Australian Academy of Business and Economics Review (AABER)
ISSN (Online) 2205-6726
ISSN (Print) 2205-6734

Emerging Leadership Conceptualization: The Complexity Leadership Theory

Abayomi Alase

School of Education, Northeastern University, Boston, Massachusetts, USA

Abstract

This paper looked at leadership concept from a complexity perspective. Although complexity theory has been attributed to many disciplines but it origin and original concept was first theorized in the physical science disciplines as a theory that tries to understand the complexity of nature as it is known and studied in the scientific world. However, complexity leadership theory (CLT) as it is known in the social science disciplines, especially in the leadership theory scholastic community, was first developed by Uhl-Bien et al. Their intent was to conceptualize a leadership theory that can describe a specific type of leadership style. As such, they conceptualized a theoretical framework, CLT; a theoretical framework that was intended to create a leadership paradigm (style) that will enable agents (humans) to have the ability to create, adapt, learn, and acquire the capacity to contextualize knowledge-based and knowledge producing capability vis-à-vis leadership-based capability. In addition, this paper will also discuss similar and relatable concepts such as CSA and CSAT. CAS is an acronym that means complexity adaptive theory and complexity adaptive system theory (CAST) is an acronym that means CAST. As concepts, these conceptualized system and theory have been described as the emergence of system and theory with capacities that arises through the interactions of the system's interdependent components (agents).

Keywords: Complexity Leadership Theory; Complex Adaptive System; Complexity Adaptive System Theory; Leadership Concept

1. Introduction

The field of leadership study has witnessed an incredible surged of interests in both the entries of new theoretical leadership concepts and frameworks in the past 40 years (House, 1971; Burns, 1978; Bass, 1985). Now comes new contemporary leadership theories, a new paradigm in leadership conceptualizations, and among them is the complexity leadership theory (CLT). In the last four decades, traditional leadership theories have permeated and oversaturated the field of leadership study with its ideologies and conceptualizations leaving no room for new concepts, until recently. Theories like the path-goal leadership concept developed by Robert House in 1971, theorized about the path way to reaching a set goal by leaders. Then, James MacGregor Burns came up with the first theoretical framework for transactional and transformational leadership concepts in 1978. In 1985, Bass redefined both the transactional and transformational leadership concepts by refining the leadership theory. According to Bass (1997), he attributed four dimensions to transformational leadership (namely, idealized influence, also known as Charisma, inspirational motivation, intellectual stimulation, and individualized consideration), and added three additional dimensions to the transactional leadership (contingent reward, management by exception-active, and management by exception-passive). Finally, Bass (1997) reaffirmed that Laissez-Faire type of leadership is an ineffective and dormant leadership style.

What is also very obvious is that many of the traditional leadership theories propagated the idea of top-down leadership style. The traditional leadership theories make it seem as though organizations can only prosper and horizontally move ahead if it has a dynamic and transformational leadership at the helm (Bass, 1997). However, the arrival of the new contemporary leadership theories has changed that "singular-person" perspective (or paradigm) of leadership style. The leadership paradigm has shifted with the arrival of new contemporary leadership theories which conceptualized the study of followership and complexity leadership theories. This new leadership paradigm shift has also made it acceptable to think "outside of the box" and think of leadership concepts as a bottom-up "followership inspired" conceptualized idea. One of these new contemporary leadership theories is the CLT. This paper has elected to explore the theoretical concept of the CLT. This theory is a concept that promotes and encourages the adaptation of agents (individuals) to have the freedom to explore new and different ideas with little or no control (inputs) from the hierarchical leaderships in the organization. In reference to the CLT, Uhl-Bien and Marion (2011) stated that as a complexity leader, the "key role of managers is to facilitate, guide, and set the boundary conditions in which successful convergence (e.g., self-organization) can take place and be effectively entangled with organizational systems" (p. 479).

2. Application of CLT in Real Life Situations

2.1. Adaptive leadership style in the U.S. Army service

One major aspect of a theory is to its applicability in everyday situations. Even though CLT is relatively new in leadership conceptualization, it has evolved and transformed quite a few organizations. According to the article written by Sharpe and Creviston (2013) titled "adaptive leadership: The way ahead for sustainment leader," they advocated and promoted the utilization of the complexity leadership concept (adaptive leadership) in the U.S. Army operations. The authors began by stating that

> Hybrid threats are innovative, adaptive, globally connected, networked, and embedded in the clutter of local populations. They can possess a wide range of old, adapted, and advance technologies, including the possibility of weapons of mass destruction. They operate conventionally and unconventionally; employ adaptive and asymmetric combinations of traditional, irregular, and criminal tactical; and use traditional military capabilities in old and new ways (Sharpe and Creviston, 2013. p. 5).

