COMMUNITIES OF PRACTICE AND SYSTEMS THEORY: A CASE STUDY

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ABSTRACT

This case study examines the development of a self-organized Community of Practice (CoP) through the lens of systems theory. The CoP is devoted to the practice of Action Learning within the United States public sector. The CoP's membership comprises public sector employees who are Action Learning coaching practitioners and other public sector employees who are interested in Action Learning as a problem-solving and leadership development tool. CoPs embody systems theory in that they may be characterized as open systems with core members and peripheral members. Disruptions to the system challenge and strengthen the CoP through boundary crossings between the CoP and other communities. System disruptions and the communications that have occurred as a result have created challenges to identity.

Keywords: Systems Theory, Communities of Practice, Boundaries, Open Systems, Autopoiesis, Structural Couplings, Communication, Action Learning

INTRODUCTION

In this case study, I consider a Community of Practice (CoP) and its relationship to systems theory. I have had a long-standing interest in CoPs as informal learning environments. My epistemic interest in undertaking this case study was to development an understanding of how systems theory relates to the operations of CoPs. I am also interested in exploring how systems theory may be useful in designing and maintaining CoPs.

I am a member of a CoP based in the mid-Atlantic region of the United States. The CoP serves public sector employees engaged in the practice of Action Learning. Action Learning (referred to throughout this report as the "practice") is a team-based problem solving technique that encourages both reflective learning and leadership competency development. When done well, Action Learning promotes individual, group, and organizational learning. I am a certified Action Learning coach; and he assisted in the formation and development of the CoP.

Learning theorists have associated CoPs with systems theory principles and systems thinking. This case study assesses this relationship and focuses on how one CoP reflects systems theory. I will also examine the design and maintenance of CoPs from a systems thinking perspective. Extending the knowledge of the relationship of self-described CoPs with systems theory is one of my goals in presenting this case. I hope my insights might lead others to research the systemic nature of CoPs and to research how this knowledge may be used to strengthen organizational learning.

Communities of Practice and Systems Theory

CoPs are defined as groups of practitioners who share interests in a specific practice and who gather to receive help in improving in the practice from like-minded practitioners (Wenger, McDermott & Snyder, 2002). The operations of CoPs have often been linked with systems theory (Barab & Duffy, 2000; Contu, 2014; Euerby & Burns; 2014; Ison, Blackmore, Collins, Holwell & Iaquinto, 2012; Lave & Wenger, 1991; Wenger, 2000; Wenger, 2010; Wenger-Trayner & Wenger-Trayner, 2015). Wenger (2010) described the systemic nature of CoPs through the production of social structures—comprised of both the participation of its members and the reification of practitioner-created artifacts, communal documents, and other linkages to the cultural beliefs of the community at large. Both ongoing member/practitioner contributions and the community's cultural reification therefore define a CoP's systemic qualities.

CoPs represent a boundary space between practitioners and their practice while also operating interdependently with other systems within an environment. Interactions occur through boundary crossings between these various systems and subsystems. Wenger-Trayner & Wenger-Trayner (2015) have described the environment in which CoPs exist as small part of a broader environmental landscape. These landscapes of practice help explain, metaphorically, the role of the CoP in a complex environment and the boundary spaces that exist between CoPs and other organizations operating within the environment (Wenger, 2010; Wenger-Trayner & Wenger-Trayner, 2015). The landscape shapes the CoP's identity while the CoP shapes other organizations within the landscape in a way that is constitutive to the CoP (Wenger-Trayner & Wenger-Trayner, 2015). Boundaries therefore serve as a third space for tension, or "creative abrasion," as Contu (2014, p. 301) referred to it in her study of a learning design team's contentious, yet ultimately productive, interactions among its members. She reported that these creative abrasions between team members resulted in stimulating the members' situated cognition and extending their collective knowledge-building abilities.

