

# **THE IMPACT OF LEADERSHIP IN APPLYING SYSTEMS THINKING TO ORGANIZATIONS**

**Brian Martens**

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## **ABSTRACT**

Leadership plays a key role in bringing systems thinking into organizations and can foster or inhibit systems ideas being adopted. When leadership influences people to take a new look at the organization as a system, the people within the organization begin to see their relationships differently. They pay attention to how every thought and action affects everything in the organization and in their lives. Like the natural world, people start to look and think with a broader and deeper vision and realize how they depend on the relationships around them.

This paper focuses on the impact leadership is having on systems thinking in organizations, inspired by what the new sciences are finding out about systems and the impact of systems thinking in schools. Thinking systemically is a process that can begin at any point or level in an organization and is a much larger idea than I originally thought. Systems thinking is a natural way to look at the world and all the relationships and interconnectedness that are involved in its functioning.

Data were gathered from current practitioners and consultants who have an understanding of systems thinking and the impact it can have on organizations. These individuals bring their own skills and talents in the application of systems thinking to the clients and organizations they work with and show that thinking systemically can bring a new awareness, energy, and vitality to the work.

## **INTRODUCTION**

This paper is about systems thinking; the impact it has on organizations, groups, and individuals; and the leadership necessary to bring systems thinking into organizations. A systems approach looks at all the interconnections and relationships in the problems or opportunities that are confronting the group or organization. In addition it also emphasizes participation and inclusion of all the parts of the system. I first became interested in systems thinking when I read about the impact systems thinking is having on school children, and then through further inquiry into the new sciences and leadership.

Innovative teachers are bringing systems thinking into their curricula and it is having a positive effect on student learning. Peter Senge's (1994) book, *The Fifth Discipline Fieldbook: Strategies and Tools for Building a Learning Organization*, describes the work of Frank Draper who has used systems thinking in his classrooms in Tucson, Arizona since 1990, and found systems thinking can revitalize the classroom. The systems approach allows students to learn how different parts of a subject are connected;

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for example, how biological and ecological systems are structurally and dynamically connected. Switching from the lecture approach to a participative systems approach, he found that students were more engaged in their own learning.

Since organizations are also systems, it would follow that people in organizations could also learn and become more productive through adopting systems thinking concepts and becoming more participative. As Senge (1994) suggests, “Once the workforce is participative in the design of their organization, change begins” (p. 489).

As I became more interested in learning about systems thinking, I wanted to define it. The word “system” comes from the Greek verb *sunistanai*, which originally meant “to cause to stand together.” To Senge (1994), “a system is a perceived whole whose elements ‘hang together’ because they continually affect each other over time and operate toward a common purpose” (p. 90). Examples of systems include biological organisms, chemical reactions, industries, factories, communities, families, teams, and all organizations. Organizations interested in thriving can adopt systems thinking principles and Senge (1994) believes that systems thinking is one of the core lifelong learning disciplines of organization development (OD).

Systems thinking is a way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behavior 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. (p. 6)

Since systems are about relationships, a system can be understood by contemplating the whole, rather than studying its individual parts. This is a move away from the reductionism of classical science, which sought to study systems by “reducing” them to their smallest parts. New sciences, such as quantum physics, chaos theory, and field theory, are using systems approaches to explore the mystery and vastness of natural systems and to understand their nested nature.

Margaret Wheatley (2006), in her book *Leadership and the New Science: Discovering Order in a Chaotic World*, brings insights from these new sciences into the discussion about systems thinking in organizations; she seeks to comprehend how the new sciences are informing the process of meaningful change in organizations:

To live in a quantum world, to weave here and there with ease and grace, we need to change what we do. We need fewer descriptions of tasks and instead learn how to facilitate process. We need to become savvy about how to foster relationships, how to nurture growth and development. All of us need to become better at listening, conversing, respecting one another’s uniqueness, because these are essential for strong relationships. The era of the rugged individual has been replaced by the era of the team player. . .The quantum world has demolished the concept that we are unconnected individuals. More and more relationships are in store for us, out there in the vast web of life. (p. 38)

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Facilitating processes, building relationships, and nurturing evolution are systemic approaches that organizations could draw on to sustain meaningful change.

An understanding of the systemic nature of the quantum world is adding to the old Newtonian beliefs on which most of our organizations are founded. Unlike the deterministic model of Newtonian physics, quantum reality is grounded in probabilities and relationships. Every observer of a quantum experiment finds himself or herself participating in the process, which shows the deep interconnectedness of the system. Every event, every interaction, whether it be the scientist watching an experiment, family members conversing around a table, or leaders of organizations seeking change, has an impact on the whole system.

None of us exists independent of our relationships with others. Different settings and people evoke some qualities from us and leave others dormant. In each of these relationships, we are different, new in some way . . . There is no need to decide between two things, pretending they are separate. What is critical is the *relationship* created between two or more elements. (Wheatley, 2006, p. 35)

Wheatley suggests that leadership has created problems for organizations by confusing control with order. Chaos theory has found that beyond the “not knowing what the system will do next” is an inherent orderliness over time. Organizations going through change need time to find the order that is emerging around them. By focusing on control, leadership has often missed the inherent potential for emerging order that exists within the system. If we assume that leadership alone can guide us by controlling our organizations, how can we tap into our inherent natural orderliness to bring vitality back to our workplace? People have a natural pace and way of doing things that resists control; leadership’s role is to inquire about how to achieve the necessary order to accomplish meaningful work.

