

Managing the performance of social interventions. What can we learn from a complex systems approach?

Paper for the British Academy of Management Conference, September 2016

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Introduction: Complexity and performance management

Complexity, as an approach to thinking about the world, has its roots in many disciplines, including physics, biology, cybernetics and mathematics (Boulton 2015; Byrne and Callaghan 2014; Mitchell 2009).

Applying complexity approaches to social issues has a long history (Smuts 1927) and which has had a recent revival of interest as a way of thinking which creates significant philosophical and epistemological challenges (e.g. Byrne and Callaghan 2014) for those interested in how the social world functions. As we shall see, it requires us to give up simple notions of cause and effect, and abandon reductionist approaches to understanding social phenomena. It requires us to think differently about how we seek to make change in the world, accepting that the changes we desire are beyond our control. In Boulton et al's (2015: 108/9) words: "to truly accept that the world is complex changes us. It fundamentally causes us to rethink how we approach the world, how we make sense of what happens, how we approach everything we do."

Complexity has been relatively well applied to the discipline of public management. For example, it has been the subject of a special issue of *Public Management Review* in 2008. And complexity thinking has been applied to the discipline of management more broadly (Mowles 2015; Boulton et al 2015). However, Performance Management (PM), and particularly the PM of social interventions has been less well considered from a complexity perspective. The purpose of this piece is to address that gap, and to begin to create a framework for thinking about how insights from complexity can support evolution in the PM of social interventions.

If PM is "a process which contributes to the effective management of individuals and teams in order to achieve high levels of organisational performance" (Armstrong and Baron 2004), what does this mean when organisational performance is viewed as being an aspect of a complex system? This paper will seek to address this question. It will outline the current dominant approach to the performance management of social interventions: Outcome-Based Performance Management (OBPM). It will then explore the meaning of complexity approaches, and attempt to articulate what is meant by a complex system. It will then address the way in which thinking of social interventions as existing within complex systems challenges OBPM. Finally, it will identify potential elements of a complexity-friendly approach to the PM of social interventions.

The Performance Management of social interventions

Arising from a New Public Management (NPM) (Hood 1991) approach, the dominant approach to the PM of social interventions (actions undertaken by organisations which are designed to have benefits to society – including activities such as education, health and social care, criminal justice,

employment and economic development, and community development) is OBPM (Lowe 2013, Lowe and Wilson 2015).

OBPM is an umbrella term for using 'outcomes' as a way of making a judgement about the performance and effectiveness of social policy interventions. It suggests that the effectiveness of social policy interventions should be judged on the basis of the impact they make in the lives of the people for whom they are designed, and that those people and organizations that deliver these interventions should have their performance rewarded or punished on the basis of whether the desired 'outcomes' are occurring (Bovaird 2014; Centre for Social Justice 2011; Cabinet Office 2012).

What does 'complexity' mean for the PM of social interventions?

There are two aspects of complexity approaches which require examination. We can distinguish between a complexity 'worldview' or 'approach' and definitions of what complex systems are. This is a differentiation of complexity as an epistemological position – which makes claims about the status of claims to 'truth', and how knowledge is created – and an ontological claim about the nature of complex social systems, and how they operate in the world. Obviously, these aspects of complexity are connected, but it is helpful to understand the difference between complexity as a worldview, and claims about the behaviour of complex systems themselves.

This section will draw on work of different scholars who are working to apply complexity approaches to different aspects of social science, and in particular, management theory. We will be selecting ideas and areas drawn from different writers, who each emphasise different aspects of complexity approaches. This is not presented as a synthesis of different complexity approaches, but as a guide to how different aspects of complexity thinking can inform PM theory and practice.

The epistemology of complexity: the complexity worldview

Unpredictability, emergence and the strange nature of cause and effect

A key aspect of a complexity worldview is that the interaction of factors influencing a given context means that the future is irredeemably unpredictable:

What do we mean when we say this [that the world is complex]? Take the future: if we consider practically anything – from whether there will be another global economic crisis, to whether we will be in a good mood tomorrow, to whether we'll complete our writing project – the future is hard to predict. There are many influences on any situation – social, economic, political, and environmental – together with more local and prosaic occurrences such as who turns up to a meeting, what the weather is like, toothache, who is allied to whom. (Boulton et al 2015: 28)

The reason that the future unpredictable is that in situations of complexity, **cause and effect do not operate in linear fashion:**

Complexity theory makes a fundamental challenge to the simplistic cause and effect thinking of management practice. The science of complexity is based on the idea that linear models of cause and effect are simply not adequate for understanding complicated circumstances where many variables interact over time. (Haynes 2003: 48)

Non-linearity is hugely significant, because it means that what happens in situations of complexity is **emergent**: it is not predictable from the starting conditions of the situation.

