

Complexity Theory: A New Way to Look at New Public Management

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Abstract

In the last three decades, there has been a worldwide wave of modernization and reform affecting the public sector. This movement reflected on the study of public administration by moving to New Public Management (NPM) which draws on new institutional economics (NIE) and private sector managerialism. The main hypothesis of NPM is that greater market adaptation in the public sector will lead to a more effective and more efficient form of government. From this, the postmodernist movement emerged as a critique of the positivistic public administration with its single-dimensional objective epistemology. Complexity theory has emerged as an important theoretical vehicle for understanding public sector management. With its unique perspective towards public sector management, complexity theory extends beyond a predetermined, single dimensional analysis, and provides a more comprehensive and holistic approach that takes into account the reality that the given situation may be subject to unforeseen and uncontrollable factors. This paper aims to examine the role of complexity theory in the study of public sector management. With its origins in natural science, complexity theory is an evolutionary approach that is often considered to be a subset of Systems Theory. In order to clearly understand the significant contribution of complexity theory to the explanation and understanding of public sector management, one must draw parallels between NPM, with its relatively linear and deterministic vision to public sector management, and the nonlinear complex theoretical approach. As such, this paper highlights the main theoretical assumptions of NPM, in accordance with its roots in new institutional economics and business-type managerialism, and then applies the lens of complexity theory to ascertain how complexity theory provides new perspectives to the study of public sector management. Finally, this paper highlights the main characteristics of the complexity approach to public administration. This section identifies the contributions of the complex approach to our understanding of the complexities of public sector management.

Keywords: Complexity Theory, Public Administration, New Public Management, Chaos Theory.

New Public Management and Complexity Theory

Since the mid-1980s, there has been major shift in public sector management theory and practice which materialized with the adoption of NPM (Hood & Dixon, 2015). Rather than focusing on formal organizational structures, bureaucracy, rational actors' behaviour and policy implementation, public management had become subject to revolution in management thinking, which reached the foundation of the traditional bureaucratic structure and the principles of public sector management (Hyndman, & Liguori, 2016; Terry, 2015). The emergence of NPM was the result of the political, social and economic changes that took place in the decades leading up to this time. In the aftermath of the 1970s economic crisis, governments began reconsidering the then current form of public management. A move associated with the rise of theoretical arguments by conservative market economists, who highly influenced the core ideology of NPM (Hughes, 2012). The influence of NIE (i. e. public choice theory, and agency theory) as the root of NPM had been translated into the main ideological components of NPM. Drawing from public choice theory, NPM conceived traditional public sector management as a complex bureaucratic process, which was deemed highly inefficient and ineffective, and much too slow moving due to the hierarchical chain of command which governed every individual within the boundaries of the public organization. Noted was that the politicians', as well as the public servants' main motivations were not civic ideals, but rather self-interest and utility maximization (Tullock, 1962; Niskanen, 1971). Further, NPM defined relationships within the then existing structure of the organization as a chain of low-trust principal/agent relationships with contractual relationships linking incentives to performance (Valkama, Bailey, & Anttiroiko, 2013; Bouckaert, 2012; Dunleavy & Hood, 1994). These perceptions were translated into the NPM's calls to: (1) adopt practices of performance contracting; and, (2) reform existing government department structure into either government corporations or state-owned enterprises in order to eliminate both the rent seeking opportunistic behaviour and the principal/agents relationship (Behn, 1998; Osborne & Gaebler, 1992; Hood, 1991). NPM also granted public managers operational flexibility and a more significant role than before, while holding them accountable for the performance of the enterprises through a system of rewards and sanctions aimed at limiting the presumed principal/agent relationship (Verbeeten, & Speklé, 2015; Laegreid, & Christensen, 2013). According to the public choice model of "rational actor", another main argument of NPM is that competition and market based approach to public service would provide the necessary incentives to bureaucrats, motivating them to maximize their own utility functions. Therefore, according to the theoretical foundation of NPM, and based on predetermined economic assumptions, the argument made is that the privatization and opening of public goods