I was inspired by Wheatley’s description of the new sciences and became very excited about the possibilities emerging in the relationship between the world of Organization Development (OD) and the new sciences. I wanted to explore how these ideas were shaping the interconnection between systems thinking and OD. As I began my research, I was inspired by Kurt Lewin, a pioneer in OD, who also influenced the field by his work in systems.

Lewin was an experimental social psychologist and one of the first systems thinkers. He noted that successful workers organized their work as a whole and recognized the benefits of an interactive system. Marvin Weisbord (2004) was a huge fan of Lewin’s work:

He [Lewin] taught that to understand a system you must seek to change it. This led to one of the most important managerial insights of the last century: diagnosis does not mean just finding the problem, but doing it in such a way as to build commitment for action. Lewin’s twin emphases on science and democracy form the philosophical base of participative work design and reorganization. (p. 77)

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Lewin knew intuitively that organizations depended on teamwork and dialogue. From the results of the University of Iowa's Child Welfare Research Station study conducted by Lewin in 1935, he recognized that the style of leadership had a significant impact on how people learn. In his work with children's groups, studying group experience and achievement, he discovered that democratic leadership was superior to autocratic leadership. Drawing from Lewin, both systems thinking and OD rely on democratic participation as a systemic approach. Connecting Wheatley's concepts of systems and Lewin's observations on leadership, I continued to explore how enlightened leadership can bring systems thinking into today's organizations to make the difficult changes that are necessary for vital and creative work.

I believe this topic is important because everyone on the planet is swimming in the same environment. My assumption is that thinking about the whole will lead us to the realization that we are interdependent and, by understanding the whole, we can foster a willingness to ask questions about how and why everything affects everything else. Instead of focusing on specific organizational or individual problems, leadership can start to understand the interrelatedness between the individual and the organization. Systems thinking can help organizations understand their processes, realizing that change can take time, small changes can have large impacts, and learning self-organizing teamwork benefits the system. Systems need time to change and natural processes cannot be manipulated. Systems are interconnected, so any change can have a large impact, because it can impact the whole system, and as Lewin illustrated, participative teamwork is more efficient because it uses the participants' knowledge and expertise in coming to a solution.

My purpose was to find out how OD leaders bring systems thinking into their organizations, and what tools and interventions are beneficial in transferring the learning that one part of the organization might gain about systems to other groups and teams. I was excited about the research involved in this paper, and I wanted to know more about how a systems model will impact my OD practice. I hope that others interested in systems thinking will catch a glimpse of the possibilities that systems thinking can offer and that they will bring this holistic learning back to their families, groups, and organizations. This is written for those who are interested in a wider perspective where all acts, observations, and interventions make a difference in the whole, where everything is interrelated and interdependent. This paper will also be useful for those organizations seeking systemic views of their leadership and processes, as it provides feedback from OD practitioners and leaders who have witnessed change as a result of systems thinking.

Growing out of my initial research, as described in the following Literature Review, I was interested in how leadership impacts the learning and application of systems thinking in organizations and groups. I was convinced that when organizations are viewed as a system, leaders in OD and leadership in organizations could facilitate change more effectively.

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### LITERATURE REVIEW

To frame the scope of my research in systems thinking, I explored three areas: how the new sciences relate to systems and systems thinking, the impact of systems thinking in schools, and leadership in systems thinking. These three categories fine-tuned my research, set the context for my questions, supported the analysis of the data I received from the interviews, and allowed for discussion of outcomes. This literature review is intended to foster an understanding of the topic, to show the research that has been done in the field, to define some of the terms in the field, and to prioritize the literature that has informed me most regarding my focus within the field. I will also bring up other viewpoints that have developed in the study of systems. The field of systems thinking is large and includes areas such as cybernetics, chaos theory, and gestalt therapy. It is an expanding field and new sciences such as quantum physics and the study of self-organizing systems have brought more information and exciting revelations to the field.

How the New Sciences Relate to Systems and Systems Thinking

Margaret J. Wheatley's (2006) groundbreaking book, *Leadership and the New Science: Discovering Order in a Chaotic World*, introduced me to the new sciences and how they relate to the systems world and informed me of other systems ideas and relationships: "In the quantum world, relationship is the key determiner of everything. Subatomic particles come into form and are observed only as they are in relationship to something else" (p. 11). Relationships and connections are parallel concepts for both the new sciences and systems thinking.

Wheatley (2006) describes how relationships are important in supporting James Lovelock's Gaia theory, which states that the earth is a self-regulating system. Also, in chemistry, Ilya Prigogine, who won the Nobel Prize in 1977, demonstrated that any open system has the capacity to respond to change and disorder by reorganizing itself at a higher order of organization. Disorder can actually provoke the system to reorganize:

This description defines a paradox that is important to note when we think about change: A living system produces itself; it will change in order to preserve that self. Change is prompted only when an organism decides that changing is the only way to maintain itself . . . Autopoiesis describes a very different universe, one in which all organisms are capable of creating a "self" through their intimate engagement with all others in their system. This is not a fragile, fragmented world that needs us to hold it together. This is a world rich in processes that support growth and coherence through paradoxes that we need to contemplate. (p. 20)

This information is helpful in supporting organizations and leaders that foster change, and can also have an impact on our schools interested in change.