But in a nonlinear system adding two elementary actions to one another can induce dramatic new effects reflecting the onset of cooperativity between the constituent

elements. This can give rise to unexpected structures and events whose properties can be quite different from those of underlying elementary laws, in the form of abrupt transitions, a multiplicity of states, pattern formation, or an irregularly markedly unpredictable evolution of space and time referred to as deterministic chaos. (Nicolis 1995: 1-2 quoted in Byrne and Callaghan 2014: 20/1)

Path dependence and emergence

However, the emergent and unpredictable results inherent in the complexity worldview do not equate to randomness. Events are not cause-less, things happen due to the detailed history of the interaction between elements and the system, and between the system and external contexts and events:

A complex approach to these difficult public and social issues argues that what is needed is to understand the interaction and feedback between key variables, rather than forcing an approach that sees, or tries to argue, that one variable determines or causes another. (Haynes 2003: 35)

A complexity epistemology therefore focuses on understanding what has happened in a system, by looking at the detail of the particular history of that system, combined with exploring the effects of **variation** (change) on that system.

We cannot understand the dynamic nature of complex situations without paying attention to all these various forms of variety. The particular pathways that can and may occur depend on the detail of what happens. (Boulton et al 2015: 39)

Interdependence

Another key epistemological element of a complexity worldview is interdependence. That is to say, that nothing can be understood on its own: the meaning of an object, event or action can only be understood in relation to other things, objects and actions:

Generalised complexity requires that one tries to comprehend the relations between the whole and the parts. The knowledge of the parts is not enough, the knowledge of the whole as a whole is not enough, if one ignores its parts; one is thus brought to make a come and go in loop to gather the knowledge of the whole and its parts. Thus, the principle of reduction is substituted by a principle that conceives the relation of the whole-part mutual implication. (Byrne and Callaghan 2014: 39)

Accepting the epistemology of complexity has significant consequences for the methodologies we use to think about performance management. Emergence, and the relational nature of knowledge, have significant implications for what is knowable, in social science terms. To accept a complexity worldview is to accept significant limitations on the predictive power of knowledge. To accept complexity theory is to accept “the impossibility of prediction due to the extreme sensitivity of the future trajectories of systems to initial conditions” (Byrne and Callaghan 2014: 61).

Accepting the epistemology of complexity means moving away from the idea that knowledge can be taken from one context and applied in another. Knowledge in situations of complexity is “local, contextual, [and] specific in time and space.” (Byrne and Callaghan 2014: 62). This epistemology fundamentally challenges the notion of ‘best practice’ (because what is best in one situation may be hopeless in another) and of looking for generalised ideas of ‘what works’. A complexity approach to epistemology requires a significant degree of abstraction in order to generate principles which can apply across contexts (e.g. ‘it is important to have flexible responses to emergent situations’, or

‘encouraging experimentation is a good way to encourage adaptation’) (Boulton 2015), and these principles require local interpretation to make them relevant.

Given that this epistemology is so different from what is commonly taken for granted in the discipline of performance management, it is legitimate to ask ‘what are the conditions under which this epistemology applies?’ The answer to this question is that the complexity worldview applies when exploring how **open systems** function (Boulton et al 2015: 33/4). Open systems are those which exchange energy and information with their environment – with other elements that are beyond the immediate study. Closed systems are those which are entirely under the control of the person who is undertaking the study. An epistemology based on complexity is therefore appropriate when exploring systems in which we are only able to study part of a larger whole. As a consequence, an epistemology based on complexity seems appropriate for exploring social interventions.

The nature of complex systems: What is a complex system?

