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THE ESSENTIAL ROLE OF LEADERS AND LEADERSHIP IN COMPLEX ORGANIZATIONS

A DISCOURSE OF THE ROLE OF LEADERS WITHIN THE CONTEXT OF COMPLEX ENVIRONMENTS

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The Essential Role of Leaders and Leadership

In Complex Organizations

Dr. Tan Kwan Hong

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The Essential Role of Leaders and Leadership In Complex Organizations

Introduction

Traditional leadership models have pre-dominantly adopted a leader-centric view of leadership, often exemplifying leadership traits and leadership styles as the foci of leadership development (e.g. Conger, 1992; Gardner et al., 2005; Orvis and Ratwani, 2010). Such models are gradually being perceived as inadequate in its comprehension of the increasing complexity and dynamism organizations now have to grapple with (Clarke, 2012a; Higgs, 2003). Fleeting transformations in the technological, social and economic environments have resulted in greater complexity and instability, imposing considerable constraints on traditional leadership constructs as guiding principles of organizational success (Uhl-Bien, Marion, & McKelvey, 2007).

Despite the existence of vast literature dedicated towards the elucidation of diverse leadership concepts (Day, 2001; Drath et al., 2008), previous attempts on explaining leadership and leadership development from the perspective of complexity sciences have been scarce (Turnbull James, 2011). This paper thus constitutes an initial attempt on the discourse of the role of leaders within the context of complex environments, build upon the theoretical underpinnings of the Complexity Leadership Theory (CLT).

This paper, in view of justifying the relevance and indispensability of leaders and leadership in complex environments (at least in the

theoretical setting), brings about an affirmation of the propositions set forth by complexity leadership theorists. The key complexity theories highlighted will consequently be linked specifically to the role of leaders and leadership development so as to justify the quintessential role of leaders in such environments, notwithstanding the recognition that leadership is understood to have an indirect control over organizational outcomes, and that organizations and their corresponding behaviors and behavioral implications are in, a multitude of ways, determined by their context.

Such an approach to the knowledge debate centering the specific role of leaders within the complexity context not only justifies that leadership is essential, at least in the theoretical realm, it also sets forth the specific manner in which leadership is important, and the specific manner in which the positioning of leaders can result in a heightened functioning of a complex system.

Through a thorough review of the academic literature dedicated towards the exploration of Complexity Leadership Theory (CLT) and Complex Adaptive Systems (CAS), their theoretical underpinnings and their relevant applications revealed the increasing relevance of these concepts towards facilitating organizations' adaptation within increasingly complex operating environments. Complexity leadership theory and its relevant concepts are increasingly positioned as a replacement of, or at least, as an alternative to traditional leadership theories when juxtaposed against the latter (Uhl-Bien, 2006).

Finally, the limitations of Complexity Leadership Theory (and hence the role of leaders) when evaluated through the lens of empirical research and

practice, will be expounded on to provide for a balanced view on the limitations of relevance of leaders within the complexity context.

Leadership as an Emergent Phenomenon

Traditional leadership theories have focused on the capabilities of individual leaders in explaining their effectiveness in performing leadership roles (McCauley & van Velsor, 2004). The focus on intrapersonal skillsets, such as self-awareness and self-regulation, are critical for the development of leaders (Day, 2001). Research has thus centered on the cultivation of formal leadership attributes in the process of leadership development (Day, Gronn, & Salas, 2004; Dragoni et al., 2009; Orvis & Ratwani, 2010; Reichard & Johnson, 2011).

Implicit in this contextualization of leadership development is the assumption that leadership is an act of influence; leaders are deemed to exert influence and authority over the system and over their followers to achieve results. Such a view of leadership corresponds well with traditional leadership theories hinging on leadership traits, behaviors and styles (Northouse, 2004).

The shortfalls of the abovementioned view on leadership are aplenty. Such an approach neglects the consideration that leadership is very much dependent on followers as much as it is dependent on formal leaders (Yukl 2002; Higgs 2003), neglects the effect on how differing contexts shape leadership effectiveness (Osborn, Hunt, and Jauch 2002), and constitutes a deficiency in the examination of the leadership process from a systemic perspective (Yukl 2002; O'Toole, Galbraith, and Lawler 2002).

