

GOVERNANCE – A SYSTEMS PERSPECTIVE

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ABSTRACT

Purpose – The main purpose of this paper is to argue that both the effectiveness and efficiency of governance can be improved, and even transformed, if it is informed by systemic thinking. A systems perspective provides for a more appropriate, more holistic and a more integral approach towards the strategic planning and dissolving of complex problems.

Design/methodology/approach – A brief overview of governance as a concept within a South African (SA) context is followed by an overview of systems aspects, systems methodologies and related frameworks. These methodologies are applied to aspects of governance in SA. Conclusions are made, followed by recommendations regarding the future application of systems principles for governance purposes.

Findings – The prevailing concept of governance in SA is primarily based on simplistic processes that negate the interior realities of both individuals and the collective that co-produce the visible worlds. Current practices, unethical behaviour based on pre-conventional worldviews, and short term (five year) linear and simplistic thinking, are inadequate and inappropriate to address the challenges emerging from complex environmental contexts. The visible symptoms of this reality are expressed in terms of the ineffectiveness and inefficiency of current governance systems. A systems approach to governance provides powerful methodologies that can facilitate more effective and efficient governance performance. Governing actors need new worldviews and a holistic, integral consciousness as well as skill in the use of systems methodologies to govern more competently. Systems methodologies produce new knowledge, insight and understanding that can facilitate wise choices.

Originality/value – The value of this contribution is that concepts and methodologies from the domains of systems thinking and Futures Studies are applied to evaluate the concept of governance in SA as a system. Governance effectiveness and efficiency within all spheres of government can be improved through the application of systems methodologies.

Keywords – governance, systems, complex systems, systems approach, systems methodologies

1. ORIENTATION

People in government require adequate skills and competencies to meet both the current and future challenges put to them by the dynamic and turbulent complex systems they are mandated to govern. Numerous factors contribute to the changing contexts and emerging problems that governments have to deal with. Globalisation, demographic changes, political events and the development of technology are some of the major drivers of change that affect society today, each adding additional dimensions of complexity to the realm of governance. Global risks add complexity. Risks such as interstate conflict and state collapse, failure of national governance, natural catastrophes and water crises, failure of climate-change adaptation and many others have to be dealt with (World Economic Forum, 2015). All these factors have both global and local, as well as short term and long term impacts and implications.

Much wisdom is therefore required to be able to govern effectively, given the reality of limited resources and endless demands upon resources. Such wisdom should be based on insight and a proper systemic understanding of the relevant situation. However, the quality and richness of the insight and understanding will depend upon the adequacy of the cognitive and conceptual processes that are used to collect and to interpret relevant data and information. Fortunately the integrated use of systems methodologies offer an approach towards addressing the complexity that governance actors are challenged with. Although this approach is not perfect it is a major improvement upon many other ineffective systematic approaches based on linear, superficial and simplistic thinking that are currently in use.

This paper deals with three interrelated themes:

- The concept of governance embedded within a containing environment is reviewed in terms of the conventional literature on governance.
- Systems concepts, methodologies and perspectives that are essential in dealing with all types of systems including complex systems are summarised.
- Systems methodologies are used as lenses to evaluate different aspects of governance to demonstrate the application thereof.

The paper concludes with a summary of the key findings of this research and a number of recommendations that should contribute to a significant improvement in the quality of good, effective and efficient governance, when implemented.

2. GOVERNANCE AS CONCEPT

2.1. Governance related aspects

According to The Concise Oxford Dictionary (Sykes, 1978:462) the verb 'govern' means to rule with authority; to conduct the policy, actions and affairs of state or subjects either despotically or constitutionally; to 'sway, rule, influence, regulate or determine', or to exercise a function of government in person on behalf of government. This process of governance takes place within a wider framework.

Hence, a limited literature search was done to identify the main themes used to define the concept of governance within a contextual environment as background to the discussions that follow. The salient aspects of governance that emerged from this limited literature survey have been used as a case study to demonstrate the application and value of a systems approach. Liberal use is made of material from a recent publication by Schwella (2015) and the National Development Plan (National Planning Commission, 2014) for demonstration purposes.

According to the literature from Davids and Theron (2014), Hendrikse and Hendrikse (2004), Schwella (2015), and Van Niekerk, Van der Waldt and Jonker (2001) the generic concept of governance contains elements and phrases such as the following, in random order:

- Conceptual understanding; design of governance structures and processes; theories, paradigms and ideologies; a constitution with fundamental principles of organisation and governance; values and ethics; behaviour of governance actors and institutions; good, effective and efficient governance versus bad governance; organisational aspects of governance; the relation between governance and government; hierarchical aspects of governance; spheres and levels of government institutions; organisational aspects; control and separation of powers; intergovernmental relations; interaction between government, civil society, the private sector, non-government organisations and business sectors; Reviews of the macro-environment normally include a 'PESTLE' analysis, denoting a review of the relevant political, economic, social, technological, legal, and environmental aspects; temporal aspects; historic factors that shaped the current reality; futures perspectives; strategies towards a desired and realisable future; complex global and local challenges and problems; governance actors; processes of government; policy formulation, implementation and evaluation; administration; participation; executive, legislative and judicial institutions; performance management of government and governing actors; causal factors contributing to good or bad governance.