We will now explore the existence of complex systems – what they are, and how they behave. In social science terms, complex systems are social constructions. They are ‘real’ (in the sense of having an existence independent of whether we view them or not) but are also constructed (in that the reflexive act of observation changes their nature). The ontology of complex systems is thus something (to use Byrne’s formulation of Bhaskar) which we could call “complex critical realism”. Complex systems have independent existence in the world, but it in the act of imagining them, we alter them, as human reflexivity makes its presence felt:

systems are both real in that they exist and simultaneously (particularly social systems) have a reality which is constituted by our actions in defining them. It is epistemological because it asserts that we know systems by defining them in terms of boundaries but that reality has a voice in setting those boundaries and constrains our definition.” (Byrne and Callaghan 2014: 32/3)

Defining a complex system: boundaries and purpose

As we have seen above, the PM of social interventions is concerned with creating positive outcomes in the world. Therefore, one of the first tasks when viewing PM through a complex lens is to translate the source of outcomes from an organisation (or intervention) to the wider complex system of which that intervention is part. When thinking about how outcomes are created, we must seek to identify the complex system that are (broadly) responsible for the outcomes we are interested in, related to the set of people with which we are concerned.

So, the act of identifying the *purpose* of a system is crucial. It is through identifying purpose that we are able to construct the boundaries of a system – which people and organizations it includes (at this point in time), and which it does not.

This act of socially constructing a system in order to improve its capacity to meet its purpose is the vantage point that a PM perspective gives us. For the people that the system serves, it already has an existence in the world. People have real encounters with this system: they go into hospital; they get emergency housing; they talk to mental health and substance misuse practitioners.

It is not just the individual *elements* of this system that are real, it is actually experienced as a *system* by those involved. If the discharge policies of hospitals do not connect with housing allocation procedures of Local Authorities, people will be discharged into the street. If they are aligned, they won’t. If the substance misuse and mental health services are not working effectively together as a system, people with both mental health and substance problems will be refused mental health support because they are addicted (“we can’t get at their mental health problem because they

constantly present as intoxicated”), and refused substance misuse help because of their mental health problems (“we can’t support this person to get clean, because they are self-medicating to cope with trauma”).

It is the PM perspective – the desire to improve the way in which this system creates outcomes for the people who experience it – that defines the boundaries of the system as an entity for improvement – one which can behave in better or worse ways in order to achieve that purpose. But the purpose is intrinsically connected to the lives of the people who experience the system. It is in relation to *their* desired purposes – “I want to be well, I want to be warm, I want to be safe” – that is the reference point for defining who is in and who is out. Which people and organisations contribute to making that purpose happen?

Fluid boundaries

The nature of complex systems is that they are open systems. This means two things: they change over time, and they interact with other systems:

a complex system comprises many unique elements that interact in multiple ways. The elements themselves can change, learn and adapt. The connections can change, loosen, reform, and the boundaries of the system can also shift over time... Complexity emphasizes and incorporates the interconnected, interpenetrating, diverse and sometimes diffuse qualities of most natural and social systems... we are describing the nature of things as systems, complex, and affected by the particularity of the situations we are in and by the particularity of history (Boulton et al 2015: 34)

The ‘interpenetrating’ nature of complex systems is important to highlight here: people and organizations are part of many complex systems. Following Deleuze, Byrne and Callaghan (2014: 31) describe complex systems as “assemblages” – a system whose parts can be assembled in many different ways, and whose parts can belong to many different systems.

The behaviour of complex systems

In some respects, the relationship between a complexity epistemology and the existence of a complex system is simple. A complex system is one which behaves according to the principles identified in the complexity worldview, such as non-linearity, path dependence and emergence:

[A complex system is] a system whose output is not proportional to its input ... Here we can have changes in effects which are disproportionate to changes in the causal elements(s)’ (Byrne and Callaghan 2014:18).

Complex systems are such that “very small variations in the input parameters can generate very different output values in a system of equations” (Byrne and Callaghan 2014: 19).

Patterns and paths

One of the key elements of the nature of complex systems is that they are *path dependent*. That is, the results of the system, and the relationships within it, are based on a relationship between past and present which take the system down particular paths.

Accounts of public organizations based on complexity theory stress the indeterminacy of organizational systems and the difficulty of isolating cause and effect. Organizations systems should be thought of as CAS [Complex Adaptive Systems] where the feedback between elements and individuals is the key defining aspect of the organization in any one time and space. (Haynes 2003: 24)

This relationship between past and present can be iterative – in the form of feedback loops. This is the case when one element of a system changes, which leads to a change in another, which leads to a further change in the initial element, and so on (e.g. the way in which a person responds to aggression by another with further aggression, which escalates the initial aggression). Alternatively, the patterns can be shaped by conditioned responses to one-off variations, such as the way a choice of which University to attend frames who you will meet, and the relationships you form.