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### **THE IMPACT OF SYSTEMS THINKING IN SCHOOLS**

Regarding the educational applications of systems thinking in education, Michael Fullan (2004), Professor of Policy Studies at OISE/University of Toronto, Canada, has written an article, “Systems Thinkers in Action: Moving beyond the Standards Plateau,” which concerns the need for systemic leadership in education:

Systems thinking in action runs the risk of being interpreted as a call for abstract diffuse action. Let us remember that the goal is to use applied systems thinking in the service of providing sustained, coordinated effort in order to go beyond specific existing plateaus. Part and parcel of systems thinking in action is focus, cohesion, evidence-based best practice, assessment and accountability. Above all, it means greater connectivity within and among levels of the system because cohesion involves bringing diverse elements together amid common principles and habits. (p. 13)

This style of dedicated leadership in schools is necessary to bring new concepts of systems thinking into daily practice. Fullan is aware of the connectivity within the system and realizes that all parts of the educational system need to participate in the daily work that could include administrators and families collaborating on changes in educational policies.

James Evers is another award-winning public school teacher and a co-founder of the Rockland Project School, a successful experimental private school based outside New York City. Evers recognizes that teachers need to move out from the front of the room into the role of guide and model helping students find and manage information they need or want. He suggests change can come through the practice of the following learning disciplines:

Using systems thinking as an incremental starting point is a powerful way to involve students in generative learning even at the kindergarten level. Starting with this small grassroots effort, students and teachers can gain the capacity to expose the points of leverage needed to reform the schools, from the inside out.

Weakening the stranglehold of fragmentation on curriculum and subject content so students can learn from different approaches by integrating more learning approaches.

Promoting dialogue between parents, bureaucrats, administrators, teachers, students, and government leaders will get all the participants in the system talking about the problems and solutions. Since each part of the system affects the whole system collaboration helps the participants understand the system. By suspending assumptions and treating each other as colleagues, the community as a whole can lead the reform (Senge, 1994, p. 492).

Evers realizes that using systems approaches in education can start the students on a more interactive path in their learning, and a dialogue with parents, teachers, and administrators can foster new perspectives by including all the parts necessary to integrate the changes.

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Taking these concepts beyond the educational system, it's evident to me that systems approaches can help organizations and institutions.

### LEADERSHIP IN SYSTEMS THINKING

Many in the field of systems thinking believe leadership is a key to introducing more systems thinking into organizations. Peter Senge (1985, 1994, 1996) is recognized as one of the leaders in systems thinking and has written about the importance of leadership in guiding this emergence. In *Systems Principles for Leadership* (1985), he explores the fundamentals of system dynamics through developing a practical approach to systemic thinking:

Such understanding requires an ongoing management education process. The objective of this education is to shift the style of thinking within an organization. In an organization intent on realizing its creative potential, fostering systems thinking is a chief function of leadership. (1985, p. 1)

He also believes that leaders in the future will be increasingly called upon to develop more systemic thinking in organizations:

Systemic thinking is integrative, synthesizing diverse viewpoints in order to understand the organization as a whole. It is structural thinking, focusing on the structure of the interrelationships among marketing, manufacturing, R&D, and finance that determine organizational success. Systemic thinking deals with "dynamics," showing how short and long-term consequences of management actions may be different, even in the opposite direction. In short, systemic thinking is "general management" thinking. As organizations distribute general management responsibilities increasingly broadly, the process of developing systemic thinking must be made more orderly and efficient than in the traditional authoritarian organization. (1985, p. 2)

Senge, along with many colleagues, has been working with managers and teams to develop enhanced learning capabilities: teaching systems thinking, improving mental models, fostering dialogue, nurturing personal vision, and building shared visions for almost twenty years. Since around 1992 his group at Massachusetts Institute of Technology (MIT) has developed a consortium of corporations, mostly Fortune 100 firms, that have been learning the theories and methods necessary to integrate these new capabilities into work settings. Within this framework Senge states:

The more we appreciate the inherent limitations of executive leadership in bringing about the change, the more frustrated we are likely to feel, given the immense need for change. While people often want the support of top management, they also don't want it telling them what to do. Resolving these dilemmas requires fundamental shifts in our traditional thinking about leadership. In brief, we are coming to believe that leaders are those people who "walk ahead," people who are generally committed to deep change in themselves and in their organizations. (1996, p. 3)

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From working with these organizations, Senge and his colleagues have categorized three types of leaders that must be involved in building learning organizations, roughly corresponding to the three types of organizational positions: local line leaders, executive leaders, and internal networkers or community builders. Senge concludes:

The challenges of systemic change where hierarchy is inadequate will, I believe, push us to new views of leadership based on new principles. These challenges cannot be met by isolated heroic leaders. They will require a unique mix of different people, in different positions, who lead in different ways. (1996, p. 9)

Author Alistair Mant (1997) also states in his book, *Intelligent Leadership*, that system thinking is an important part of leadership and is among his seven steps that lead to successful leadership: “A leader needs to focus on the particular while holding the whole and context in mind. The particular task is *what* to do; the context supplies the *why*” (p. 1).