A general (and unscientific) observation with reference to this list is that terms closely associated with systemic thinking are thinly distributed amongst the contents of the list. This creates an initial perception that the domain of governance is somewhat removed from the domain of systems thinking.

Schwella (2015:12, 26-31) argues that good governance serves the public interest. Good governance should promote public value and it should be effective and efficient.

2.2. Effectiveness and efficiency of governance

Schwella (2015:27) states that 'government effectiveness relates to the extent to which government achieves its objectives' whereas efficiency refers to the ratio of inputs required to achieve desired outputs. Based on the context provided by Schwella, effective and efficient governance could then be redefined as processes that contribute to the maximisation of public value (also when externalities are considered), in the near and longer term for each marginal unit of resource spent on behalf of the public interest and in pursuit of stated long term government objectives. In order to optimise the value contribution of resources such as time, funds, material, energy, information and knowledge the governing actor needs to know where, when, how and why such resources need to be applied. The argument made in this paper is that a more holistic and systemic understanding of both the entity being governed and the system of governance will result in more effective and efficient governance. Hence, aspects of both systems thinking and systems theory are proposed as a means to improve governance performance in order to maximise the creation of public value in the long term.

2.3. Towards effective and efficient governance

According to Schwella (2015:225-269) the performance of governance in South Africa in almost all sectors of society is deteriorating at a fast pace. South African governance is regarded as being 'substantially corrupt'. Competitiveness of the local economy is deteriorating, human development is far below average, crime and corruption is on the increase, and ratings by international financial institutions are getting more negative. The effects of these trends include poor service delivery performance, loss of trust in governance systems, civil unrest, violent protests and the increasing use of repressive power-based strategies to deal with it. 'These strategies deal in the short term with the symptoms of the challenges of perceived deficient and decreasing governance. However, in the long term, if not reversed, they will result in a downward spiral of further corruption, bad governance, deteriorating public leadership, and, potentially, a failed state rather than a developmental state' (Schwella, 2015:267).

The assumption made in this paper is that a better conceptual understanding of the integrated nature of governance should enable (good) governing actors to govern better. Current governance practices are based on an outdated, simplistic paradigm and perception of governance. Additional perspectives and insights should bring more clarity and comprehensiveness to the prevailing understanding of the concept of governance, making successful government more likely. Based on this premise, an attempt is made hereunder to identify concepts from the domain of systems theory that can expand the frameworks which governing actors use to conceptualise governance and to address complex problems. A more nuanced thinking framework should equip governing actors with more advanced approaches to deal with the issues of governance.

Systemic thinking provides a conceptual framework to deal with complexity and complex systems. It provides additional perspectives that illuminate different aspects of systems, uncovers hidden realities not often considered in governance processes and it offers approaches to classify and address complexity. Systemic thinking is also a key to solving or dissolving various types of problems.

3. ATTRIBUTES OF SYSTEMS

3.1. Systems as incomplete models of reality

A model or a description of a phenomenon is like a painting. It is a mere approximation or an abstraction of reality that represents only certain salient features thereof that are deemed important or relevant to the modeller. Despite numerous shortcomings, models do provide a useful means to develop a cognitive and conceptual understanding of the behaviour and characteristics of the modelled entity over time. Limited space does not allow for a review of fundamental systems theory in this paper. Hence, the following paragraphs contain a very brief overview of selected systems concepts to demonstrate the advantages of a systems approach later on. Subsequent arguments regarding governance of complex systems are based on an understanding of this selection of system attributes.

3.2. System attributes

Systems are defined in terms of their constituent elements, system boundaries; multidimensional interaction amongst system elements via feedback loops; the properties of emergence, evolution and co-evolution; behaviour and characteristics of the entire system; system contexts and interaction between systems and their environments; types of systems and system states; the very important dimension of time; hierarchical systemic relationships, and contexts. Scholars that have studied systems include Ackoff (1974), Gharajedaghi (1999), Dostal, Cloete and János (2005:31), Senge (2006), Teisman, Westerveld and Hertogh (2009), Kuosa (2012) and Hester and Adams (2014).

Important systemic aspects, that co-define a systems approach, need to be highlighted:

- **System boundaries:** System boundaries group system elements together within an environmental context and they exist within the dimensions of time as well as physical and conceptual space. Validity of system boundaries can be evaluated and optimised by means of a methodology called Critical Systems Heuristics (CSH) developed by Ulrich (1983).
- **Feedback:** Feedback loops propagate change through all systemic hierarchies, levels and domains along a time line (Teisman, Westerveld & Hertogh, 2009:30, 138). Feedback can be positive (amplifying) or negative (dampening) and contain time delays. Feedback loops separate cause and effect in time and space.
- **Time awareness:** Time progresses from past to present to future in an irreversible manner. Modis (1992:32-36) reviews the stages or life cycles of complex systems and Linstone (2002:317-336) analyses the consistent pattern of 'long waves' or cycles of change that have been observed for the last 200 years, each lasting about 50 to 60 years.
- **Future consciousness:** Future consciousness refers to a consciousness of past, present and future. Future consciousness includes the human capacities to anticipate, predict and imagine the future and to have hopes, dreams and visions about a desired future. It includes the ability to think intelligently about the future, to develop and evaluate different possibilities and options, and to plan strategically (Lombardo, 2006:5-6).
- **System states:** Hester and Adams (2014:181-185) use the Cynefin framework for sense-making of complexity on a continuum spanning system states from the domain of simple systems to complicated systems to complex systems to chaotic systems to systemic states of complete disorder at the other end of the spectrum.
- **Dimensions of contexts and systems:** Dostal et al. (2005:41-42) distinguish the contextual dimensions of the 'naturosphere' (ecological, biological and physical dimensions), the 'technosphere' (technological dimension) and the 'psycho-sociosphere' (psychological, cultural, economic and political dimensions).
- **Hierarchy:** The hierarchical organisation of systems can be compared with the layers of an onion or a Russian Doll (Dostal et al., 2005:43-46). Governance, organisational and control systems exist within hierarchical structures of nested systems, one within the other.

The above systems aspects are necessary components of the metaphorical systems lens required to observe, understand and govern all types of systems, including systems that behave in complex and unpredictable ways.

3.3. Complex systems

System boundaries of complex systems are open and allow for a rich interaction between numerous system elements or actors and the environment. Each actor, with its own motivators and goals, co-defines the behaviour of the total system. Complex systems display non-linear dynamic behaviour that is very difficult to understand, to model and to predict (Kuosa, 2012:75). Complex systems normally have a memory, which means that past events may affect present and future system states. Complex systems contain feedback loops, and are nested within hierarchies of systems. This category of systems exhibit emergent behaviours and evolve over time. Complex systems co-evolve as a result of ongoing processes of mutual and reciprocal adjustment between interconnected systems at different hierarchical levels. Subsequent change is never unilateral but always the result of mutual, dynamic influences between systems (Teisman et al., 2009:12-13, 136-137).

Complex systems are purposeful, meaning that these systems have the power and freedom to choose and change both their objectives as well as the strategies to achieve those objectives (Gharajedaghi, 1999:33-38). Complex systems have a property of self-organisation, made possible by their internal reflexive capacity to receive, encode, transform and store information. Complex systems are therefore able to learn (Teisman et al., 2009:9-10, 134-135). Different perspectives reveal different aspects of complex systems.

3.4. System perspectives

3.4.1. The value of different perspectives

Different lenses or perspectives can be used to define and to understand different features of systems. Each unique systems perspective reveals specific attributes of the system being studied that other perspectives do not expose. A combination of complementary systems perspectives contributes towards a more holistic and integrated understanding of the nature of a system. Some of the earlier systems perspectives only focus on the visible and superficial aspects of complex systems such as technical, organisational and personal aspects (Linstone, 1984:44-45). Slaughter (1999:443) refers to these perspectives as the 'flatland' view of reality whereas other trans-disciplinary perspectives uncover the deeper invisible levels of reality (Hester & Adams, 2014:44-45). The following examples of systems perspectives expand the frameworks for understanding complex systems and can be applied to any type of system in any environment.

3.4.2. Biomatrix systems perspective

Dostal et al. (2005) developed Biomatrix systems theory as a more comprehensive process-based approach that depicts the universe as a web of dynamic, interrelating systems and processes. The

Biomatrix web is organised as a containing systems hierarchy with different levels. Seven interrelated system attributes or organising forces, each with properties in three distinguishable domains, are used to define all types of systems. The seven system aspects refer to the multi-dimensional contextual environment of a system, its aims and objectives, the ethos of the integrated system, its processes, structural aspects, resources involved, and governance. The three domains are the 'technosphere' (technological systems of artefacts and activities to manipulate matter, energy and information), the 'naturosphere' (consisting of the biological, ecological and physical systems of nature) and the 'psycho-sociosphere' (with refers to psychological systems of mental activity, cultural, economic and political dimensions as well as social interaction of people).

3.4.3. Integral perspective

Integral theory embraces the complexity of reality in a very simple but powerful way. It brings more clarity and comprehensiveness to virtually any situation, making success much more likely (Slaughter, 2008:121). The integral framework, theory or philosophy, developed by Wilber (2000), provides a comprehensive map of reality to assist holistic thinking. It emphasises the reality that the world, like the 'Kosmos' is an integrated, undivided whole consisting of nested systems within systems. Slaughter (2008:123) argues that the conventional 'exterior' approaches to world issues only cover part of the territory, meaning that those who follow the 'exterior only' path are unwittingly contributing to the problem. Therefore a more integral and holistic perspective is needed.

Five key elements are distinguished in the integral framework, namely **quadrants, levels, lines, types** and **states**. It is a qualitative description of reality that makes provision for evolutionary concepts and the hierarchical order of systems.