Further examination of the leadership process has brought about the framing of leadership as a relational process between leaders and followers, such as that exemplified through leader–member exchange (Uhl-Bien, 2006), and in addition to the theories of shared leadership (Hillier, Day, & Vance, 2006), have transformed traditional notions of leadership from an individualistic concept to a collective, social concept. Leadership is thus comprehended as a property of relationships, and as a more distributed and fluid construct (Yukl 2002; Hillier, Day, and Vance 2006).

The complexity view of leadership, while affirming the need for the relational and distributive aspects of leadership, embeds these concepts within an extensive set of leadership practice analogous with the facilitation of dynamic systems and the interconnectivity within networks (Marion & Uhl-Bien, 2001). Complexity leadership is framed as an attribute of a complex system, and while it develops the notion of leadership from a relational perspective, applies this notion of leadership in the context of an adaptive system charged at responding to changes, navigating through ambiguities and dealing with complex issues within dynamic environments (Uhl-Bien, 2006).

The role of leaders and leadership within complex environments can be derived from two major assumptions underlying complexity theory. The first assumption proposes that open systems are characterized as being too dynamic and unpredictable to be easily interpreted by simple models (Marion & Uhl-Bien, 2001). Complexity theory thus stands in disagreement with reductionist approaches that leadership and its influence within complex environments can be comprehended by simple and simple and linear, cause–effect relationships (Prigogine 1997). This

results in the need for leaders to 'lead from the back'; instead of directly determining the constructs of a system, leaders play a critical role in enabling and facilitating the build-up of conditions within the complex system that in turn increases the likelihood of organizational success.

To fulfill the abovementioned role, leaders will have to permit the emergence of behaviors from individuals as constituents or from the overall system, rather than directing or controlling it. Leaders will also have to 'play along' with the system – adapting processes when needed so as to facilitate the conditions for emergence – and not attempt to plan for or adopt a linear set of directives towards organizational goals (Lewin & Regine, 2003).

The second assumption characterizes organizations as Complex Adaptive Systems (CAS) – systems that cannot be sufficiently comprehended by virtue of sub-dividing the system to its constituent components; complex interactions between the system and its environment brings about unpredictable and unforeseen implications (Uhl-Bien & Marion, 2009). Complex adaptive systems are characterized as open, neural-like networks consisting of interdependent and continuously interacting agents bonded by identical goals, purposes or outlooks (Cilliers, 1998; Holland, 1995; Langston, 1986; Marion, 1999; Uhl-Bien, Marion, & McKelvey, 2007). Complex adaptive systems are perceived to be capable of rapid adaptation to environmental changes through its inclinations to creatively address problems (Carley & Hill, 2001; Carley & Lee, 1998; Goodwin, 1994; Levy, 1992). Order in complex adaptive systems, is believed to emerge naturally from the multiple iterations or cycles of random interactions between agents operating within the system (Cilliers 2001). Leaders working within the complexity context will thus need to take advantage of these interactions as and when they arise and foster