These relationships between past and present create patterns and paths for the future. These are both patterns of relationships within the system: “institutions, routines, norms and systems maps” (Boulton et al 2015: 29) and patterns of results that the systems produce:

We think these can be studied ‘scientifically’. In many cases our responses to identifying these patterns sharpens them and locks them in, as we refine our behaviour to respond to their predictions and try to ‘game’ the system”... The *future* is a complex combination of (a) the effect of current patterns, which can be studied – at least to some degree – scientifically and analytically, and (b) the effect of particular events or variations at particular times and places....complexity theory emphasizes that we cannot make judgements about the future, about the likelihood and nature of change without exploring this interplay. Current patterns form the **context** in which events may or may not gain impact and so may or may not destabilize them. Thus the future unfolds through the patterns that have been established in the past interacting with current events or variations. The future state of the system is, in this way, **path-dependent**. (emphasis in original)

Variation describes the way in which events impact on the patterns and paths of complex systems (Boulton 2015). Variation may be caused by large scale changes (the effect of a tsunami on a local ecosystem) or by tiny events that grow to have large significance (for want of a shoe, the horse was lost). Variation is a means to understand the way in which potentially stable (and therefore relatively predictable) patterns produced by systems become disrupted and display non-linear, emergent properties.

Self organization

Another key feature of complex social systems, for the purpose of PM thinking, is that even in the absence of central control, they can self-organize.

Complexity theory changes the perceptions that managers and professionals have about the nature of order in organizations.... Total control over events is not possible. Order is created by the human interaction and the feedback processes within the organization... Formal and informal sanctions apply to those who do not comply... Organizations can harness these creative processes, but too much deliberate control is counter-productive... Order will result from self-organization. The way is open to a new and adaptive form of teamwork in which individuals manage themselves within clear boundaries. Performance-driven and control-based management styles are in danger of creating fragmentation and conflict for those who seek positive social value in their public sector work.” (Haynes 2003: 40/1)

This creates a particularly significant challenge for conceptualising a complexity-friendly form of performance management. What is the role for performance management once we have abandoned the idea that we can control the performance of the system, and the results it produces?

The other relevant feature of self-organization in complex systems is the way in which they adapt and change in order to maintain themselves, and to produce the most optimal conditions within that system. This is known as ‘autopoiesis’:

Adaptation describes a process, perhaps never completed, within which the system changes to respond to its envioning conditions, seeking to gain equilibrium; adaptedness encapsulates the extent to which any social pattern can be described as optimal for the individuals within it. (Byrne and Callaghan 2014: 99)

However, there are two important considerations in our understanding of autopoiesis in complex social systems. Firstly, not all complex systems are autopoietic – complex systems aren't necessarily stable systems with an optimum equilibrium; such systems can collapse as easily as they find equilibrium.

Secondly, autopoiesis isn't a mystical process by which people and organizations come into alignment. Such systems adapt based on the capacity of the different elements to communicate with one another, and to use **learning** to respond to changing conditions.

A social system comes into being whenever an autopoietic connection of communication occurs and distinguishes itself against an environment by restricting the appropriate communications. Accordingly, social systems are not composed of persons and actions but of communications. (Byrne and Callaghan 2014: 98)

There, system improvements come from a process of learning – a process of conscious reflection on practice, and how the infrastructure of the system functions.

Instability and change

Complex systems are dynamic. That is, they are constantly changing and adapting, in response to both external events, and through their own emergent properties.

Patterns are always under threat of disruption by events - e.g. “external shocks such as pandemics, tsunamis, wars,...or larger than average fluctuations – in weather or stock market prices... Or events might be the coming together of several diverse facto – such as a strike by transport workers at the same time as a flu epidemic.... Events may also be internal variations from the norm... And of course what we regard as internal or external depends on how we draw the boundaries around the problem.”– (Boulton et al 2015: 30)

However, whilst dynamic, complex systems go through different periods of stability and instability:

Complex systems are an interplay between instability and stability. Instability can lead to exponential change that results from small initial changes. But not all change in a complex system is unstable. (Haynes 2008: 405)

Lessons for the performance management of social interventions from complexity

Given that “social interventions are ‘complex systems thrust amid complex systems’” (Mowles 2014: 168) it seems crucial for those interested in improving the performance of those systems to understand the implications of a complexity worldview, and the nature and behaviour of complex systems.

Problems that complexity poses for PM

A key lesson from complexity for PM is the rejection of benchmarking, and the use of ‘baseline’ measures as standards to which people or organisations can be held. Complexity says that such measures are not useful for judging future performance, for two reasons.