markets for private sector and non-profit sector provision, would stimulate quasi-market competition and lead to the production of both better prices and better public goods provisions (Hughes, 2012). Contrary to this NPM encoded theoretical assumption, complexity theory stress indeterminacy (Haynes, 2009). According to complexity theorists, privatization is not only subject to economic and managerial assumptions, but it is a process that is “time- and context dependent” (Haynes, 2009, p.15). In his book, *Managing Complexity in the Public Service*, Haynes (2009) provides the reader with a clear and concise overview of the study of one of the leading privatization processes that took place in UK. He argued that the privatization of the railroads industry in the UK, led to the collapse of this industry because a series of unexpected and uncontrollable events such as: a global financial crisis, a newly elected government, and the financial problems with investors. As such, the complexity perspective towards public sector management extends beyond a predetermined, single dimensional analysis, and provides a more comprehensive and holistic approach that takes into account the reality that the given situation may be subject to unforeseen and uncontrollable factors. The following section introduces the complexity approach while highlighting its origins and some of its main arguments.

Evolutionary Approach to Public Management

The ideas of complexity theory in public management stretched the traditional vision of public organization to accommodate the complexities within new developments (Cairney, 2012). Complexity theory has its origins in natural science. It is not a unified and homogenous theoretical perspective, but rather, it is a dynamic representation of the phenomena. Complexity theory deals with organizational systems’ change and the complexities which arise when different parts of the organizational system interact (Teisman & Klijn, 2008). The theory tries to change the understanding of public management organizational systems through introducing organizational systems as Complex Adaptive Systems where positive and negative feedback between these systems defines the organization aspects (Haynes, 2009).

In this context, public management becomes a process that is interdependent, complex and interconnected with many unexpected and uncontrolled events and outcomes. Different environmental factors will intervene to shape the public management process; factors which may be either minor details or major strategic shifts which result in disorder and disruption (Klijn, & Koppenjan, 2014). Complexity theory introduces new theoretical perspectives that have very similar characteristics and may be identical to theories in the fields of physics and biology and which reject reductionism and predictability (Grobman, 2005). Therefore, some theorists argue that the complexity approach to public management comes as part of the postmodernists’ movement into social sciences which reject the current positivist approach (Ferlie, McGivern, 2013). Postmodernists theorists (e.g, Foucault, Lyotard, Derrida, Rotry) in social science rejected the technocratic approach and argued that the world is unpredictable and full of unstable relationships (Dobuzinskis, 1997).

The complex perspective on public management acknowledges the “dynamisms” of the management processes to explain and understand the impact of the evolving interactions and interdependencies in public management (Klijn and Snellen, 2009, p. 34, Kiel, 1994). Complexity theorists argue that one of the major weaknesses of current organizational theory is the lack of explanation it provides re change and stability; too often, the current theory deals with the same unified body of knowledge that focuses on explaining stable behaviour in isolation from external and internal dynamics (Byrne, & Callaghan, 2013). Returning to the privatization of Railways, it was noted that the entire analysis neglected the dynamics of the privatization process and the developments of this process. The process was only subject to the economic and managerialist assumptions ignoring the other dynamics that may develop and evolve. Therefore, complexity theorists emphasized the valuable contribution of complexity theory to public administration, highlighting how the theory does not focus entirely on causal relations in order to understand and explain specific phenomena, but rather extends beyond this and works to highlight the dynamic evolution of such phenomena in order to understand and emphasize their development (Teisman & Klijn, 2008). In their work, Teisman and Klijn (2008) introduced the main characteristics of complexity theory which emphasizes how the complex approach provides an important theoretical vehicle for understanding public sector management. These characteristics are based on the concept of nonlinear activity, the notion of context and landscape, and self-organizing capacities (Morrison, 2012).

Nonlinear Activity

The first characteristic of complexity theory is its focus on the dynamics of any specific phenomena in public administration while examining its development process over time (Teisman & Klijn, 2008). Based on the complexity theory perspective, there are a variety of external forces which guide the development and co-evolutionary process of any phenomena in the realm of public administration (Osborne, Radnor, & Nasi, 2013). Change is explained and understood as an evolving non-linear activity that is an outcome of the influence of different external forces. An understanding supported by Haynes’ (2009) argument on the privatization processes, which articulates that the process itself is subject to different factors that extend beyond the initial conditions and assumptions made, leaving the process as the subject of - and shaped and influenced by - different factors such

as global economic conditions and political environment.