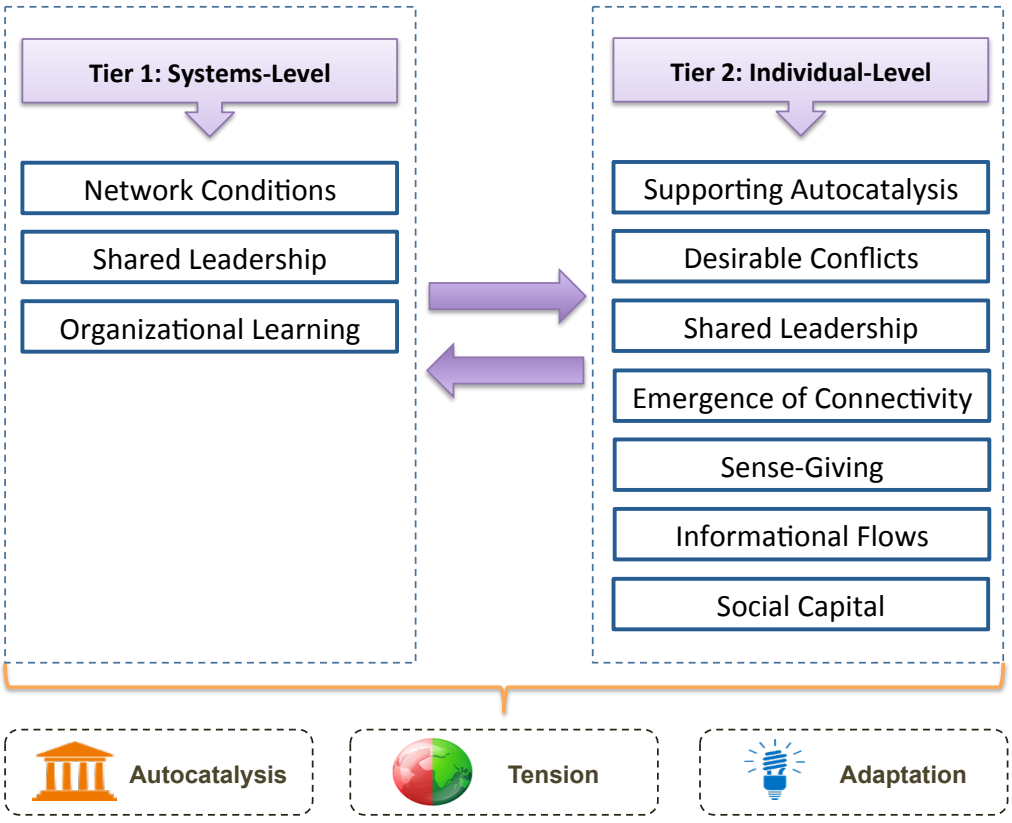
conditions for further interactions through which desirable outcomes are more likely to occur.

A fundamental constituent within complex adaptive systems is the existence of ensembles – groups of individuals and workgroups intertwined through common interests and inter-relationships. The interaction of ensembles within complex systems gives rise to the engagement of shared behaviors and activities that further result in shared understandings, and of which self-generative behaviors centering on innovation and problem solving arise (Marion & Uhl-Bien, 2001). Thus, the role of leaders are essential is this aspect. Leaders are required to facilitate the emergence of these useful yet random interactions, utilize them, and foster the conditions necessary in the promotion of bottom-up behaviors from which human and social capital results in distributed intelligent activity, a process termed as autocatalysis (Luke, 1998).

Leaders also facilitate the processes and contexts that result in these network dynamics, which can include the networks of interactivity, interdependent relational attributes between constituents, and the tensions and constraints within the network that brings about problem solving outcomes and adaptive behaviors (Uhl-Bien, Marion, & McKelvey, 2007). From this notion, leadership then constitutes an emergent phenomenon. Leadership becomes an emergent, interactive dynamic that arises from the various interactions within complex adaptive systems, giving rise to new knowledge and problem-solving outcomes (Lichtenstein & Plowman 2009).

The System-Level and Individual-Level Perspective of Complexity Leadership

Clarke (2012b) proposed the usage of the levels-of-analysis approach in the investigation of leadership. This paper proposes a simple 2-tier system for examining the relevancy of leaders and leadership within the complexity framework. The two tiers correspond to firstly, the Systems Level, and secondly, the Individual Level. Each tier or level depicts critical targets, actions and behaviors for leaders and leadership, with the view of generating the necessary conditions for tension and autocatalysis within the complex system. The generation of tension and autocatalysis in turn results in enhanced positive adaptation within the system.



First Tier: Systems-Level Leadership

The first tier corresponds to the systems-level of leadership. Three aspects of leadership are essential at the systems level: Network Conditions, Shared Leadership and Organizational Learning. These three aspects of leadership helps support the structures, cultures and processes that collectively represent the social system so as to culminate in the betterment of distributive intelligence and the enhancement of social capital within the system. Giddens (1984) affirms that due to the interactivity between individual leaders and the wider system – individuals act on the system and are simultaneously acted on by the system – the collective interactivity between individuals are thus able to affect changes at the systems level.

1. Network Conditions

By focusing on the network conditions inherent within a complex system, leaders can better improve the adaptive capacity of the system. Leaders, as agents within the complex adaptive system, must be attuned to interacting with each other and with the environment at high frequency in order to trigger innovative responses and behavioral outcomes (Brown & Eisenhardt, 1997).