For Barab and Duffy (2000), CoPs reflect the self-reproducing nature of systems through their integration of new members into the CoP through *legitimate peripheral participation*. This occurs when newcomers to a CoP begin by working on legitimate, yet peripheral, work with assistance and guidance from the community's more experienced practitioners (Lave & Wenger, 1991). The process of bringing in new community members and enculturating them into the community through guided practice provides the community with a sense of meaning and self-identification that reproduces cyclically over time. New practitioners provide stimulation to a CoP as they evolve into experienced practitioners; and the cycle is repeated as the next generation of newcomers enters into the practice.

Practitioners have used Soft Systems Modeling (SSM) processes to organize effective CoPs. SSM activity models provided a way to understand how CoPs could be an effective tool in managing organizational complexity (Ison, et al., 2012). Tammets and Pata (2014) described a Learning and Knowledge Building (LKB) framework operating within a teachers' association that reorganized teacher accreditation procedures. The authors used SSM processes and participatory action research to build a successful LKB framework that connected disparate, yet interdependent, educational communities operating within the teachers' association.

Communities of Practice and Systems Theory

In their study of system complexity, Shaked and Schechter (2013) worked with school administrators in applying systems thinking to deal with the complexity of a school system in that was inhibiting the establishment of new teacher accountability requirements. The administrators had been viewing challenges through their own narrow viewpoints, leading to reductionist interactions and ineffectiveness in meeting their organizational objectives. In assisting the school administrators to overcome their reductionism, the authors encouraged the administrators to take a systems view based on holism as a way to better understand their shared challenges. Understanding the school system this way encouraged the administrators to better manage existing internal and external complexities that had been inhibiting their progress in establishing new accountability requirements.

Others researchers described system-reinforcing and balancing feedback loops as ways to understand and address resistance to organizational change and create effective employee participatory strategies (Schweiger, Stouten & Bleijenbergh, 2018). Knutson and Brock (2014) investigated "in-between" spaces between the state and the global economic market using an open system framework that reduced entrenched dichotomies that had inhibited serious research and understanding. Allowing for boundary spaces where differences between an environment and other systems can be reconciled created a pathway for positive change. Thinking more holistically and understanding and exploiting system interdependencies proved critical in the formation of these powerful in-between spaces of interaction and learning.

Niklas Luhmann's work in systems theory, particularly his construct of social systems, holds promise for understanding organizations despite empirical and epistemic concerns. Brocklesby (2001) noted that that the question of autopoiesis and the critical role that structured couplings play in the relationship between environment and system has not been often applied in organizational studies. He argued, however, that Luhmann's ideas on social systems might be applied to better understand how organizations operate, particularly in comparison to other models of human cognition or individual and organizational knowledge. Baralou, Wolf and Meissner (2012) suggested that Luhmann's system theory has been underappreciated in organizational research—particularly when compared to other conceptual frameworks including Weick's sensemaking and Giddens' structuration theory. Bechmann and Stehr (2002) noted that researchers have found Luhmann's emphasis on interhuman communication and his de-emphasis on human-centered activity as nettlesome—a point that Leydesdorff (2000) has made in discussing Habamas' critique of Luhmann's description of autopoiesis. Luhmann's theoretical split of social systems from psychic systems has concerned sociologists, including Habamas (Leydesdorff, 2000). For Luhmann, however, the place of human beings, as subjects, within a social system exists in the psychological rather than the sociological domain – although human beings do, in fact, reenter social systems. Communication for Luhmann is what ultimately unifies a system, defines it meaning, and creates the need for action to deal with complexity introduced into the system by the environment.

Baralou et al. (2012) suggested that Luhmann's theory of social systems is quixotic and is viewed by organizational researchers as not being applicable in the conduct of empirical studies. The authors noted that Luhmann's emphasis on communication might well be

useful as a conceptual framework for organizational studies, creating a better understanding of systems in which knowledge incoming to the system is used by the system to make meaning. As a result, Luhmann's notions provide a potentially useful conceptual framework for researchers to analyze organizations in ways that place communication at the core of an organization's meaning system—the reason for an organization's existence as an operationally closed system that remains open to outside environmental stimulation and modified through intermediary boundaries.