Continuing with this research, William J. Reckmeyer (1994), Professor of Leadership and Systems at San Jose State University, says there is a lack of leadership in handling complex societal issues. In “Leadership: Critical features - Critical Futures,” he writes:

This [lack of effective leadership] has led to a greater interest in systemic modes of leadership, which involve treating issues as wholes that are substantially different than the sums of their parts and insisting on more comprehensive perspectives. Systems thinking emphasizes the constantly-changing nature of our world and recognizes that everything occurs through webs of interconnections . . . The heart of systemic leadership lies in enabling people to do just that, notably in terms of helping them work together strategically and collaboratively on behalf of the common good . . . No approach is a panacea, of course, but systemic modes of leadership offer considerable advantages over traditional ones because they discourage the single-minded pursuit of self-interest and promote the kinds of broader wisdom that produce enduring improvements. (pp. 11-12)

I researched two studies that evaluated the benefits of systems thinking. As Reckmeyer pointed out, systems thinking is not a panacea for the ills of organizations. Organizations have complicated problems and complicated cultures embedded within them. While systems principles can be beneficial, there are other factors and challenges that confront organizations in applying systems thinking. One study by Maani and Maharaj (2004) concludes:

The findings of this study suggest that the notion that systems thinking leads to better decision-making and hence to superior performance is rather simplistic. Our experience indicates that the story is much more convoluted. While the degree of systems thinking does matter, the results suggest that certain types of systems thinking maybe more relevant to superior performance. The “type” of systems thinking, however, is not the only factor responsible for performance in complex problems. The subject’s approach to the problem also appeared to be highly pertinent to task performance, as better performing subjects first attempted to gain understanding of the system structure, then



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developed and implemented strategies, and carefully assessed the outcomes of their decisions, in order to determine the validity of their understanding of system structure. (p. 46)

Another study by Hutz, Anderson, Richardson, and Boothroyd (1997), entitled “A Framework of Evaluating Systems Thinking Interventions: An Experimental Approach to Mental Health System Change,” presents a framework for evaluating systems thinking interventions. The new approaches to systems thinking have generated much interest in the clients of system dynamics studies and have been the foundation upon which a number of new consulting firms have based their practices. Nevertheless, much of their success has not been systematically evaluated. The following questions remain unanswered:

- Do organizational norms or operating procedures change after the organization undertakes a systems thinking intervention?
- Does the quality of services or products delivered to an organization’s clients or customers improve after systems thinking interventions?
- Do individuals who experience these systems thinking interventions change the way they think about the problem of interest after they participate?
- Does the overall profitability (for the private sector) or efficiency and effectiveness (for the public sector) shift in a measurable way due to these interventions? (Hutz et al., 1997, p. 150)

Although there were favorable comments by some of the participants of Hutz et al.’s study, the data suggests that the long-term impact of the intervention has not been measured. I realized systems interventions are complex because they involve people working with difficult problems in multiple contexts, which need time to adapt to the changes implemented.

Time delays and feedback loops are integrated into their thinking by systems advocates such as David W. Packer (2010), a founding partner of the Systems Thinking Collaborative and a veteran of the MIT Systems Dynamics Group, who believes that systems thinking can result in a sense of calmness, even optimism. Systems thinkers are grounded in certain characteristics that help them through difficult changes; the knowledge of time delays and feedback loops allows them to pause when reactions or events surface to throw them off balance. Systems thinkers know that understanding time delays is crucial in deciding whether an intervention is successful or not. We have to wait until there is enough feedback to gauge whether the intervention is helping or not. By understanding feedback loops, our thought process focuses on the cause of the difficulty and we start to ask questions about what action affects the problem so we arrive at better decisions and actions. In our current political arena, after the first stimulus to the economy was enacted, people were impatient to know whether it was working or not without waiting for important feedback from the economic indicators. System thinkers

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know that time delays are necessary and that waiting for appropriate data can take months or years. Impatient decision-making can stop good actions from developing into solutions and end in jumping to another quick fix that could do more damage in the future. Understanding these basic system concepts can help us accept that things may get worse before they get better.

As a result of the research, I narrowed the focus of my paper to the leadership in applying systems principles to organizations. What kind of leadership does it take to bring systems thinking into organizations? What kind of leadership fosters, encourages, and mentors systems principles in organizations? I wonder if leadership will have an important role in the application of systems principles and where that leadership component will surface within organizations.

### Methodology

I chose a qualitative, phenomenological research method to be able to explore the experience and impact that systems thinking has on leadership and those consultants who take on leadership roles in bringing systems thinking to their clients and organizations. A phenomenological study allowed me to study several individuals' experiences around a single idea, and supported the use of interviews as a source of data. A phenomenological study also gives the reader a sense of the meaning that systems thinking has for the interviewees. I used a qualitative method because:

In a qualitative study, you are interested not only in the physical events and behavior that are taking place, but also in how the participants in your study make sense of these, and how their understanding influences their behavior. (Maxwell, 2005, p. 22)

The process of collecting and analyzing the data began with conducting interviews and transcribing interviews:

I conducted 7 interviews (see Table 1 for participants).

I interviewed seasoned, active, local consultants who are familiar with systems thinking.

The interviews were taped and transcribed.

The data gathered were helpful in showing me how and why the participants' systems knowledge contributed to their practice or work.

I wanted to find out: 1) what type of consultant is interested in systems thinking; 2) how they were first introduced to systems thinking; 3) how systems thinking informs their consulting practice or organization; 4) the benefits they have derived from its usage; and finally; 5) how leadership affects systems thinking in organizations. The interviewees were asked the following questions:

What does systems thinking mean to you?