Leaders are also essential in the recognition of, and the utilization of both the formal and informal structural connections between constituents, and the formal and informal proceedings (such as the communication patterns and mechanisms used for knowledge sharing) within complex social systems to facilitate emergent innovative outcomes (Balkundi & Harrison, 2005; Brown & Eisenhardt, 1997; Uhl-Bien, Marion, & McKelvey, 2007). Burt (2004) supports this notion, and went further to posit that leaders, acting as ‘brokers’ or ‘boundary spanners’ with dense

structural density (by having a high number of connections and interactivity with other agents within the system), are better able to translate information across groups and are better able to promote diversity in thinking and problem solving.

Leaders, as agents within the system, can also facilitate the adoption of change by facilitating 'structural closure', referred to as the extent to which the connectivity between agents within a network occur (Battilana & Casciaro, 2012). Through this facilitation, leaders can then guide the efficacious distribution of information between agents possessing different expertise, allowing for synergistic outcomes derived from the interactions between agents to better occur (Ensley, Hmieleski & Pearce, 2006).

2. Shared Leadership

Leaders within the complexity environment are vital in cultivating intimate patterns of interdependence between agents, so as to allow for an enhanced collective comprehension of complex problems, that will also better result in relevant, coordinated responses to complex issues within the complex system (Uhl-Bien, Marion, & McKelvey, 2007). Such will result in the better utilization of inputs and contributions from many individuals towards solving complex issues (Gronn, 2002; Spillane, Halverson, & Diamond, 2000), and through this shared intelligence, shared knowledge can simultaneously be created (Agranoff, 2007).

Hence, leaders are thus dispersed throughout the network, and the corresponding complexity leadership attributes are diffused throughout the system so as to coordinate and utilize this shared intelligence and shared knowledge creation. Implicit in this aspect of distributed leadership is the recognition that individuals can transit in and out of

leadership roles, depending on the circumstances, needs, tasks and challenges. Similar to elements of shared leadership, leadership in this complexity context thus becomes shared by agents as they transit in and out of leadership roles in the coordination of tasks (Feyerherm, 1994). This aspect of shared leadership is perceived as critical for the interaction, new knowledge generation, and mutual learning of organizational units as they congregate (Kauffman, 1995; Luke, 1998). Through engagements via spontaneous collaboration, intuitive working relationships, or through work practices via formal work procedures, leaders synchronize their actions to achieve synergistic outcomes and engage in problem resolution, giving rise to what Gronn (2002) would term as 'conjoint agency', an aspect of distributive leadership. Through these engagements, leaders play a role in facilitating the creation of shared meaning and the exploration of diverse views, all of which are vital components of successful collaboration between agents (Feldman et al., 2006; Schneider, 2009).

3. Organizational Learning

Leaders assist in knowledge co-creation within complex adaptive systems, underscoring the importance of organization learning in capturing key processes synonymous with innovation and adaptation. Several concepts from the realm of organizational learning can be used to examine the relevance of leadership in complexity environments (Huysman, 2004; Ortenblad, 2002; Wang & Ahmed, 2003).

Deriving inspiration from Huber's (1991) information processing perspective Crossan, Lane and White (1999) proposed the '4I' process of organizational learning within complex environments, and its respective levels of value. Leadership, on an individual level, consists of *Intuiting*

and *Interpreting*; leaders intuit on proceedings and interpret diverse and complex information. Leadership, on a group level, centers around *Interpreting* and *Integrating*; leaders interpret diverse and complex information, and integrate actions and perspectives from agents within the group. Leadership, in an organizational level, deals with Integrating and Institutionalizing; leaders integrate actions and institutionalize them into formal systems and processes. This transforms learning (which is largely experiential in this context) into both explicit and implicit systems, rules, routines and proceedings within the 'memory' of the system (Walsh & Ungson, 1991; Zhou, 1993).

Leaders create conducive conditions that enables empowered interactions between agents with a view of new knowledge creation, addressing complex problems and resolving tensions within the system (Kauffman, 1993). Dixon, (1997) proposes that silo-working mentalities between divisions be reduced so as to promote a systems perspective for organizational learning. Knowledge creation is henceforth a social undertaking that calls for leaders to comprehend information, derive novel meanings and co-create new worldviews (Chiva, Grandio, & Alegre, 2010; Hannah & Lester, 2009).