I agree with Baralou et al. (2012) and Brocklesby (2001) regarding the representation of Luhmann's ideas in organizational studies and their recommendations on how it might be used to inform understanding of social systems. In this case study, Luhmann's systems theory contributes to my understanding of what is going on in the case. However, given the empirical limitations cited by others (limitations with which I concur), I have not attempted, in this case, to utilize Luhmann's social systems theory as a conceptual framework for empirical interpretation of the data corpus. I am interested in exploring whether the CoP represents a recursive, operationally closed system, while acknowledging the validity of concerns whether communications systems can truly be autopoietic systems; the lack of an outside observer; and the lack of centrality of human beings in his social system theory—a concern acknowledged by Luhmann (2013).

Other notions of Luhmann's theory that I have drawn upon include the importance of perturbations – or, as Luhmann himself preferred to call them, irritations and stimulations – that are received into a system through its structured couplings with the environment (Luhmann, 1995). Stimulations from the environment structure a system and help define its meaning through its communications. Selections ensue from communication that drives activity. Without an environment, there can be no system— and without a system to couple to, there is no environment. Luhmann has more grandly suggested that without systems, there is no society. A primary interest of my case is to better understand how the environment stimulates the CoP through communication between the environment and the system.

METHOD

I approached my investigation as an instrumental case study focusing on CoP communications and internal operations with the outside environment and the boundaries in between. Yin (2003) described case studies as being useful in increasing the group's knowledge of organizational and social learning based on a holistic picture of real-life events. Stake (1995) defined instrumental case studies as being studies that appropriate richly descriptive and explanatory studies in generalizing similar cases. Since I am only drawing generalizations from a single case, I would characterize this case as being a *petite generalization* as described by Stake (1995)—who suggested that case studies should not necessarily include problem statements, research questions, or literature reviews. In this study, I have taken some liberties with Stake's strict notion of a case study, in that I believe it is important to link the overall goal of the present study to broader systems thinking.

Communities of Practice and Systems Theory

While my unit of analysis is the case, I have incorporated ethnographic data collection methods and a triangulation strategy to better understand the case. Data which I have analyzed include CoP documents (including email communications and mission and vision statements); my own observations as a participant; and my interviews with three individuals who have participated in the CoP since its inception. I have used pseudonyms for each of these three CoP members:

- **"David"** is a certified practitioner who originated the idea for the CoP.

- **"Kate"** is a practitioner who is in the process of completing her certification.

- **"Ellen"** is presently a non-practitioner who is interested in exploring the practice from a problem-solving perspective.

RESULTS

David, a professional colleague of mine, formed the CoP in the winter of 2017. He knew that I had had experience in co-directing an instructional design CoP for a local chapter of a nationwide professional development membership group. David and I are certified Action Learning coaches, and he has been instrumental in introducing the practice to his own organization and establishing its use in organizational problem solving and leadership development. I readily agreed to work with David in organizing the new CoP; and offered personal knowledge and practical experience in social learning principles and practices.

David organized the CoP to encourage the use of the practice within organizations in the public sector. Learning communities existed within the group's sector – communities that the group could look to as models – but nothing reflected what David and I were envisioning. The decision to organize the community as a CoP was critical, as the concept of a CoP has had a specific meaning in its application as a workplace learning environment. CoPs have been defined as a group of practitioners who meet to share their passion for a given practice and to seek and receive guidance from other practitioners (Wenger, McDermott & Snyder, 2002). The focus on improving one's skill in a practice through assistance from one's fellow practitioners separates a CoP from other types of user-based communities such as Special Interest Groups, communities of inquiry, or user groups. I would note that the CoP group's self-referencing (who the group viewed themselves as being) has resulted in identity challenges.

During the CoP development process, David contacted both an organization comprised of public sector learning leaders and the practice's international certification organization. He believed that these two external groups could provide support in establishing the legitimacy of the CoP. He established an initial meeting date and invited many from across the sector's larger learning community to join the group to hear more about the plans for the CoP. He announced the formation of the CoP on a sector-wide listserv serving the learning community and accompanied that announcement with an invitation to attend the initial meeting.