As a result to these enormous stated threats that the U.S. (and the U.S military forces) faces around the world, the authors (Sharpe and Creviston, 2013) argued that the way to confront and combat these dangerous threats is to change the paradigm of leadership concept in the U.S. Army. They argued that

> The success of future unified land operations will be defined by how well Army leaders continue to display the ingenuity and flexibility that served the Army so well throughout the transformation of our force structure and our engagement in two wars during this past decade. However, it will be the adaptive leader who successfully minimizes the uncertainties of when, where, and how the Army engages the multitude of security challenges it is certain to encounter in the future (Sharpe and Creviston, 2013. p. 5).

Sharpe and Creviston (2013) also argued that to meet these unique challenges, "senior Army sustainers must better empower subordinates to become adaptive leaders through leader development programs that focus on critical thinking and unstructured problem solving" (p. 8).

However, the fact of the matter is that some around the world, especially the Qaeda and its sublet terrorist groups, want to harm the United States of America and her citizens. For this reason and this reason alone, the United States Army must be battle ready at all times to confront any military and/or insurgent groups that may want to engage the U.S. Army in battles. Recognizing this fact, Sharpe and Creviston (2013) stated that "The shifting nature of the operational environment demands that we match tactical agility with institutional agility and that we develop leaders who can create an environment of collaboration and trust to promote adaptation and innovation" (p. 9).

3. The British Medical Journal (BMJ) Article on CLT

The second real-life usability of the CLT comes from the BMJ. This article was written by Pisek and Wilson (2001), directors at the St. Paul RCGP Quality Unit. The article was titled "Complexity, leadership, and management in healthcare organizations." In the article, the authors (Pisek and Wilson, 2001) laid out scenarios where the administration of thrombolytic drug on myocardial infarction patients have to be administered in a different way; this drug must be taken within a specific time after the myocardial infarction attack. They stated that

Following the classic performance management thinking, the current national service framework for coronary heart disease in the NHS has established an immediate priority target for acute care trusts to ensure by April 2002 that 75% of eligible patients receive thrombolytic drugs within 30 min of arrival at the hospital, while health authorities and primary care trusts are asked to aim for patients to receive them within 60 min of calling for professional help (Pisek and Wilson, 2001. p. 6).

Pisek and Wilson (2001) argued that in an organization that practices complexity theory, the organization would have suggested a goal of administering the drug to the patient as a whole within 60 min rather than administering it in a partial 30 min on arrival at the hospital. They suggested that in a complexity based organization "the goals and resources are established with a view toward the whole system, rather than artificially allocating them to parts of the system" (p. 7). In addition, the authors (Pisek and Wilson, 2001) advised that "Complexity thinking suggested that current organizational leaders in both policy and operations should begin looking more across the parts and at the system as a whole. The National Health Service (NHS) might be better thought of as the NHS (rather than as a fraction of the whole)" (p. 9).

As directors of a NHS hospital (St. Paul Hospital), the authors (Pisek and Wilson, 2001) felt that just by understanding and complying with the attractors alone (which are NHS desires for equity and efficiency) would not accomplish the changes that are needed in the NHS, but rather, "for the system to change, they generally require tension for change. Careful sharing of meaningful information that touched natural attractors or creates new ones that can lead those within the system to feel they must change" (p. 16). It is also imperative that the NHS understand that leadership apparatus in an organization as traditionally structured as the NHS, the system needs an adaptive leadership mechanism to help change the paradigm as it is currently been applied at the NHS hospitals. The authors Pisek and Wilson, (2001) partially concluded by stating that

Rather, those who seek to change an organization should harness the natural creativity and organizing ability of its staff and stakeholders through such principles as generative relationships, minimum specification, the positive use of attractors for change, and a constructive approach to variation in areas of practice where there is only moderate certainty and agreement (Pisek and Wilson, 2001. p. 22).

4. Historical Background of CLT

The questions that most people wanted to know and ask are; what exactly is CLT (which was derived from the complexity theory)? And how was it conceptualized? Well, the answer to these questions basically was that complexity theory was a theory that was originally introduced into the scientific disciplines by physical science scholars. Plowman et al. (2007) stated that "complexity theory was originally developed in the physical sciences where scientists were attempting to understand the complexity of nature, and increasingly found linear models to be ineffective in capturing the complex and emergent nature of phenomenon (Ashby, 1962; Holland, 1995; Kauffman, 1995; Prigogine, 1997)" (p. 342). Mason (2008) in his description of complexity theory stated that complexity was "developed principally in the fields of physics, biology, chemistry, and economics, complexity theory arises in some senses out of chaos theory in that it shares chaos theory's focus on the sensitivity of phenomena to initial conditions that may result in unexpected and apparent random subsequent properties and behaviors" (p. 36).