Nonlinear activity in the science of complexity also led some theorists to reveal what Kiel (1994) referred to as “nonlinear dynamics”, an element common to all complex systems (Kiel, 1994, p.4). These nonlinear dynamics were called “chaos theory” (Kiel, 1994). The main contribution of chaos theory is that it explains how disorder may generate cycles and rhythms that help the systems transform and cope with the outside world on a long-term basis, creating order that was not initially anticipated (Haynes, 2009).

This understanding of self-organization - as linked to chaos - is a means to explain how an organization of diverse individuals and / or entities may come together to self-organize, in response to changes within the larger entity (Klijin, 2008). The concept also attempts to explain the effects of minute details on a large organizational system, and how these details may accumulate and lead to disorder. Haynes (2009) referred to this as the “butterfly effect”, and explained how managers do not know the effects of the details in relation to the larger features within the organization.

The Notion of Context and Landscape

The second characteristic of complexity theory highlights the impacts of context and landscape to explain phenomena. Complexity theorists use context and landscape to refer to the surroundings in which living beings exist and behave. The theory highlights the impact of context and landscape on public officials’ behaviour and how the context and landscape in which public managers perform will ‘normally’ change constantly (Koehler, Kress, & Miller, 2014).

This concept proved a significant contribution to the application of NPM. Under NPM, public organizations became more results-oriented and adopted many private sector mechanisms to public service delivery (Frederickson, Smith, Larimer, & Licari, 2015). The application of new public management requires new contractual arrangements, new organizational forms, and new operating procedures. Complexity theory emphasizes how these organizational changes are subjected to the “dynamic behavior of the specific context and landscape in which it has to find its place,” (Teisman et. al, 2009, p. 188). The context and landscape may refer to the surrounding political arena with voters, policy networks, and media. Therefore, complexity theory highlights how context and landscape are influenced by the different events and different actors (Maggitti, Smith, & Katila, (2013).

Self-Organizing Capacities

The third and final characteristic of complexity theory is the notion that entities in public administration, whether they are organizations, actors, or processes, do “not (only) behave according to laws or principles, but they have self-organizing capacities”, which are built on interaction and feedback (Teisman & Klijin, 2008, p.289). Complexity theory makes use of complex adaptive systems to describe entities (Teisman et al, 2009). According to the theory, complex adaptive systems are systems of individual agents, who have freedom to act in ways that are unpredictable, their actions are interconnected and such actions may change the context for other agents (Blackman, 2001). In this context, “actors are self-organizing; creating their own perception of what they want and how to behave in the landscape they are in” and therefore functioning as, and within, an adaptive manner (Teisman & Klijin, 2008, p. 289). These systems are complex, diverse and have a great many connections between them. They are also adaptive, which supports and furthers their capacity to learn from experience and systems in order to illustrate the interdependency between the elements (Grobman, 2005).

Conclusion

Throughout the paper, the concept of complexity theory and its application to the field of public management have been discussed. The main focus rests on the contribution of the theory as it explains and understands phenomena in public management, while emphasizing the dynamics of the development and evolution of the phenomena. Complexity theory introduces a very powerful theoretical framework that highlights the interactions and the interdependencies within public management. However, there have been many critiques of attempts to apply complexity theory and its models to public management. These critiques questioned the ontological and the epistemological stance of the research methodology in complexity research. Buijs et al, (2009) highlighted the overwhelming intricacy of the complex approach which “does not necessitate a postpositivist approach, nor does it necessitate a positivist approach” (p. 42). Another critique of the complex approach is with regards to the general nature of the theory; the lack of empirical verification of claims; and the use of concepts not suited to an organizational context (Rosenhead, 1998). Other theorists who have criticized complexity theory state that the theory is “very abstract and very general” (Pollitte, 2009, p. 213), arguing that faulty is the theory’s general approach to describing and elucidating the whole of the modern condition in public management without concrete examples or empirical evidence (Pollitte, 2009). This critique indicates the unenlightened tautologies of complexity theory which highlight its general and abstract concepts. This epistemological critique brings to the fore legitimate concerns with regards to the application of this theory in the realm of public management. On one

hand, complexity theory identifies context and interpretation which borrows from postmodernism. On the other hand, the origin of complexity theory is in natural science which gives this theory positivist criterion. Hence the reality that the vision itself is very broad, and which naturally leads one to question the usability of this complex representation, ultimately posing the question: does this level of complexity exceed our human capacity to understand?

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