Communities of Practice and Systems Theory

David and I held the group's initial "kickoff" meeting in the spring of 2017. David presented some information regarding the practice and then coached a demonstration of the practice, while I served as the "client" in need of help. Other participants served as group members in the demonstration. The initial meeting concluded with a discussion of the practice; and the group answered general questions from attendees. There were many questions, as most of the attendees were unfamiliar with the practice. I observed that the group did not seem to be comprised of practitioners, but rather those who may have be interested in the use of the specific techniques of the practice to promote organizational effectiveness and learning. I wondered how many of those attending would even attend future CoP events – given the fact that most were not actual core practitioners but were rather general learning and development professionals who were on the practice's periphery. As it happened, relatively few who attended the initial meeting returned for the group's future meetings. This lead me to question whether the group had targeted the right audience for the CoP. (At the time, my perception had been that practitioners would have constituted the proper audience for the CoP.) The initial meeting ended with list of action items, including defining ideas for a mission statement and a vision statement – and determining possible locations for, and hosts of, future CoP meetings.

For the second CoP meeting, David invited an experienced practitioner to address the attendees on the finer points of the Action Learning since many of those who attended the initial meeting were not familiar with the practice. There were more newcomers. Many who had attended the CoP's initial meeting did not return. After the practitioner's presentation, I presented information on the benefits of carefully drafted mission and vision statements with the idea that the CoP might benefit in defining its identity through the drafting of these statements. While mission statements might be viewed as a strategy of reification of the community's purported values, I would suggest that such statements also represented an initial step toward the CoP's self-referencing—a condition of an autopoietic system. Or, to put it more simply, the group is who it says it is.

It occurred to me after this second meeting that the members of the CoP might have an identity challenge if David or I would need to explain the basics of the practice at every meeting. I wondered whether the group was emerging as a real CoP (practitioners' learning from other practitioners), or whether the group was assuming an identity more akin to an SIG (advocating the benefits of the practice). How David and I communicated about the CoP's identity with budding members and outsiders mattered. When I asked David how he would characterize communications in the CoP, he expressed concerns about the quality:

> So, I would say that they are- that they're limited in terms of the amount, the quantity of interaction across the community. I would also say that they're not only limited but [that] a lot of the messaging is really for one purpose or from one person to the group, in [the] case of organizing meetings—but there's just not a lot of interaction. But the quantity [of it], I think, would be quite low; so I would characterize it as needing improvement.

However, with regard to messaging, when I asked David whether he believed that messages were understood by community members, he responded:

> Yes, so I think; yes, I do think that there's a high level of comprehension on the messaging and [that] the people do understand both the intent and the content of what's being requested or commented on for the [(benefit of the)] community.

I asked Ellen, another CoP member who had been attending meetings since the beginning, what she had observed regarding communications within the CoP. She responded:

> Well, I would say that so far, [with regard to] the Community of Practice, we have a pretty good core group and I think that keeps ... it's good that we touch in on a pretty frequent basis (I would say), to make sure that the events and the meetings we're planning kind of keep going forward in sticking with the mission and what we see [as] being the goal of the Community of Practice.

I observed that members may be interpreting messages based on the perspective that they bring to the meetings (e.g., the practitioner or the non-practitioner). Member identity and self-identification may affect how messages are being understood within the system and what actions are being taken by members. I asked Kate, a practitioner who has attended most of the meetings since the beginning, to describe the CoP's identity. She responded:

> The community's identity. It's sort of two-layered. There's the [group of] people like you and me and [David] and a few others who are really, really interested— and [who,] when we get a chance (or when I get a chance) to think about action learning, are quite engaged. Then there are the people who kind of circle around it; rotate around it. I'm thinking [in terms of] the molecular structure [of the group]. [They're like] the electrons. They're interested. And in fact, it was one of those interested people who made the connection for me – from my action learning experience – which was just terrific. You just don't know what's going to spark a connection.