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How were you first introduced to systems thinking?

How has systems thinking contributed to your (consulting) practice?

What are the benefits?

What impact has systems thinking had on the organizations you have worked with?

What feedback have you received from colleagues and clients in relation to the application of systems thinking?

How has systems thinking transformed leadership in the organizations you have worked with?

From your experience, what is the best way to bring systems thinking into organizations? Do you have any personal stories?

In addition to the data from the interviews, I also used my observations from the data gathering process to inform the results. I input the interview data in an Excel document so I could organize it, filter it into themes, and collate it easily.

**Table 1.**

### *Participants*

Person	Title-Function	Industry, Description	Location
S.E.	OD Educator, Consultant, & Author	University-OD Program, Consulting	Sonoma County, CA
J.M.	President	Agriculture & Food Network Non-Profit Corporation	Sonoma County, CA
M.S.	Senior Manager-Internal, Human Resources	High-Tech, Global, Company	Sonoma County, CA
C.G.	Executive Director	Mediation Services, Small, Non-Profit Company	Sonoma County, CA

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W.R.	Professor of Leadership & Systems, Dept. of Anthropology; IES Senior-Fellow; International & Extended Studies Director SJSU Salsburg Program Consulting, Government, Policy, & Multi-national Corporations	State University  High-level Consultant	San Jose, CA  Worldwide
M.V.	Alliance Network Director	Agriculture & Food, Alliance Building	Sonoma County, CA
B.K.	Internal, Human Resources, Consultant	High-Tech, Global Company	Sonoma County, CA

### Limitations of This Research Design

The limitations in research included the fact that the interview participants are few (7) and most are located in Northern California. The respondents were generally well versed in systems thinking and had experience in consulting with organizations. Another drawback due to the limited scope of the research project is that I did not interview leaders or consultants who disliked systems thinking. These respondents may have given reasons for not being interested in systems thinking or reasons for not liking systems work, which could have portrayed systems thinking in a different light.

## RESULTS

### Summary

The interviews were informal and it was engaging for me to hear about the impacts systems thinking was having on organizations and the lives of the interviewees. I got to live in their world as they described the events that transpired in their stories. I was amazed at both the differences and similarities in their stories. All the participants spoke with relevance to the topic, which inspired me to continue the research with interest and passion. The individual responses to the questions spoke to the specific qualities that each brought to the discussion. I am grateful for their thoughtful participation.

The research findings are based on the following themes that emerged from the interview data:

Systems thinking is a holistic way to interpret relationships and complexity of the world (as a system).

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Systems thinking contributes to consultants' work by integrating core values that allow understanding of problems and opportunities.

Systems thinking is not a technique, model, or tool, but a way of engaging all parts of the system.

Once you start to understand, integrate, and apply systems thinking, the system improves.

The participants had a variety of perspectives on the role and nature of leadership.

In the following sections I will show the themes in relation to quotes from the participants.

### **Systems Thinking Is a Holistic Way to Interpret Relationships and Complexity of the World**

S.E.: Systems thinking as a way of thinking engages the ability to associate different things to find patterns in situations . . . there is an interactive process between the elements of the system.

M.S.: I don't think about it because it's embedded in the work. I can't change one part of an organization without the domino effect of how it's going to impact the others. It's a way of broadening the thinking.

W.R.: It's [a] way of dealing with the world both in terms of thinking and action . . . there are internal interactions and there are external interactions and all of those have an influence upon both the nature of the system and how it behaves.

C.G.: Systems thinking is a way of apprehending the totality of whatever the system is.

J.M.: I think it's basically the effort to understand things through their interrelationships, in particular, how pieces interact with each other in such a way that they affect the behavior of the whole. It's forcing the mind to think through multiple levels of interaction and interrelationship so that you can get closer to reality . . .

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### **Systems Thinking Contributes to Consultants' Work by Integrating Core Values That Allow Understanding of Problems and Opportunities**

All the participants in the interviews spoke of how systems thinking informed them in the work they do with other organizations or their own organization.

J.M.: It's such a core way that I approach things. I use systems tools to help people understand what goes on. It's easier in a systems model to understand the concepts of delays and feedbacks.

M.V.: I am working directly with individuals who have their world that they are dealing with, their needs and their concerns, and then I am working with these alliances which are regionally based, so they're based within a political structure, a county, and . . . a region which has a particular ecosystem, a particular economy, and . . . then those are nested within a larger system of a network and then a state level piece and so I feel like I am supporting these groups . . .

W.R.: It significantly expands your horizons and what you're thinking about . . .

S.E.: I've learned to perceive and understand organizations that I work with in systems terms of one sort or another. This provides a way of understanding the complexity of the organizations and the communities and the group that I work with at different times . . .

B.K.: I'm working on creating a process for building trust with this whole organization within the company and I couldn't do all that if I weren't thinking in terms of systems.

M.S.: It's the way that I approach the work. When I'm called in to help with strategic planning work I make sure to bring in the [whole] system. When I'm doing change management work it helps me determine which participants need to be in the room. This is a way to think through problems . . . [and] opportunities.

### **Systems Thinking Is Not a Technique, Model, or Tool**

My initial thought when I began this paper was that systems thinking was like a Situation-Target-Process (STP) model or other simple change management process that you would bring out as a tool to use in a meeting and then go to the next tool or process as needed. Data in the interviews shows that most consultants and professionals feel it is a much larger idea.