Avolio et al. (2009) explained that complex adaptive system (CAS) was originally conceptualized by physical science scholars. They asserted that CAS has its roots in the physical science disciplines

and it is "composed of interdependent agents that can operate simultaneously on the basis of certain rules and localized knowledge that governs the CAS, while also being able to adapt and emerge based on feedback from the system (Plowman and Duchon, 2008)" (p. 430 and 431). Avolio et al. (2009) also went on to give three leadership roles that CAS operates within in a bureaucratic organization: "Adaptive (e.g., engaging others in brainstorming to overcome a challenge), administrative (e.g., formal planning according to doctrine), and enabling (e.g., minimizing the constraints of an organizational bureaucracy to enhance follower potential)" (p. 431). As aforementioned, complexity theory was believed to have been developed originally at the physical science disciplines, but as a universal theory, there are multiple conceptualized complexity leadership theories and perspectives that have emerged since then. Some of these complexity theories and perspectives have been applied to leadership styles; however, the term CLT, as we know it today in the social science disciplines, was first developed by Uhl-Bien et al. to describe a specific type of leadership style. This leadership type, CLT, will be discussed in detail further down in this paper.

5. CAS

As a complexity adaptive theory, there is two acronyms CAS theory (CAS/CAST); CAS acronym means complexity adaptive theory and CAST acronym means CAS theory. Lichtenstein and Plowman (2009) described CAST as a system that explains the emergence of "system level order that arises through the interactions of the system's interdependent components (agents). The CAST view suggests that rather than being "in" someone, leadership - understood as the capacity to influence others - can be enacted within every interaction between members" (p. 618). Uhl-Bien and Marion (2009) expanded on the concept by saying that "the study of interactive dynamics of complex systems (CAS) embedded within contexts of larger organizing systems. The significance of CAS dynamics for the study of leadership can only be understood by recognizing the meaning of the term complexity" (p. 632).

As a complexity system model, Anderson (1999) described how "complex adaptive system models represent a genuinely new way of simplifying the complex. They are characterized by four key elements; agents with schemata, self-organizing networks sustained by importing energy, convolution to the edge of chaos, and system evolution based on recombination" (p. 216). He went on to say that "applying complex adaptive system models to strategic management leads to an emphasis on building systems that can rapidly evolve effective adaptive solutions. Strategic direction of complex organizations consists of establishing and modifying environments within which effective, improvised, self-organized solutions can evolve" (p. 216).

Finally, as a theoretical framework, complexity theory is believed to be a concept that allows for humanity (people) to express themselves in a free and unimpeded manner. Marion and Uhl-Bien (2001) described complexity theory as a nonlinear system that allows for its agents to have individual free minds and thoughts. They stated that "In the simplest term, complexity theory moves away from linear, mechanistic views of the world, where simple cause and effect solutions are sought to explain physical and social phenomenon, to a perspective of the world as nonlinear and organic, characterized by uncertainty and unpredictability (Regine and Lewin, 2000)" (p. 389). Schneider and Somers (2006) went on to argued that complexity theory is "a new set of ideas that transcends the physical, biological, and social sciences, referred to as complexity theory, has entered the realm of leadership research (Marion, 1999; Marion and Uhl-Bien, 2001; Wheatley, 1994)" (p.351).

6. CLT and Research

As a new contemporary leadership style (CLT), this paper explores different papers that have been written on CLT concept to better understand how useful and applicable the theory is in the real world. Beginning with the article written by Lichenstein et al. (2006); they proposed that

Leadership (as opposed to leaders) can be seen as a complex dynamic process that emerges in the interactive "spaces between" people and ideas. That is, leadership is a dynamic that transcends the

capabilities of individuals alone; it is the product of interaction, tension, and exchange rules governing changes in perception and understanding (p. 2).

Lichenstein et al. (2006) concluded by referencing Scott's (2004) reflective comments that argued that the nature of an emerging organizational leadership is the increased attention it gets through organizational activities. In addition, they argued that "leadership research has been focused on durable, distinctive properties of entities, a complexity-inspired model of leadership in events presents in an alternative conceptual framework, based in relationships, complex interactions, and influences that occur in the "spaces between" individuals" (Lichtenstein et al., 2006. p. 9).