An integral understanding of any system is expressed in terms of four quadrants (or complementary and irreducible simultaneous perspectives that reflect the inner and outer domains of the individual and the collective), levels (of development), lines (referring to developmental aspects), system types (or categories) and system states (or conditions). The upper left (UL) hand quadrant represents the inner (mental) world of the individual actor, containing value systems, worldviews, paradigms, cognitive development, a spectrum of intelligences, and motives. The upper right (UR) hand quadrant reflects the visible external and behavioural aspects and features of the individual. The lower left (LL) hand quadrant reflects the interior cultural world of the collective in terms of worldviews, values and belief systems, paradigms, and stages of cultural development. The lower right (LR) hand quadrant reflects the visible external social and physical world of society. The assumption is made that an understanding of reality emerges from the simultaneous interaction of all four quadrants, lines, levels, states and types relating to that reality. Hence, any perspective of

reality that ignores at least one of the quadrants or any aspect related to level, line, state or a type is incomplete.

3.4.4. Causal Layered Analysis

Causal Layered Analysis (CLA) is based on the assumption that there are different interconnected levels of reality and ways of knowing. It adds a depth dimension as a complementary perspective on systems (Inayatullah, 1998). The four levels refer to the litany (on the surface), social causes and social systems (underneath the surface); then the level of discourse/worldview, and finally the deepest level of myth/metaphor. CLA can be compared with Slaughter's approach to 'critical futures studies' (Slaughter, 2002:493-507) that uncovers deeper levels of reality to explain phenomena.

The level of the **litany** typically contains quantitative trends, and disconnected events, issues and problems typically covered in the media. This level is based on conventional perception and understanding of reality and is seldom questioned. The level of **social causes and social systems** represents the multiple interacting systems that co-produce the outcomes on the surface. It includes economic, cultural, political and historical factors and contains conventional technical explanations relating to the litany. At the level of **discourse/worldview** the focus is on different discourses, worldviews, values, assumptions and meanings of actors that legitimate and sustain social relationships, expressions of power and preferred modes of knowing and being. The fourth layer of analysis uncovers the **myths and metaphors**, the deep stories and collective archetypes that form the unconscious dimensions of the issues in the layers above (Inayatullah, 1998; Slaughter, 2008:131). Trends in the changes of values, perceptions and traditions at this level are not those of the exterior world and are invisible to empirical/analytic ways of knowing.

The levels of discourse/worldview and myths/metaphors 'probe beneath the surface' to 'peel away' the layers of received opinion and discern the foundations of social life: the social construction of reality in terms of the deeper processes of meaning-making, paradigm formation and the formation of worldviews. According to Slaughter the deepest layers contain the transpersonal energies and inspiration and hope that can open new productive mind-spaces where in-depth social innovations can be designed for advanced stages of civilised life (Slaughter, 2002:503-504). A richer understanding of driving forces at these lower levels of reality provides for more innovative and effective approaches to solving complex problems.

3.5. Solving complex systemic problems

Complex problems are also called 'wicked' problems. Each problem is novel and unique, and there is no 'stopping rule' that indicates that a solution has been found. Wicked problems are ill-defined, ambiguous and they continue to evolve in a dynamic and complex social context. Ackoff

(1974:117,197) refers to this type of complex problem as a 'mess - a system of interacting problems' that 'require a system of solutions'. Complex problems can only be understood systemically within their contexts. 'A reductionist approach solely focussing on parts [of a complex system] does not generate an understanding of the whole. A systemic approach is required in order to achieve this' (Teisman, Van Buuren & Gerrits, 2009:5). In fact, the level of thinking required to address this category of problems is normally found at a more advanced level and of a higher order than the level of thinking that co-produced the mess (Dostal et al., 2005; Gharajedaghi, 1999).

Hester and Adams (2014), Leleur (2007:5), Ritchey (2013) and Dostal et al.(2005) recommend that complex problems have to be dissolved by identifying and removing the co-factors from which the problem emerges.

Effectiveness and efficiency of governance processes can be improved tremendously by formulating problem statements appropriately before solution strategies are developed and implemented.

3.6. Potential errors in formulating systemic problems

The way in which one frames a problem has important implications for the policy solution and the actors responsible for creating transformation (Inayatullah, 1998:820). Hester and Adams (2014:10) review seven different categories of typical errors related to inappropriate problem diagnostics. Categories of errors associated with systemic problem (dis)solving are the following:

- **Type III errors** are made when the wrong problem is solved precisely.
- **Type IV errors** are made when inappropriate (wrong) action is taken to solve a problem as the result of a correct analysis.
- **Type V errors** refer to failure to act (inaction) when the results of analysis indicate action is required.
- **Type VI errors** occur when causation is inferred when only correlation exists (unsubstantiated inference).
- **Type VII errors** define a system of errors resulting from a combination of the other error types, often resulting in a more complex problem than initially encountered.

Each error type can be avoided if the problem is understood systemically. Once a system is properly understood it also becomes possible to identify strategic places to intervene in systems.