J.M.: A STP model is remarkably good if you're really clear of your target and you really understand and you really think that the process that you're going to use is going to help accomplish that target, but oftentimes it's simply an inadequate model to actually accomplish anything, because targets are imbedded inside systems and systems often have dynamics that go beyond your simple ability to identify a target and drive to it. I don't use systems thinking like a technique like somebody would use open space or whatever. . . . Oftentimes, the way I use systems thinking in the group is to explain a

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group dynamic that may be operating or to model a problem that they may be working on. I would say that . . . the capacity to do systems thinking or systems analysis is a prerequisite to be helpful and it shows up in lots of different ways unique to the individual practitioner.

W.R.: Unless you took a systems perspective there wasn't really attention [paid] to the interconnections and the emergent properties; how things would evolve, and paying appropriate attention to contextual issues . . . you begin to realize very quickly . . . that there's a lot of ways to look at a complex issue or challenge, and that you need knowledge and insightful tools from lots of different traditional disciplines. You can't just go into it from a single discipline and be really effective.

M.S.: What impact has systems thinking had? I don't know because I don't know what this organization would be like without it. It's embedded.

Once You Start to Understand, Integrate, and Apply Systems Thinking, the System Improves

J.M.: I actually think that the advantage of systems thinking is that it lets organizations model complexity and thereby simplify it.

M.V.: It's also like mapping stakeholders in the system, which is an exercise to show them where they fit in the system and why they are related. . . . We are working with stakeholder representation all the time, which is basically kind of a systems exercise.

S.E.: The effect for the organization is a very significant, even transformative shift to much more effective functioning and much less crazy functioning because we work with the organization as a system. . . . The members of the organization, in whatever capacity, learn to pay attention, to understand their own organization in systems terms. . . . They are transformed in using and talking about systems thinking. They get to know what I know by the time we're done.

### **The Participants Had a Variety of Perspectives on the Role and Nature of Leadership**

J.M.: I work in roundtables. I work in consensus settings. I think that providing groups with new tools to understand the world and new tools for them to engage the issues they care deeply about is empowering, and therefore, it's useful for leaders of all kinds.

C.G.: We decided that a hierarchical management structure would never work. Everybody takes some kind of leadership role. Everybody takes responsibility for some aspect of things, so that if the ball gets dropped we all feel responsible for it. It just makes for a healthier environment, and I'd say that it has to do with a system value that's shared by everybody.

M.V.: I think that people are catching on to this, the idea of finding solutions that have multiple results and multiple functions and I think that's really a systems approach and I

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find that once a decision maker or leader has the light go on around the value of looking for those kinds of solutions and actually using those as a criteria . . . that they pretty much like to do that whenever they can.

S.E.: Leadership is a process of influence. Influence is something that every individual is continually exerting either by not doing something and including by doing nothing. It's not only an individual trait; it can be a group trait. A particular department in an organization can have a leadership effect on the others. It could be the R and D department comes up with a breakthrough product, and then a lot of things begin changing in the organization. They've been very influential and organizations can have a leadership effect in their industry and so on. So, that's from a systemic point of view.

W.R.: There's recognition that especially when you're leading that you might think you're the boss, but leadership is not really about being the boss. It's about collaboration, it's about persuasion, and it's the ability of how you organize and get people to work together for the common good.

B.K.: So, it's all-inclusive and if a manager's not thinking about all those things, they're going to be off balance. It's not going to be an effective model. A good manager has to be able to take it all into consideration and manage it and inspire and drive.

W.R.: Now you're getting into the overlap on my work on systems and my work on leadership. So, there are very few people that have really been applying systems notions to leadership and there are very few leadership people who are using systems ideas. Most of the work I do is on systemic leadership. When I'm talking that way and [have] much greater emphasis on focusing on the greater good, there's an awareness that you have to deal with emergent properties and emergent capabilities and you're trying to develop these emergent benefits.

## **DISCUSSION**

The data revealed to me that different consultants use systems thinking or a systemic view in their organizations or consulting practice, and they use it in different ways that are individual to their circumstances.

In the literature review, Margaret Wheatley (2006) was referenced as considering how thinking systemically can help us to understand the complexity of science and the world we live in. The participants in the interviews mentioned how systems thinking helped them view organizations more holistically. Many realized that using systems thinking was the only way they could approach the enormity of the complex nature of their business; they had to use the systems approach to stay viable. Systems work is embedded in their work, and systems language and usage is like the water that fish swim in; they can't function without it. Systems thinking is the environment that more and more companies, organizations, and leaders are realizing they need to keep pace with in this quickly changing world.



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External and internal consultants find that systems thinking allows them to grasp and understand their clients more accurately because they are looking with a wider lens at the clients' organizations. Problems as well as opportunities are approached with wider views, and the impacts are understood in relation to clients, customers, vendors, employees, and anyone or anything that has a relationship to the outcome. Consultants and those working within the organizations become aware of the benefits that a systems view offers as processes run smoother, efficiency improves, and collaboration helps communication. This is not to say that there are never any more problems, but the organization, company, or school starts to bring in more of the system and more voices and more interactions to help them understand and move through issues that confront them. This interdependence helps both the consultant and the organization to work more collaboratively.