In addition, in a theoretical article written by Uhl-Bien and Marion (2009), they focused their study on the function of an adaptive leadership. They Uhl-Bien and Marion (2009) stated that "we focus on the adaptive function, an interactive process between adaptive leadership (an agentic behavior) that generates emergent outcomes (e.g., innovation, learning, and adaptability) for the firm" (p. 631). They expressed the fact that "CLT is meso-model perspective that taps informal (CAS) leadership behaviors within the context of larger (bureaucratic) structures. In bureaucratic organizations, these behaviors are often suppressed or ignored, yet they can be invaluable to an organization seeking to enhance innovation, adaptability, or learning" (p. 647).

As a contrasts between the traditional top-down leadership style and the new conceptualized leadership style that advocated a bottom-up contemporary leadership style, Uhl-Bien and Marion (2007) looked at the traditional leadership models of the last century, leadership styles that practice top-down leadership style, compared to the new contemporary leadership styles that are mostly bottom-up leadership style. As such, they stressed that their study (article) draws from the "complexity science to develop an overarching framework for the study of CLT, a leadership paradigm that focuses on enabling the learning, creative, and adaptive capacity of CAS within a context of knowledge producing organizations" (p. 298). In their summation and conclusion, they argued that "we develop and outline key elements of CLT. We argued that while the Knowledge Era calls for a new leadership paradigm, much of leadership theory still promotes an approach aimed at incentivizing workers to follow vision led, top-down control by CEOs (Bennis, 1996; Zaccaro and Klimoski, 2001)" (Uhl-Bien et al., 2007. p. 315).

Martin and Ernst (2005) article asserted that "organizations are faced with complex challenges stemming from integrating societal change into business" (p. 82). To them, Martin and Ernst (2005) the organizational challenges demand new conceptual leadership paradigm. In their findings, they stated that the "result demonstrates a shift in the practice of leadership from more traditional, individual approaches to more innovative, collaborative approaches" (p. 82). Finally, Dann and Barclay (2006) wanted to trace "the development of complexity theories and proposes a complexity representation model (CRM) for management processes" (p. 21). They Dann and Barclay (2006) thought that the development of complexity theories would help to "translate key elements of complexities theories (e.g., self-organization, adaption, coevolution, and chaos) into a recognizable form and relate these to management practice (particularly knowledge management and learning)" (p. 21). Furthermore, they concluded that complexity theories applications should be offered to show the "relationship between the formal and informal aspects of the management environment and the CRM" (p. 21), which means that this environment will learn to adapt to minor perturbations.

7. Conclusion

In conclusion, as the author, I have to admit that I became convinced about CLT when I read Uhl-Bien and Marion (2011) chapter. The chapter detailed the concept as a theory that views leadership as a facilitator of ideas, rather than the ultimate "headman" who controls every aspect of the organization. I also thought the idea of having free flow of innovative ideas among people without any constraints or hindrance was a new paradigm in leadership study. The second article I read was also written by Marion and Uhl-Bien (2003); in that article, they detailed the connection between CLT and Al-Qaeda's organizational structure. I was flabbergasted to learn how complex the Qaeda organization was, and how the organization was built on a complex structure, which basically meant that it can operate without any "one person" in charge.

Although CLT may not be the leading theory in leadership study today, however, if the trends continue, I can see the concept become a major leadership phenomenon in the near future. In their compilation of theories, Gardner et al. (2010) favored the complexity theory article called the "New direction." These authors Gardner et al. (2010) had compiled 14 contemporary leadership theories, but the fascinating thing was that the complexity theory (new direction) article was the favorite among the leadership quarter journal readership. In the past decade (2000-2009), the group has seen over 80% growths in its readership. That, in other words, means that complexity theory, among other theories, is destined to be a major leadership theory.

References

Anderson, P. (1999), Complexity theory and organization science. Organization Science, 10(3), 216-232.

Ashby, W. (1962), Principles of the self-organizing system. In: von Foerster, H., Zopf, G., editors. Principles of Self-Organization: Transaction of the University of Illinois Symposium. London: Pergamon Press. p255-278.

Avolio, B., Walumbwa, F., Weber, T.J. (2009), Leadership: Current theories, research, and future directions. Annual Review of Psychology, 60, 421-449.

Bass, B.M. (1985), Leadership and Performance Beyond Expectations. New York, NY: Free Press.

Bass, B.M. (1997), Does the transactional-transformational leadership paradigm transcend organizational and national boundaries? American Psychologist, 52(2), 130-139.