Second Tier: Individual-Level Leadership

While the previous section delves into the relevance of leadership and its relation to structures, cultures and proceedings at the systems level of analysis, the focus in this section centers upon leadership and its relation to formal and informal individual leadership outcomes within the complex system. The performance of individuals in both formal and informal leadership capacities is in alignment with Gronn's (2009) construct of hybrid leadership; individualized leadership can remain in

existence with, and mutually interact with distributive leadership dispositions within complex systems. For example, effective combinations of formal and informal leaders on an individual level are essential in channeling the innovative aspects of distributive intelligence. Additionally, from a complexity perspective, rather than interpreting the effects of individualized leadership as mere interpersonal influence, the leaders' role transforms to that of guiding the context of the complex adaptive system for spontaneous and emergent leadership outcomes among other agents. The significance of individualized leadership in the complexity context is highlighted in seven ways.

1. Supporting Autocatalysis

Leadership is essential in the organization of the operating environment to bring about interactions among agents. Formal leaders can provide more autonomy to team members, empower team members to engage in complex problem solving, improve delegation of workflow and proceedings, and foster the creation of networks to engage in complex tasks. To achieve these, leaders facilitate the distribution of skills and knowledge between actors of the conflict, empowering these actors towards a resolution of conflicts as an emergent outcome (Graen & Uhl-Bien, 1995). Finally, because leaders facilitate the interdependence and interactivity between agents, leadership behavior is essential (Friedrich et al., 2009).

2. Facilitating Desirable Conflicts

While leaders are also expected to resolve conflicts and cultivate cooperative relationships, as expounded in the case of the leader-member exchange (LMX) theory (Graen & Uhl-Bien, 1995), paradoxically, leaders can also be empowered to disrupt existing patterns so as to

generate disequilibrium within the complexity environment (Lichtenstein & Plowman, 2009). Uhl-Bien, Marion, and McKelvey (2007) proposes that complex leaders bring about adaptive tension so as to foster the interactive dynamics that culminates as fundamentals for the emergence of ensembles. This implicitly requires that leaders provide and facilitate platforms that offer opportunities for agents to bring to light their conflicting viewpoints, needs and goals.

Leaders embrace the unforeseeable, and by facilitating the emergence of constructive controversy, in turn destabilize the system towards a disequilibrium state, allowing the system to alter its operational characteristics. This practice also alters the conditions in which agents operate, By creating tension, novel ideas, possibilities and dynamic responses to complex issues can thus emerge (Lichtenstein, et al., 2006).

3. Creating Structures of Shared Leadership

Through the lens of complexity leadership theory, leaders coordinate and coach, but refrained from controlling any proceedings. It is through these facilitation-oriented behaviors give rise to the emergence of unplanned self-organizing and self-supporting networks. Leaders are essential in the creation of relevant conditions and conducive climates essential for building social capital and augmenting social exchanges to maximize the emergence of adaptability and creativity (Graen and Uhl-Bien 1995).

Friedrich et al. (2009) went on to map the critical processes that lead to the mergence of shared leadership constructs. These key processes identified include the leadership skillsets of the formal leader, leader-team exchange and delegation, team performance frameworks on collaborative problem solving and conflict management, communication patterns between members, team affective climate and the distinctions of

team and leader networks. Therefore, through the key processes identified, leaders play an essential role in constructing structures of shared leadership,

4. Facilitating the Emergence of Connectivity

Leaders within the complexity context are essential in facilitating the emergence of new networks and the fostering of new connections within open systems (Gnyawali & Madhavan, 2001). This implicitly implies that leaders continuously allow for the participation of new actors within the system, and embrace diverse modes of participation by each actor; leaders allow for actors to determine their mode, intensity and frequency of interactivity when they participate within these networks (Regine & Lewin, 2000). This also entails that leaders empower the conditions that allow actors to develop shared goals and objectives (Taggar & Ellis, 2007).

5. Facilitating Meaning-Making and Sense-Giving

While complexity leadership theory affirms that complex systems are self-sustaining and adaptable to dynamic environments, the need to guide the system on the right track is paramount. Leaders are essential in the engagement of giving sense and creating meaning on undertakings between agents within the system as a means of promoting shared understandings among these agents (Foldy, Goldman, & Ospina, 2008). Leaders facilitate by guiding the framing of complex issues essential for a shared vision among actors. Leaders are thus required to dissect complex issues and how they relate to the overall system, and to think in terms of how sub-systems interact with the external environment and with each other (Senge et al., 2008).