The data showed that, contrary to my original opinion, systems thinking or systems work is not a simple tool, model, or technique that we offer to a client or organization in a two-hour session. It is a way of breathing, as M.S. mentioned. If it is backed by science, as indicated in my early research, then it is the bedrock of our planet and the processes that keep it functioning. Consultants and leaders use systems thinking in different ways, because of the openness it brings to a conversation. The important part is not the work but the conversation. Decisions informed by inclusive dialogue are more helpful in getting a shared view of the system being talked about. Conversations are the systemic glue that keeps the work going. The conversations that integrate processes and employees, and bring together diverse opinions and ideas, foster a holistic approach that can bring all aspects of the system together. Consultants, directors, and presidents are using these concepts to advance their organizations.

People in organizations who begin to understand their work in systems terms start to see the simplicity in their systems and notice the relationships and patterns that are important to work on for success. When organizations start to look at the structure that is causing the problems, deep relationships need to be fostered between stakeholders so that the necessary conversations are taking place. People recognize that this takes time, but by seeing the interconnectedness and applying the systems thinking that they are learning, they see improvement in the organization and they see the improvement in their understanding and capacity to integrate the new learning. People in the organization also begin to look at other areas of the organization to apply systems thinking, which means they begin to see how everything is interconnected and interdependent. They begin to realize that any decision affects everything else even though the result may not show up immediately. They see improvement, and they can appreciate the transformations in themselves and in the workplace. People start to develop a deep respect for their work when they begin to understand how complex their organization is. Progress in resolving significant issues improves as the ability to collaborate increases.

I have learned that, as people integrate their learning, they practice inquiring about their own patterns of work, and then about ways of organizing and communicating. People in organizations, realizing they are a system, begin to build in sustainable processes or alignments, so they can begin to self-regulate. They understand that they need down time,

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realignment, pause points, and a rhythm to organize their work so they can become more effective and increase their quality. Time delays and feedback loops are considered necessary and useful information to guide the decisions that the organization is making.

In a co-creative process, the consultant or change agent partners with the participants to surface their concerns and help them identify their problems, so they learn through the conversations how to approach the concerns and continue once the consultant is gone. Paradoxically, once the consultant leaves the clients with knowledge of their system, the client is more likely to call the consultant again because the intervention has been successful and they want more knowledge to solve the next or more complicated problem. The conversations and relationships within the organization become more important to the people and they realize it is in their best interests to continue looking at their work as a system.

Understanding and appreciating a systems view expands our horizon to look at other problems that are affecting us, our schools, our government, our foreign relations—all problems that are complicated and not easily resolved. Once we know a systems view is necessary to approach these more complicated issues, we know how to begin our conversations, conversations that co-create a win-win for all participants.

I understand there is a greater need for systems awareness and practice in leadership. Some managers are paying attention to systemic ideas because it is in their best interest to do so; they have to in order to survive in their industry. Leadership at the individual and group level can have a significant influence on the whole organization and innovations at those levels can even affect the entire industry. The organization, as a whole, needs to be aware of as many tools as possible to improve their work. Using these tools with a systems approach will benefit them in all of their task work as well as their relationship work. Leadership at the individual or corporate level can use systems principles in multiple applications to their work and they will begin to understand the interrelatedness embedded in all that they do.

### **IMPLICATIONS AND FUTURE RESEARCH**

The OD community needs to bring systems thinking into their awareness if they are going to remain a vital and beneficial part of the business world. OD consultants, whether internal or external, need to continue their learning to comprehend the complexity of the current problems and possibilities that are confronting large and small organizations. The OD community, by embracing systems thinking as a core competency, can expand their repertoire of interventions. OD consultants can better serve their community by fostering this new systems awareness and sharing it with their clients, friends, and families.

Systems thinkers, educators, and OD consultants are important messengers in the expansion of systems thinking. Because they are aware of the impact that systems ideas have on education, organizations, and the work force, they can be the forerunners in its implementation. Systems thinking, in its many forms, is not new, but we need to move away from our reductionist past, specialization, and thinking in silos to embrace this new

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paradigm of systems thought. Can we move the world to a place where our awareness of impacts, interrelationships, and emerging possibilities is innate; where, like the natural world, we move and breathe being aware of all the interconnections?

Viewing all of life as a system has informed me of the impact I have on everything I touch and have a relationship with. The conversations I have and the thoughts I think all influence how I show up in my everyday world. I am much more aware of the influence I have and how that influence can be a positive force or hindering force for change. I intend to be a steward of systems thinking and bring that awareness to everything I encounter and foster beneficial change in my interactions, hoping they will ripple out to create wider and deeper systemic change.

I want to continue researching how to bring more wholeness to organizations, communities, and families. In hindsight, I would have done more reading and research early in the project to get a better grasp of the area of research. I would have asked more questions of faculty and consultants as to what their interests were in the field and what research and people would be helpful to connect with. These actions, I believe, would have helped me grasp the enormity of the field and helped the focus and clarity of my leading question. Given what I know now, I would have tried to interview and connect with leaders in the field, such as Margaret Wheatley and Peter Senge, to engage them in dialogue and to find out what their current learning edge is in the field. I would be interested in what the big questions are for them now in their lives. I also wish I had interviewed more diverse people, especially ones not local to this area, to get a broader range of expertise in systems thinking.

I want to continue my research in the field of systems. I am still interested in the prospect of bringing systems thinking into local schools and want to work locally to expand the awareness of systems in organizations.