Bennis, W.G. (1996), Becoming a leader of leaders. In: Gibson, R., editor. Rethinking the Future. London: Brealey.

Burns, J.M. (1978), Leadership. New York, NY: Harper & Row.

Dann, Z., Barclay, I. (2006), Complexity theory and knowledge management application. The Electronic Journal of Knowledge Management, 4(1), 11-20. Available from: http://www.ejkm.com. [Last accessed 2017 Jan 22].

Gardner, W.L., Lowe, K.B., Moss, T.W., Mahoney, K.T., Cogliser, C.C. (2010), Scholarly leadership of the study of the study of leadership: A review of the leadership quarterly's second decade, 2000-2009. The Leadership Quarterly, 21, 922-958.

Holland, J.H. (1995), Hidden Order. Reading, MA: Addison-Wesley Publishing, Addison-Wesley Publishing.

House, R.J. (1971), A path-goal theory of leader effectiveness. Administrative Science Quarter, 16, 321-338.

Kauffman, S.A. (1995), At Home in the Universe: The Search for the Laws of Self-Organization and Complexity. New York, NY: Oxford University Press.

Lichenstein, B.B., Uhl-Bien, M., Marion, R., Seers, A., Orton, J.D., Schreiber, C. (2006), Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. Emergence: Complexity and Organization, 8(4), 2-12.

Lichtenstein, B.B., Plowman, D.A. (2009), The leadership of emergence: A complex systems leadership theory of emergence at successive organizational levels. The Leadership Quarterly, 20(4), 617-630.

Marion, R. (1999), The Edge of Chaos. Thousand Oaks, CA: Sage.

Marion, R., Uhl-Bien, M. (2001), Leadership in complex organizations. The Leadership Quarterly, 12(4), 389-418.

Marion, R., Uhl-Bien, M. (2003), Complexity theory and Al-Qaeda: Examining complex leadership. Emergence, 5(1), 54-76.

Martin, A., Ernst, C. (2005), Leadership, learning and human resource management: Exploring leadership in times of paradox and complexity. Corporate Governance, 5(3), 82-94.

Mason, M. (2008), What is complexity theory and what are its implications for educational changes? Educational Philosophy and Theory, 40(1), 35-49.

Pisek, P.E., Wilson, T. (2001), Complexity, leadership, and management in healthcare organizations. British Medical Journal, 323(7315), 746-749.

Plowman, D.A., Duchon, D. (2008), Dispelling the myths about leadership: From cybernetics to emergence. In: Uhl-Bien, M., Marion, R., editors. Complexity Leadership Part 1: Conceptual Foundations. Charlotte, NC: Inform Age. p129-153.

Plowman, D.A., Solansky, S., Beck, T.E., Baker, L., Kulkarni, M., Travis, D.V. (2007), The role of leadership in emergent, self-organization. The Leadership Quarterly, 18(4), 341-356.

Prigogine, I. (1997), The End of Certainty. New York, NY: Free Press.

Regine, B., Lewin, R. (2000), Leading at the edge: How leaders influence complex systems. Emergence: A Journal of Complexity Issues in Organizations and Management, 22, 5-23.

Schneider, M., Somers, M. (2006), Organizations as complex adaptive systems: Implications of complexity theory for leadership research. The Leadership Quarterly, 17, 351-365.

Scott, W.R. (2004), Reflections on a half-century of organizational sociology. Annual Review of Sociology, 30, 1-21.

Sharpe, J.D., Creviston, T.E. (2013), Adaptive leadership: The way ahead for sustainment leaders. Army Sustainment, 45(1), 5-9.

Uhl-Bien, M., Marion, R. (2009), Complexity leadership in bureaucratic forms of organization: A meso model. The Leadership Quarterly, 20(4), 631-650.

Uhl-Bien, M., Marion, R. (2011), Complexity leadership theory. In: Bryman, A., Collinson, D., Grint, K., Jackson, B., Uhl-Bien, M., editors. The Sage Handbook of Leadership. Thousand Oaks, CA: Sage.

Uhl-Bien, M., Marion, R., McKelvey, B. (2007), Complexity leadership theory: Shifting leadership from the industrial age to the knowledge era. The Leadership Quarterly, 18(4), 298-318.

Wheatley, M. (1994), Leadership and the New Science. San Francisco, CA: Berrett-Koehler.

Zaccaro, S.J., Klimoski, R.J. (2001), The nature of organizational leadership: An introduction. In: Zaccaro, S.J., Klimoski, R.J., editors. The Nature of Organizational Leadership. San Francisco, CA: Jossey Bass. p3-41.