6. Facilitating Informational Flows

Leaders are essential when it comes to ascertaining barriers to the entry, distribution and flow of information both within the system and between the system and the environment. Consequently, individuals endowed with heightened access to information, or endowed with pivotal information within systems, are more likely to be endowed with greater network centrality, which was found to correspond to leadership emergence (Mehra et al., 2006). The distribution of knowledge and expertise residing within specific locales within the network is likewise, paramount to the emergence of shared leadership (Friedrich et al., 2009).

7. Developing Social Capital

Leaders are essential in the development of social capital within complex systems. Social capital facilitates knowledge transfer (Levin & Cross, 2004), and cognitive social capital is established via the development of shared systems of meaning and acts of shared meaning making between agents (Tsai, 2000). Relational social capital, on the other hand, is established through social exchanges and reciprocity of obligations that culminates in trust and respect between agents (Clarke, 2011). Leadership is thus essential in this aspect, in terms of the provision of relational support and the enhancement of social ties between agents within the network.

Clarke (2005, 2010a, 2010b) proposes the usage or organizational developmental techniques to facilitate the development of social capital. Such techniques include inter-departmental information briefing sessions and educational and training programs for the cultivation of relational skills.

Relevance of The Model

The leader-centric notion of leadership has traditionally neglected the complexity and systems aspect of leadership development (Osborn, Hunt, & Jauch, 2002; Uhl-Bien, Marion, & McKelvey, 2007). This has brought about a narrow and linear perspective of what constitutes as leadership development.

Thus, the proposed model not only seeks to affirm the relevance and essentiality of leaders and leadership within the complexity context (at least theoretically), the model also seeks to identity and classify complexity leadership attributes on the systems-level and the individual-level so as to better enhance an organization's capacity for autocatalysis, adaptive tension and adaptation. The notion of shared leadership is embraced within the complexity leadership construct, where agents collective 'lead' various aspects of problem solving.

Mixed Empirical Results On The Relevance of Leadership In Complexity Contexts

While it can be argued theoretically that leaders and leadership are still essential in complex organizations, empirical research on complexity leadership is still in its initial stages, and a thorough review on the literature on complexity leadership reveals mixed results on the relevance of leadership in complexity settings.

Results on the relevance of leaders and leadership within complex systems are beginning to emerge (Attwood et al., 2003; Bovaird, 2008; Griffin, Shaw, & Stacey 1998; Ovretveit, 2005; Seel, 2000; Shaw, 1997; Stacey, 1996; Umble et al., 2005). Organizations are also reported to be implementing leadership development programs with regards to

facilitating complexity leadership behavior in their work teams (Morris & Williams, 2012). Yet, limited insights exist to suggest the relevance of leadership in facilitating organizational change and adaptation (Brown & Eisenhardt, 1997; Houchin & MacLean, 2005; Pascale, 1999; Shaw, 1997). The generalizability of these results is also questionable, given the highly contextualized nature of these researches.

Additionally, complex adaptive systems require 'appropriately structured networks' rather than the centralized coordination of tasks and agents to invoke problem solving in a non-linear and creative manner (Uh-Bien et al., 2007). Thus far, our knowledge on what exactly this 'appropriately structured networks' represent in real life is still pre-mature. The inability by complexity leaders to accurately ascertain the manner and timing in which order or disruption will occur negates the relevancy of the role of complex leaders in facilitating the adaptation to these changes.

Similarly, although Goffin and Koners (2011) believe that extensive interpersonal relationships and interaction are thought to promote the transfer of tacit knowledge relevant for problem solving and innovation (Polanyi, 1966), much of our comprehension in the manner this occurs and in the role of leadership in facilitating these transfers remains at best theoretical (Nonaka and Takeuchi 1995).

Conclusion

While it can be argued, at least theoretically, that leadership is still essential for organizations despite not having direct control over organizational events, a fair conclusion that recognizes the limitations of implementing complexity leadership in practice renders the relevance of

leaders in these complexity contexts questionable in real life and in the context of empirical research. A more definite empirical conclusion of the exact relevance of leadership within complexity contexts will hopefully surface in the near future.

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