Thinking of systems, I wondered whether the structural coupling that David and he had established with the broader community and communications with the outside environment, (i.e., public sector organizational leaders and the learning and development community) was affecting the CoP's internal operations and self-selection in a way that altered meaning systems and that altered how community members engaged in self-referencing. Does it suffice for the group to refer to itself as a CoP when the perturbations caused by interactions with the environment and through the boundary crossings with other communities was altering how the group was internally operating? Luhmann (1995, pg. 196) described the self-generated "meaning-constituted boundaries" that organizations establish as a way of establishing their symbolic territory as well as establishing the membership of the organization. From this perspective, I wondered whether the group had erred in opening the boundaries that the group had created for the CoP too broadly. He wondered whether doing so had resulted in having taken the CoP,

along with the system's autopoietic operations, in multiple wayward directions—thus creating systemic disequilibrium. Conversely, however, he wondered whether this self-created complexity would enrich the system? Luhmann (1995) believed that the complexity of the environment-system difference—and the mediation of those differences through communications—is what gives the system its meaning and the energy to self-sustain itself.

The group's members agreed that the CoP would benefit from the development of mission and vision statements as a way to provide the group with a focus for moving forward. I participated on a team charged with drafting the mission statements. The team developed a brief questionnaire to assess ideas from those on the group's attendance lists; and the team met to make sense of the results. The group ranked the popularity of the various ideas. The top ideas generated by the group were presented at the next CoP meeting. I facilitated a "dot voting" process in which attendees were provided with five stickers and were asked to allocate their dots to the various ideas that were listed on chart paper attached to the walls. As a result of this voting process, the participants in the meeting agreed upon a two-part mission statement for the CoP:

• To expand the practice throughout the sector

• To provide a forum for practitioners to practice their craft while receiving assistance from other practitioners

The second mission statement aligns better with the commonly understood definition of a CoP as it emphasizes its goal of facilitating members' improving in the practice through the assistance of fellow practitioners. While I do not believe that the first mission statement aligns to the definition of a CoP, he recognizes that it does describe the idea of boundary crossings in learning landscapes of practice (Wenger-Trayner & Wenger-Trayner, 2015). Interestingly, this meeting attracted several new attendees who introduced new viewpoints. This has been somewhat characteristic of the CoP—each meeting usually brings a combination of regular members and newcomers. Such a dynamic introduces an added stimulus to the group – a stimulus that self-reproduces and energizes the system. This is a characteristic of CoPs, as noted by Barab & Duffy (2000). The second mission statement, which differs from the CoP concept in its lack of emphasis in improving in practice, may be characterized as a perturbation that characterizes external system differentiation—the formation of the system into smaller units as a way of reducing the complexity between the system and the environment (Luhmann, 1995). I asked David how he believed the group's interactions with various external groups had affected the group's community's operations. He responded:

> I think the interaction has, perhaps, broadened (in a way) our thoughts about our mission and vision in terms of who we interact with – who we serve – [and] the potential and the need to perhaps widen our community in terms of participation in order to keep both energy and ideas – and basically, new contributions – coming to the community. So I think it's opened up the horizons a little bit.

Restructuring of the system's self-referencing operations through internal differentiation results in, or is reduced to, actions (Luhmann, 1995). It remains unclear whether this has occurred within the CoP; but I do see the potential for it to happen. I view the inconsistencies between the two mission statements in relation to the definition CoPs as being a double contingency based on the perceptions of how the CoP's members see themselves as being. Or, as Luhmann (1995, pg. 412) described it, "In social situations [,] ego can see [the fact] that alter sees, and perhaps [can] see what [exactly] alter sees." Communication within the system and between the system and the environment is essential in resolving the double contingencies that result from expectations of what should occur. Luhmann (1995) suggested that, given time to work through expectations, disappointments resulting from failed expectations builds stability into the system; conditioning it; allowing for disruptions to be absorbed by the system's internal operations to be managed over time—"system-internal time," as Luhmann (1995, pg. 309) referred to it. This process gives the system time to react by transferring the double contingency to the system's internal operations. In this sense, my failed expectations stimulate the CoP—providing it with its structure and focus by constraining the range of possibilities available to it (Luhmann, 1995). Viewed through a systems theory lens, one might assume that the CoP will ultimately thrive on complexity by unifying these two seemingly cross-purpose mission statements, as well other challenging structural couplings with the environment, into the system's internal structure.