3.7. Leverage points as places to intervene in systems

Leverage points refer to strategic and systemic change drivers that can be activated in order to achieve desired outcomes. In order to maximise the desired impact of the application of scarce resources (or change initiatives) it is important to know where to intervene in complex systems. Influence diagrams are convenient systems models that represent system dynamics of complex systems in qualitative terms, or in quantitative terms in the case of system dynamics modelling. Influence diagrams can be used to depict the interaction between co-factors that co-produce wicked problems (Dostal et al., 2005:8-9). These qualitative and quantitative models can be used to identify strategic leverage points in complex systems. Effective leverage results in efficiency gains during change processes.

Meadows' hierarchy of leverage points starts with the category that has least impact but the one that is used most. This refers to a focus on constants, parameters and numbers to effect change. Then follows feedback loops and structure, information management, system rules, power to change the rules, the goals of the system and the mindset, or paradigm, out of which the system arises as possible drivers of change. The hierarchy ends with the most powerful systemic lever at the deepest levels of paradigms, mindset and goals - which is the power to transcend paradigms (Meadows, 1999). A policy approach that employs a wide range of these drivers of change, or leverage points, is best positioned to actualise both short term (low hanging fruit) as well as profound longer term shifts in system behaviour.

The ability to address complex problems or challenges emerges from a holistic understanding of system dynamics and an understanding of the power of leverage points. This ability can be used very effectively in two domains of governance, namely problem dissolving and strategic planning. Problem dissolving skills are required to address the (symptoms of) wicked problems whereas strategic planning is about the realisation of a desired, realisable future with the current reality as reference point. Both processes should contribute to the maximisation of public value through the effective realisation of government objectives and the efficient use of resources.

4. GOVERNANCE: A SYSTEMS PERSPECTIVE

4.1. The advantage of different perspectives

Different frameworks or perspectives are used below to illustrate how each one contributes to a more holistic and integrated understanding of a system of governance. The frameworks are applied to aspects of South African governance as documented by Schwella (2015) and the National Planning Commission (2014). Basic aspects of the Biomatrix systems perspective are used first.

4.2.A Biomatrix systems perspective of South African governance

When the Biomatrix systems framework is applied to the many diverse and seemingly disconnected aspects of South African government and governance, as gathered from the literature review above, an alternative description of the same 'whole' South African governance system entity emerges in terms of seven multi-dimensional, holographic aspects of governance. (Holographic here means that each of the seven organising aspects or forces contains and reflects all other Biomatrix systems aspects as well.) In addition each of these organising forces, or aspects, exists in the dimensions of the 'technosphere', the 'naturosphere' and the 'psycho-sociosphere'.

The ethos aspect: The ethos aspect of governance in South Africa (SA) is captured in the Constitution and the Bill of Rights as the most important driving force of the system of governance. The ethos of the Constitution of SA (Republic of South Africa, 1996) co-defines the hierarchical structures of government, the developmental aims and vision for South Africans, associated processes and resources to achieve the stated aims and objectives, and it defines governance processes for the purposes of effective and efficient government. Unethical behaviour of individual and purposeful actors reflects an ethos aspect of an alien kind that has resulted in crime and criminal activity.

The environment: The internal environment of the SA governance system is contained in a transactional environment, which is contained within a multidimensional contextual environment. The typical 'PESTLE' analysis (Schwella, 2015:76-127) is focused on the contextual aspects of the macro-environment, and not on the deeper levels of mental models and cultural aspects that shape the social systems in the macro-environment.

Aims and objectives: The developmental aims and objectives of SA governance are stated in the Constitution and are cascaded down hierarchical levels of government via legislation and policies. The National Development Plan contains the most recent set of aims and objectives for governance towards the year 2030. These aims and objectives are structured vertically through different levels of government and horizontally through different provinces, departments, municipalities, courts and towns.

Processes: Processes of governance include the following three sets of hierarchical processes within and amongst the executive, legislature and the judiciary. Chapter 9 institutions are examples of governance processes that need to protect the integrity and ethos of governance processes in general.

- **Outward directed governance processes** deliver the services and products of government such as health, education and social services as intended by the Constitution.

- **Inward-directed governance processes** are designed to maintain the efficient and effective functioning of the internal environment of governance. Processes such as taxation, maintenance of public works and infrastructure, distribution of resources, and standardisation support the delivery of outward-directed processes.
- **Self-directed governance processes** are about maintenance of the integrity and balance of the entire system of governance as an integrated, effective and efficient whole system. Included are processes of national and departmental planning, decision-making, administration, optimal distribution of resources, budgeting and knowledge management.

Structures: Structural arrangements of national governance functions in SA are based on the separation of powers of the legislature, the executive and the judiciary, and the hierarchical structures within each of them. Structural arrangements in the dimension of time dictate that elections are scheduled for five-year intervals whereas other processes follow annual cycles. Conceptual structures of governance in the minds of governing actors co-define their behaviours.

Substance / Resources: The system of governance in SA uses resources such as governance structures, taxes, human talent and knowledge, technology and infrastructure in the execution of governance functions.