### **CONCLUSION**

I began my research into the topic of systems thinking in an attempt to find out how leadership impacts the learning and openness to systems thinking in groups and organizations. I realized that thinking systemically could begin anywhere in the system, by anyone who took the time and effort to expand and deepen their thinking. I learned that consultants could bring an awareness of systems thinking to organizations and leave with the knowledge that the organizations could continue to learn about their own system and discover ways to solve their own problems.

Consultants also improve their own functioning and effectiveness by adopting systems approaches. I learned that systems thinking is not a simple tool or model; it is a way of functioning while being aware of emerging properties, opportunities, problems, and all the interconnected relationships within and beyond the organization. There is also positive awareness and acknowledgement that results from the application of systems thinking principles. Leadership at all levels in an organization benefits by being open to a systems viewpoint and the results could encourage them to risk more of their established

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ways of thinking to emerge into a more collaborative environment. Systems thinking fosters an integrative approach that asks all people involved to participate in their own processes and to provide perspectives on how to improve collaboration. Every action is interconnected with the decisions made and the results of those decisions are affected by time delays and feedback from within the system, from outside the organization, and from the broader social, economic, and environment contexts.

Systems thinking uses processes, tools, and inquiry to access a larger view of the problem, the situation, and the environment so that all knowledge is applied in understanding where we are. My hope is that we become immersed in systems knowledge and our own self-mastery so that we innately move and breathe like animals in the natural environment, knowing who we are and how to engage with our environment and the relationships around us to perceive our next step that will foster generativity in all our thoughts, actions, and conversations.

We have to begin again to re-envision our relationship with our inner and outer environment. I am inspired to bring a systems approach to all my relationships and to learn how to integrate systems thinking into our schools, government, and our daily lives; to realize the environment we swim in is vital to our survival. Our awareness of a systems approach is essential for the ongoing relationships we have at work and with our communities and families. If our daily awareness includes the world we live in, then we are already using systems concepts in a meaningful way. As our world grows smaller due to humanity's impact getting larger, I realize there is an increased need for systems thinking. An important question for me is how we can reorganize our learning capacities to encompass more ways to collaborate. How can we talk together to achieve the results that will sustain our planet as a system? What I have learned is to continue our self-mastery, inquiry, and curiosity into how we fit together in our system.

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### Appendix: Refined Data Summary

The following section draws on quotes, words, and phrases that are distilled from the responses to the interview questions.

#### 1. What does systems thinking mean to you?

Connections . . . patterns . . . Gestalt . . . giving insight . . . a comfort . . . a way of looking at the whole system . . . an inherent drive for wholeness . . . broaden[ing] and deepen[ing] the thinking . . . a way of looking at and interpreting the whole . . . thinking of the whole in terms of its parts . . . understanding complexity . . . understanding through relationships . . . see[ing] how the parts interact with each other and affect the whole . . . forcing you to look holistically at multiple interactions.

#### 2. How were you first introduced to systems thinking?

Nature . . . family systems . . . [at] age 10 began to look at connections . . . [in] college . . . [as a] grad student [through] teaching . . . mind mapping . . . chaos theory . . . [a] systems approach to government relations . . . how systems thinking relates to social systems.

#### 3. How has systems thinking contributed to your (consulting) practice?

Breathing . . . core use . . . link & loop . . . causal maps . . . helps me to help people understand what's going on . . . ability to look at nested systems . . . integrated approach to problems . . . interconnected and emergent properties . . . patterns and understanding behavior . . . a way to approach work . . . brings whole system into the work . . . allows thinking through problems and opportunities.

#### 4. What are the benefits of systems thinking?

Informs choices . . . understands complexity . . . seeing things as holistic . . . focus[ing] action and organiz[ing] thought . . . [being] responsible for our own organization . . . broadens thinking . . . increases understanding to use best practices . . . expands horizons and awareness of causal factors . . . prevents getting sucked into fixing symptoms . . . shows clients where the connections are . . . awareness of external and emergent factors affecting the system.

#### 5. What impact has systems thinking had on the organizations you have worked with?

[It is] embedded . . . [provides a] common ground . . . systems thinking is not a technique . . . direct transfer of information and knowledge . . . see[ing] the underlying structure . . . bring[ing] in all the stakeholders . . . systems thinking has a learning curve . . . organizational problems are likely to be solved . . . organizations begin to understand themselves.

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6. What feedback have you received from colleagues and clients in relation to the application of systems thinking?

It's helpful . . . [it's] well received . . . they see the system . . . [it] helps and improves collaboration and complexity . . . it works and they are grateful . . . [it helps] integration and effective[ness] . . . quality goes up.

7. How has systems thinking transformed leadership in the organizations you have worked with?

Leadership has to think systemically . . . it works and informs leadership . . . leadership learns how interconnected we are . . . leadership is about collaboration . . . once leadership is interested they will keep using it . . . few leadership people [are] interested in systems thinking.

8. From your experience, what is the best way to bring systems thinking into organizations? Do you have any personal stories?

Graphic recording . . . it's a side effect . . . co-creation and asking questions . . . use systems thinking to explain a dynamic that is happening in their organization . . . model a problem the organization is having . . . show them what is happening systemically . . . find out what is important to them . . . use integration to help process work . . . integrate and coordinate independent systems . . . maintain balance while working on issues . . . develop awareness and understanding.