Structured couplings with other groups have factored into the CoP's internal operations. David organized a panel discussion of participants in a leadership program who had achieved success incorporating the practice within their program. Once again, the goal of the meeting was to promote the practice rather than to focus on improving the skills of practitioners. Based on the recommendation of a fellow CoP member, the group had issued a meeting invitation to other participants in a public sector user group (a group devoted to another organizational process improvement technique) to attend the CoP meeting. David and I wanted to learn more about how they maintained their user group. From the very start of the panel discussion, the group's CoP members experienced miscommunication regarding the group's intentions for contacting the user group. Most notably, one of the user group members mistakenly believed that David and I were looking for ways to incorporate the user group's practices into the group's practice. Miscommunication with the user group members likewise occurred during the panel discussion when one of the members assessed the group's practice as being loose and unstructured. The panel members responded to this characterization by explaining what they thought were strengths of the group's CoP's practice—and countered the misinterpretation with thoughtful dialogue about how the practice may appear to be loose but in fact is characterized by ground rules specifically designed to enhance team learning. What David and I had hoped to learn from the user group members had been clearly misunderstood by one user group member; but this miscommunication proved to be beneficial. I believe that this perturbation ultimately strengthened self-referencing when the panel members had responded to the guest by reiterating what the practice represents to the CoP's members.

The group has, more recently, tried to combine the two mission statements. At another meeting, David and I organized a demonstration of the practice. The group's

audience was comprised primarily of leaders from the sector's learning and development community, most of whom had little knowledge of the practice. The objective of the meeting was to introduce the practice into the sector as a problem-solving technique— one which also develops leadership skills. The demonstration went well. One of the senior leaders who attended presented a problem and a "team" of three other attendees worked on the problem. When I asked a non-practitioner CoP member, Ellen, about the group's CoP member interactions with those outside of the practice, she discussed how this meeting had gone:

> It's really a matter of that changing the culture, that thinking shift. I sat on an Action Learning panel at the [host organization] this past fall, and it takes a little while for them to get out of that solution driven mindset, and into that questioning and thinking things in this different sense. I think that educational aspect of it, and just having that community and being well grounded, I think that's probably the biggest [aspect].

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At another meeting, the group's CoP members focused on improving practitioner skills – a focus which I believe further contributed to the group's self-referencing of itself as a CoP. David and I had asked a practitioner to present an issue that was occurring. The problem that was presented involved a team sponsor with whom the practitioner was working who provided too much information and would conduct "lectures" rather than interacting with members of the team and responding to their questions. The team was coached by another member of the CoP who was able to practice her skills as well. As a result of the meeting, a CoP member who presented the problem received assistance on how to deal with similar challenges in the future. David and I asked attendees about their reflections on the process at the end of the meeting. There were a variety of opinions expressed by the meeting's attendees on how the process might be useful in problem solving and developing leadership skills. This session reinforced the mission statement related to improving within the practice. I believe that it contributed to the CoP's internal self-referencing and self-description.

DISCUSSION

In this case study, I have described the development of a CoP and how it aligns with systems theory, drawing from Luhmann's social systems theory. The CoP demonstrated self-referencing through its mission statements and through its communications with the environment, consisting of outside groups and organizations as well as the public sector itself. These communications—through structured couplings— provided the CoP with stimulations that refreshed and strengthened the system. Expectations provided a structure that helped constrain and challenge the system, energizing it even more. The group's self-identification provided challenges as to who the

group is. These challenges were reflected in the two mission statements, which recognized both the internal (i.e., the normal definition of a CoP focusing on improving practice) and external (i.e., boundary crossings with outside groups within the broader landscape of practice) The group's external mission provided the group with a defined structural coupling with the environment which is necessary for the system to reproduce.

CoPs can be designed to take advantage of these considerations of self-referencing; communications through structured couplings with the environment; and openness to perturbations and complexity, all of which can strengthen the system.

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