Governance: Governance in the sense of an organising force in the Biomatrix framework refers here to the governance aspect of the system of governance in SA. Governance in SA is based on the supremacy of the Constitution and the principles of the *Rechtsstaat*. Various structures and processes are defined in the Constitution and the Bill of Rights to ensure that government is effective, efficient and ethical. The principle of the separation of powers of various governance subsystems and the functions of the Chapter 9 institutions relate to the governance aspect.

The underperformance of governance in SA is co-created by all seven Biometric systems aspects, but specifically by a corrupt ethos. An unwelcome ecosystem has emerged, allowing an ineffectual president and corrupt governing actors to co-exist. Unless a change event changes this pattern, the existing system of governance will disintegrate into a state of chaos and disorder.

A detailed Biomatrix systems perspective of SA governance can go much deeper and wider than the above application. The Biomatrix systems perspective can be applied to any actor or specific aspect relating to governance. It provides a practical and convenient framework for qualitative thinking in multiple dimensions about the many detailed aspects of governance. The framework is applied very effectively to deal with wicked problems of all kinds. Biomatrix systems principles can also be used effectively to transform systems.

A different but complementary perspective of SA governance is provided by the integral framework below.

4.3. An integral understanding of governance

The integral framework is applied below to different aspects of governance in SA to demonstrate the value of this perspective.

The so-called 'PESTLE' analysis of the context of governance is focused squarely in the domain of the exterior world of the collective in the LR quadrant and ignores completely the contribution of the other three quadrants. In addition a PESTLE analysis of context that ignores the multiple hierarchical and mutual interactions of each PESTLE-subsystem with all the other PESTLE-subsystems studied is incomplete as each element studied is connected to each other element.

International indexes (such as the Global Competitiveness Index) that rank the performance of individual countries focus mainly on the exterior domain of the collective in the LR quadrant. Human development indices tend to focus in the UR quadrant. Slaughter (2008:127) comments that 'to omit, overlook, or otherwise diminish the interiors [of the collective and the individual] constitutes a serious professional hazard'. Slaughter (2008:131) refers to an over-emphasis on the collective exterior domains to the detriment of the interior domains as 'quadrant absolutism'. Thus, a contextual understanding based solely on a PESTEL analysis is limited to an understanding of the external social world of the collective only, whereas the contributing perspectives of the other quadrants are ignored. In summary, a boundary judgement that excludes any quadrant, line, level, state or type is incomplete.

The collective value system and worldviews contained in the South African Constitution and the Bill of Rights that co-define the desired future cultural dimension of SA society are reflected in the LL quadrant. These value systems and worldviews co-produce the institutions and physical hierarchical governance structures in the LR quadrant. The commonly shared national values in the LL quadrant should co-define the value systems of individual governing actors in the UL quadrant, and shape their personal visible and ethical behaviours in the UR quadrant.

A crime could be defined as the emergence of a phenomenon in terms of the actual visible commitment of crime by an individual (UR), with a criminal intention and skewed value systems (UL), who grew up in an unhealthy culture of self-directed worldviews and beliefs (LL), and who has access to an eco-system of physical infrastructure and resources that enables him/her to commit the crime.

Each one of the global governance challenges referred to by Schwella (2015) can be understood in terms of an integral framework. Each of these challenges is co-produced by worldviews and value

systems of individuals (UL); commonly held beliefs and paradigms of communities (LL); and visible behavioural expression thereof in the exterior, visible behavioural world of the individual (UR) and the physical environment of the collective (LR). All challenges are co-produced simultaneously by co-factors from all four integral domains that define context in multiple complementary dimensions. A more detailed and richer understanding of reality can be developed when the interrelated aspects of levels, lines, states and types in each quadrant are considered as well. A superficial evaluation of only the visible exterior domains of reality will always be incomplete.

A desired future for South Africa as defined in the National Development Plan 2030 (National Planning Commission, 2011) has pillars in all four integral domains. The national vision, aspirations, hopes, worldviews and cultural values are elements from the collective interior domain (LL). The importance of proper education, mental and cognitive development and capacity building of individuals are emphasised in order to develop the interior domain of individuals (UL). Much emphasis is placed in the National Development Plan on socio-economic infrastructure development, an integrated and inclusive rural economy, transformed human settlements and effective education systems (LR). Taken together these three integrated domains (LL, UL, LR) have to produce an environment where individuals can be free, happy, healthy, safe and cared for (UR).

It can therefore be stated that a 'system of governance', like the global challenges, emerges out of all four integral domains (or quadrants) simultaneously. In a similar way both complex problems and criminal elements emerge from the simultaneous contributions of numerous multi-dimensional co-factors.

The integral framework facilitates a holistic understanding of governance as an emergent phenomenon, co-produced from all four integral quadrants simultaneously. More insight and understanding is developed once the additional integral aspects of developmental lines, levels of development, system stages and system types are included in the analysis. The integral framework can be applied effectively to an individual, a situation, an institution, an event or process. The integral framework provides an additional multidimensional and powerful perspective to address wicked problems.

