources, rapid technological change, extensive governmental regulations, and increased impact of governmental decisions that complicate the structures. Dealing with such complexity called for new approaches … The increasing complexities of various modern-day projects make it impossible to look for isolated solutions to problems." (1972: p. 8 – 9)

Traditional theory viewed organizations as closed systems. Workplaces had hard boundaries separating them from a mostly hostile environment. As Daniel Katz and Robert L. Kahn have noted, however, "Thinking of the organization as a closed system … results in a failure to develop the intelligence or feedback function of obtaining adequate information about the changes in environmental forces." (1978: p.27). An open system, such as an organization, must change in order to maintain itself in a dynamic environment. Receiving input from the environment is essential if an organization is to be able to respond effectively to its ever-changing environment.

An organization cannot be understood without considering the information-generating environment in which it operates. Instead of being fundamentally discreet entities, an organization and its environment co-create their relationship (as noted above, systems operate within systems within systems). Just as systems theory recognizes that an organization is not fundamentally separate from its environment, systems theory does not allow the employee to be seen as fundamentally separate from the organization – or from one another. A workforce is by definition composite. When seen systemically, a workforce can be clearly seen as a network. Hindus and Buddhists refer to *Indra's Net*, a

jeweled web that canopies the heavens in which each every jewel completely reflects every other and the net as a whole, without end. Employees work in a web of relationships, relationships that should be encouraged and allowed to evolve and transform as needed.

The principle of self-organization is key to leadership through systems thinking. When leaders have faith in their employees' ability to absorb and process information, they are more willing to accept the idea that employees can self-organize in order to better adapt as needed. According to Wheatley, organizational systems are "process structures" (1999: p. 82) that can reorganize themselves or evolve to a new order, depending on circumstances. "The potent force that shapes behavior in these organizations and in all natural systems is the combination of simply expressed expectations of purpose, intent, and values, and the freedom for responsible individuals to make sense of these in their own way. " (1999: p. 129)

Systems theory includes the concept of *organizational intelligence*. Information (feedback) can come into an open system from any direction, not just from the top or through preconceived channels. It is essential to have employees – at all levels – who are willing, capable and encouraged to be receptive to information that enters the system. As Margaret Wheatley notes, "the greater the ability to process information, the greater the level of intelligence." (p. 98). When leaders allow information to move freely, information will have multiple observers and multiple interpretations, leading to a richer, healthier and more resilient workplace.

An important principle that characterizes all open systems is that there is not one single correct route for achieving an objective. In contrast to Taylor's emphasis on leaders finding *the* most efficient way and *the* most well-suited and efficient worker, systems theory's *principle of equifinality* proposes that systems can reach the same final state from different initial conditions and by different paths. As noted above, leaders must be open to employees self-organizing around new ideas. Leaders should not search for the

one best method, they should be searching for new ideas and open to risks, trials and errors. According to Margaret Wheatley, "The things we fear most in organizations – disruptions, confusion, chaos – need not be interpreted as signs that we are about to be destroyed. Instead, these conditions are necessary to awaken creativity." (1999: p. 21)

Systems, Leadership and Emotional Intelligence

In his 1990 article, "What Leaders Really Do," John P. Kotter wrote, "Since change is the function of leadership, being able to generate highly energized behavior is important for coping with the inevitable barriers to change. Just as direction setting identifies an appropriate path for movement and just as effective alignment gets people moving down that path, successful motivation ensures that they will have the energy to overcome obstacles." (p. 47).

How does a leader "generate highly energized behavior" in an open system? According to the psychologist and writer Daniel Goleman, leaders do so by cultivating their emotional intelligence. Goleman is known primarily for his 1995 bestselling book, *Emotional Intelligence*, which included a chapter on "Managing with Heart." In 2002, the Harvard Business School Press published *Primal Leadership: Learning to Lead with Emotional Intelligence*, which Goleman co-wrote with Richard Boyatzis and Annie McKee.

Goleman, Boyatzia and McKee believe that

> Throughout history and in cultures everywhere, the leader is any human group has been the one to whom others look for reassurance and clarity when facing uncertainty or threat, or when there's a job to be done. The leader acts as the group's emotional guide … Great leadership works through the emotions … Understanding the powerful role of emotions in the workplace sets the best leaders apart from the rest – not just in tangibles such as better business results and the retention of talent, but also in the all-important intangibles, such as higher morale, motivation, and commitment. (2002: p. 3 – 5)

According Goleman, Boyatzia and McKee, the fundamental components of emotional intelligence as related to effective leadership are self-awareness, self-management, social awareness and relationship management. It is important to note that two of the four components are inwardly looking (self-awareness and self-management) while two are outwardly looking (social awareness and relationship management). As Joanna Macy has observed, a "system ... is Janus-faced: as a whole it faces inward, as a subwhole it looks outward." (1991: p. 77). An emotional effective leader needs to have an awareness of him or herself as a system (a body) within another system (an organization) within another system (a professional field, a city, state or country, for example) within a larger system (the natural environment) etc. etc. And, of course, there are nearly endless systems that overlap and interplay: small work groups, families, circles of friends, religious or political societies, etc.

The ability to see the world systemically can be learned. Perhaps organizational leaders do not need to go as deep into the science and philosophy of general systems theory as the authors mentioned in this paper. They do not need to be concerned if they don't feel "one with the universe," But according to Peter Senge:

> The subconscious [can be] subtly retrained to structure data in circles instead of straight lines. We find that we 'see' feedback processes and systems archetypes everywhere. A new framework for thinking becomes embedded. A switch is thrown, much like what happens in mastering a foreign language. We begin to dream in the new language, or to think spontaneously in its terms and constructs. When this happens with systems thinking, we become, as one manager puts it, 'looped for life.' (1999: p.366).

Conclusion

Much of today's writing about organizational leadership says that the traditional, linear way of looking at the world worked in its day. The reasoning goes that we are in a more complex world now, and so we now need to see the world through the lens of more complex theories. I would argue that judging from the state the world is in today, the linear view of the world never "worked." The linear view of the world underpins, I believe, much of the destruction that has taken place on the planet so far.

The great leader, Mahatma Gandhi, believed that the only sin is "attavada," the sin of separateness. I would say that the fundamental flaw in the history of the world is its (our) failure to see the interdependence of all our actions. Another great change-agent, Dr. Martin Luther King, wrote, "He who works against community is working against the whole of creation … because creation is so designed that my personality can only be fulfilled in the context of community."

In *Mutual Causality in Buddhism and General Systems Theory*, Joanna Macy writes:

> … On the basis of mutual causality as it appears in general systems theory [that] certain normative values become evident. Ways in which life should be lived appear as intrinsic to such an order of things … [our] nature is profoundly participatory in that of other beings … Not only are our raw materials … derived from a shared environment, but the very patterns we make of them are woven and textured by relationship. In such a state of affairs we are, quite literally, part of each other – free neither from indebtedness to our fellow-beings nor responsibility for them.

I believe that all organizations and all leaders must embrace this systemic view of community and encourage a deep understanding of how each of us is co-created by others. Effective leaders must first look inward, and then they must look outward into the organizations they co-create. Most importantly, I believe, true leaders must look beyond their immediate circles to the totality of Indra's Net.

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