

Insights from PGI Literature Review on Living Systems and the New Synthesis of Public Administration

Prepared by **Raynold W. Alorse**
Edited by **Jocelyne Bourgon P.C., O.C.**
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The New Synthesis (NS) Initiative was launched with the explicit purpose of exploring the new frontiers of public administration to provide practitioners with a mental map that would better equip them to face the challenges of serving in the 21st century.

The NS Initiative is a collaborative international research initiative that has been underway for the past ten (10) years. It was developed in partnership with distinguished academics from a variety of disciplines and senior public sector leaders from countries with different governing systems operating in very different contexts, cultures and circumstances. Seeking insights from theory and practice, and testing ideas in a diversity of environment are a trade-mark of the New Synthesis Initiative.

Following a recent review of the literature on systems thinking and complex adaptive systems, this review will focus on living systems thinking and its relevance for NS.

Living Systems Thinking

Living systems thinking grew from systems theory movement during the first half of the 20th century. Living systems are a subset of general systems and they have similar features of complex adaptive systems. They depend on similar functions (subsystems) to thrive in complex environments and they continuously evolve.

What are Living Systems?

Sweeney (2011), uses the expression “living systems as a metaphor, to represent an animate arrangement of parts and processes that continually affect each other.” Examples include the human body, family and business. Sweeney (2011) notes that one way to identify a living system is by observing if it changes over time; living systems grow and evolve. Another way is to observe how the parts are interacting. Mechanical systems display a direct relationship between problem and solution (e.g., if a telephone stops working, someone can fix it): this is not the case for living systems.

Living systems have a diversity of patterns of connection and interaction, webs and networks capable of producing breathtaking synergy. To understand living systems means to gain an appreciation of the connections that make up a whole system and of the patterns revealed by these interconnections. Brown (2002) outlines the key common characteristics of living systems:

- They function as “a whole”, manifesting properties that are not evident in its parts;
- Living system are made up of subsystems that in turn holds membership in one or more larger systems, forming a kind of “nested hierarchy.”
- Living systems respond to change; they survive and thrive within constantly changing environmental conditions, and with the constant flow of energy, substances, and information through them.
- Living systems adapt to changes in their environment, and they learn, grow, develop and evolve.

What are the Principles of Living Systems?

Capra (2012) developed the concept of “Nature’s Patterns and Processes” with the Center of Ecological Literacy (CEL) in Berkeley, California, and defines six principles that characterize living systems:

- **Networks** - All living things in an ecosystem are interconnected through networks of relationship. They depend on this web of life to survive.
- **Nested systems** - Nature is made up of systems that are nested within systems. Each individual system is an integrated whole and—at the same time — part of larger systems.
- **Cycles** - Members of an ecological community depend on the exchange of resources in continual cycles.
- **Flows** - Each organism needs a continual flow of energy to stay alive. The constant flow of energy from the sun to Earth sustains life and drives most ecological cycles.
- **Development** - All life — from individual organisms to species to ecosystems — changes over time. Individuals develop and learn, species adapt and evolve, and organisms in ecosystems coevolve.
- **Dynamic Balance** - Ecological communities act as feedback loops, so that the community maintains a relatively steady state that also has continual fluctuations. This dynamic balance provides resiliency in the face of ecosystem change.

These principles capture some of the central themes covered in living systems literature, including autopoiesis (self-making); self-organization (complex systems maintaining stability without external interference); and feedback loops (circular arrangement of causally connected elements).

Living Systems Theory (LST)

James Miller is widely recognized as the author that laid the foundation for a general

theory of living systems. His book, *Living Systems*, published in 1978, focused on the structure, interaction, behavior and development of living systems. A significant fact about living things is that they are open systems. Miller’s view is that life is a continuum and living systems are organized into subsystems that performs essential functions.

Brown (2002) notes that a general living systems theory moves away from breaking things down into their elementary components and focus instead on exploring phenomena in terms of dynamic patterns of relationships between organisms (organisations) and their environment.

Living Systems Thinking and Relevance for New Synthesis Initiative

- The New Synthesis of Public administration has integrated the core principles of living systems thinking. This transforms public organisations into open systems more dynamically connected to their environment and in constant interactions with multiple agents in society. This underlines the importance of feedback loops and the need for government to explore and encourage self-organisation, the co-creation of solutions and the co-production of public results.
- NS has argued that public organisations that do not actively explore the potential for self-organisations and co-production do not fulfill their mission, shortchange government by reducing “the range of options available to government and impose a higher cost than necessary on society” (Bourgon, 2017:59).
- Bourgon (2011: 23) notes that “we live in a networked society that consists of a web of networks interacting with each other.” To achieve viable solutions, public organizations must be able to work across a web of interrelationships,

across government and across sectors to generate practical solutions by making the best possible use of existing resources, means and capabilities.

- Contrary to a ‘closed-system’ perspective whereby agencies assume that they do not require much interactions with their environment (e.g., operating with minimal interaction with others), NS calls for an ‘open system of governance’ whereby governments interact with other systems in their external environments (Bourgon, 2011). An open concept of governance sees the economic, social, political, technological and environmental systems as intertwined and interdependent (Bourgon, 2011).

Areas for Further NS Research

- The NS Initiative is an innovative and paradigm-shifting approach to serving and governing in the 21st century. It blends systems theory, complex adaptive system thinking and living systems to encourage exploration and invention of viable and pragmatic solutions to complex issues.
- Although NS is aligned to the most recent literature in the field, it has paid insufficient attention to the environment, the interactions between human systems and other living systems, and the importance of ecological literacy for public sector leaders. This will be explored in further NS research.
- The NS Initiative will undertake further work on the functioning of human living systems. The current literature on human living system remain relatively sparse and it does not provide much insights to guide government actions and decisions. This topic has been explored more deeply in a PGI working paper.

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NS is an international co-operation initiative led by The Honourable Jocelyne Bourgon P.C., O.C.