4.4. Causal Layered Analysis of South African governance

CLA, as a third multidimensional systems perspective, is applied to the system of governance in SA as documented by Schwella (2015) to relate different levels of understanding to the underperformance of governance and the challenges faced by governance actors in SA.

At the level of the litany, issues such as the following 'surface':

- The Marikana killings; the Gupta family visit; expenditure on Nkandla; behaviour of the Economic Freedom Fighters; the Omar al-Basjir debacle; land reform; farm murders; deteriorating national competitiveness; increases in crime and corruption; failed municipal governance systems; national electricity shortages; increases in the number of violent protest marches; underperforming state-owned enterprises; unemployment, poverty and income inequality; Black Economic Empowerment; more illegal immigrants entering SA, to mention a few.

The issues on the surface are associated with the following underlying social causes:

- Historic developments and the consequences of racial segregation in South Africa; nepotism and cadre deployment of incompetent people in governance positions; a skewed distribution of production resources; unhealthy relationships amongst labour unions, employers, political parties and the state; the effects of HIV/AIDS; underperforming public health and education systems; slow global economic growth; exposure of the open SA economy to globalisation, for example.

These socio-economic causes are related to the following historic and current worldviews:

- Worldviews of government before 1994 can be categorised as a combination of Wilber's pre-conventional and conventional stages with descriptors such as ethnocentric, self-defensive and self-protective (Wilber, 2000).
- The political transformation of 1994 was facilitated by the value systems and worldviews of former presidents Nelson Mandela and FW de Klerk. These views correspond with post-conventional and integral stages of human development and a holistic and integral consciousness that were adequate to address the challenges of that era.
- Current worldviews and value systems of the president and numerous senior governance actors in many circles of government correlate strongly with pre-conventional stages of human development and ego development as documented by Cook-Greuter (2005), Beck and Cowan (1996) and Wilber (2000). Archaic, ego-centric and ethnocentric stages of human development characterised by instinctive, impulsive, self-protective, self-defensive, selfish, narcissistic and opportunistic behaviour, and a focus on physiological needs and safety dominate widely in governance circles. More balanced post-conventional and holistic, integral worldviews of some individuals in governance generate rays of hope of improved governance in future.

- Most labour unions behave according to a pre-conventional worldview focused on the basic needs of ('tribe') members only.

Some myths and metaphors that relate to the above worldviews are worth mentioning, but are not discussed as they speak for themselves in the current SA context.

- 'We have a good story to tell', said president Zuma during a recent State of the Nation address.
- The pre-1994 slogan 'Power to the people' was replaced by 'Power to myself'.
- 'HIV/AIDS is a disease brought to Africa by the West', and 'HIV/AIDS can be cured by eating vegetables', and 'HIV/AIDS can be cured by having sex with a virgin'.
- 'The king can do no wrong'.
- 'I win, you lose'.
- 'Liberation before education' refers to a pre-1994 myth.
- 'Affirmative Action and Black Economic Empowerment (alone) will empower individuals.'
- 'The wheels are coming off.'

Associated with the pre-conventional and even conventional levels of development is the inability to handle dichotomies, apparent paradoxes and opposing tendencies (Cook-Greuter, 2005). The result is a zero-sum game, a win-lose situation, conflict, sub-optimisation. Advanced thinking, in contrast, transforms opposing tendencies into opportunities.

Assuming that causality flows from the level of myth/metaphor to the level of worldviews/discourse and upwards to the level of social causes, which co-produces the outcomes of the integrated multi-level system, then the deeper levels of understanding contain the seeds of transformation for SA. New narratives, new metaphors, new thinking, inspiring ideas, lots of energy and passionate agents in favour of positive change can indeed transform SA's dreadful current futures into desired and realisable futures.

4.5. Governing actors' (in)ability to deal with complex systems

Both the National Development Plan (National Planning Commission, 2014) and Schwella (2015:226-272) refer to poor performance of governance and an inability of governing actors to deal with the challenges of wicked problems. From a systems perspective the poor performance of governance can be classified as a wicked problem in itself. This (super)-wicked problem seems to emerge from a

number of co-factors that include the following: (Note: All these co-factors do not apply to all governing actors!)

- Governing actors' inability to understand the systemic nature of the system of governance within a bigger global context.
- Governing actors' apparent assumption that the ability to be elected into a governance position is sufficient to qualify them as adequate to deal effectively with the complexities associated with their roles in governance.
- Governing actors' inability to recognise the causality between factors at the invisible and deeper layers of worldviews, discourse, myth and metaphor and the social causes that co-produce the visible outcomes at the level of the litany.
- Governing actors apply poor boundary judgement when conceptual boundaries informed by pre-conventional worldviews are transformed into departmental silos, legislation, policies and arrangements that undermine the effective functioning of the SA socio-economic systems.
- Governing actors do not understand that the benefits of synergy and emergence are only realised when interdependent governance subsystems are governed as an integrated whole.
- Governing actors in general display an unawareness of the importance of time, and act with a reckless unawareness of the future. Precious time is wasted on futile debates regarding issues at the level of the litany.
- Governing actors do not understand the system dynamics of the system of governance and the role of feedback loops that link cause and effect over time and space, across boundaries.
- Governance actors do not understand the importance of leverage points as strategic areas to intervene in systems in order to affect desired change with minimum input and maximum output.
- Governance actors act without an appreciation of the implications of change in contextual environments for the internal environment of governance.
- When governance actors try to solve a complex problem without a systemic understanding of the problem within its context, they often commit at least one of the following error types:
 - Type III errors: The wrong problem is solved precisely.

- Type IV errors: Inappropriate (wrong) action is taken to solve a problem as the result of a correct analysis.
- Type V errors: Failure to act (inaction) when the results of analysis indicate action is required
- Type VI errors: Causation is inferred when only correlation exists.
- Type VII errors: A system of errors results from a combination of the other error types, often resulting in a more complex problem than initially encountered.

5. CONCLUSIONS

A multidimensional systems perspective on governance as a system is a great improvement on the prevailing but outdated simple, linear-thinking, closed-system approach that co-created the current reality in SA. The former approach provides access to a more accurate and much richer understanding of reality in terms of different but complementary perspectives and different levels of knowing. The examples and arguments offered in this paper demonstrate that the application of systems methodologies can indeed improve the performance of SA governance.

A common feature of the Biomatrix systems framework, the integral framework and the Causal Layered Analysis approach is that each perspective uncovers invisible aspects of governance that are hidden from the traditional 'flatland' approach to governance. A holistic understanding of the system of governance can only emerge once the invisible dimensions of governance are integrated with the exterior dimensions thereof.

An insight that emerged during the preparation of this paper is that the current governance system in SA manifests as a wicked problem in and of itself. Three multidimensional systems perspectives were applied to the underperforming SA governance system and a number of causal factors were identified. These co-factors were found distributed over all four domains of the integral framework, and they were identified in each organising force of the Biomatrix framework, and they were distributed over all four layers of the CLA framework.

A number of specific co-factors of poor governance deserve special mention. Governing actors in general are unaware of the importance of time as a resource and, hence, have an underdeveloped future consciousness. In many instances they are not able to categorise problems accurately. Simple solutions are often applied to address complex problems, without effect. An incomplete understanding of multidimensional and complex systems may result in the following categories of errors: The wrong problem is solved precisely; inappropriate action is taken to resolve a problem as the result of a correct analysis; failure to act when action is required; inferring causation when only

correlation exists, and errors resulting from a combination of the other error types, mostly resulting in a more complex problem than initially encountered.

Performance of governance systems in SA can only be effective and efficient if, and only if the following necessary preconditions are met, namely:

- A long term strategic plan to realise a desired, realisable future has to exist or has to be developed for the next few decades and not for five years only.
- Governing actors need a strategic planning horizon that transcend and include the entire life cycles of the implications of their decisions and projects as they implement strategies in order to realise a desired future. Short to medium term planning should be aligned with long term planning and objectives. This, and not the mere realisation of unqualified governance objectives, will promote effectiveness of governance.
- Governance actors need to understand systems sufficiently well to know where, when and how to leverage change through strategic interventions to minimise the use of scarce resources whilst maximising output. This will promote efficiency of governance.
- Governing actors will maximise public value in the long term, beyond five years, through long term planning and effective leverage of change processes.

The main argument in this paper is that the discipline of Governance can be enriched and enhanced through the effective utilisation of multiple complementary and multidimensional systems methodologies by motivated and competent governance actors with high ethical standards.

The combination of skills, competencies, worldviews and values required and employed to enter the arena of governance is fundamentally different from those that define a good, effective and efficient governance actor. This tragic reality is having severe implications for governance in South Africa. The synergy and power that emerges when good governance competency is enhanced by a well developed systems approach can leverage incredible positive change. Wise people in governance will equip themselves with such skill! A few recommendations in this regard are justified.

6. RECOMMENDATIONS FOR FUTURE GOVERNANCE

It is argued here that governance actors should, as a necessary requirement for good governance, be competent in the use of various systems methodologies to address the challenges posed by wicked problems, complex challenges and strategic planning. This recommendation is confirmed by Schwella (2015:12), Jaradat (2015:54) and the Constitution of SA, and echoed in Schedule IV of the Western Cape Planning and Development Act No.7 of 1999 (Republic of South Africa, 1999).

Governing bodies should use Critical Systems Heuristics (Ulrich, 1983) to reconsider the appropriateness of system boundaries within their spheres of influence. Of specific importance is the need to expand planning horizons from five years to decades.

Institutions of governance should cultivate a culture of continuous individual and institutional action learning to develop the human capacity required to deal with complexity. The work of Revans (2011), Pedler (2012), Weinstein (1999) and Schwella (2014) can be consulted regarding action learning.

Role players in the planning departments of governance institutions should establish a formal process that should monitor the contextual and internal environments for relevant change drivers and trends. The information gathered should be interpreted to understand the strategic implications thereof for governance.

A powerful leverage point would be activated if all students of governance could develop a systems perspective during their formative years of study. Hence, it is recommended that students of governance should be provided with the necessary reading material as part of their curriculum.

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