Firstly, complexity challenges the meaningfulness of proxy measurements. Whenever people seek to use “outcomes” as performance management mechanisms, what is measured is not the impact of

an intervention in someone's life. Rather what is measured is a 'proxy' – a substitute that is easier and cheaper to measure (Lowe and Wilson 2015). This is a simplification from the complex nature of reality for the purpose of making measurement possible in the real world. Complexity approaches render such simplification and abstraction invalid, precisely because the detail that is left out of such proxy measures is important to the understanding of complex systems.

The particular pathways that can and may occur depend on the detail of what happens. To average out the detail is to lose vital information about the nature of change, leading to inferences that may be qualitatively wrong, wrong by nature not just quantitatively approximate. (Boulton et al 2015: 39)

It is important to remember that tiny variations (of exactly the sort caused by the shift from the reality to the proxy) can cause massively disproportionate changes in result in complex systems.

Secondly, even on those rare occasions that complex measures are used, complexity says that those measures cannot be used as benchmarks or baselines. The nature of the context that produced those benchmarks or baselines will change over time, and those changes will potentially render comparison meaningless.

It is important to note that this does not invalidate the role of measurement per se as a tool with which to improve the performance of complex systems. It says that we must remain *modest* about what the process of simplification inherent in measurement can tell us:

When we pretend that we can understand or model a complex system in its full complexity, such pretence is not only hubristic, it is also a violation of that which is being modelled, especially when we are dealing with human or social systems. Trying to understand complex systems involves a certain modesty... A complex system is constituted through the relationships of differences. These relationships are non-linear. If the complexity is reduced, i.e. some of the difference is removed, it distorts our understanding of the system. Nevertheless, we have to reduce the complexity in order to be able to say something about the system at all. Because of the non-linearity, the magnitude of the resulting distortion cannot be predicted. Since we know this beforehand, we have to take responsibility for these distortions. (Byrne and Callaghan 2014: 64).

Measurement, therefore, can be used as an improvement tool by those who know the limitations of the data that they produce, by people who are able to fill in some of the lost detail because of their familiarity with the situations which the data is describing. Complexity teaches us that the ability to locally interpret data is crucial.

[Systems produce outcomes: The rejection of simple notions of accountability](#)

Secondly, and more fundamentally, accepting the epistemology of complexity means that we must abandon the idea that particular people, organizations or programmes can be identified as the cause of particular outcomes in the world.

For causation, the main contrast is between the conventional view of causation as a contest between individual variables to explain variation in an outcome and the diversity-oriented view that causation is both conjunctural and multiple. In the conventional view, each single causal condition, conceived as a distinct variable, has an independent impact on the outcome. In the diversity-oriented view, causes combine in different and sometimes contradictory ways to produce the same outcome, revealing different paths (Ragin 2000, quoted in Byrne & Callaghan 2014: 186)

most situations are the result of many causes, and these causes in general are not independent but act synergistically. We cannot consider these causes additively; their effects cannot be analysed by working out the effect of one then adding this to the effect of another. Furthermore, 'causes' may be very local and/or may be more universal. Causes may also be hard to pin down. (Boulton et al 2015: 36)

This fundamentally undermines the concept of accountability for outcomes. *Systems as a whole produce outcomes*, people and organizations do not. Regression analysis, and similar statistical tools, which have been used in an attempt to identify particular cause and effect relationships for inputs and outcomes are not helpful in complex situations:

The development of regression models which have so dominated quantitative social sciences of a non-experimental form... is completely predicated on straightforward linear modelling and efforts to get beyond this by deploying non-linear equation systems... have been, with some exceptions, generally unsuccessful. The blunt point is that non-linearity is a product of emergence. We need to start from emergence and develop a science that fits that crucial aspect of complex reality (Byrne & Callaghan 2014: 6/7)

And this is echoed by Mowles (2014: 171), who has written on the subject of what lessons evaluators can take from complexity:

Evaluators would cease hunting for mechanisms, would be less interested in logic diagrams, no matter how 'flexible', and would pay close attention to the quality of conversational life of social interventions, including how participants took up and understood any quantitative indicators that they might be using in the unfolding of the project... Evaluators convinced of the importance of insights from the complexity sciences would argue, along with Sanderson (2009) that evaluators should assume a greater humility in their work and their claims about predictability, causality and replicability, as well as changes to the putative 'whole'.

Outcomes are unpredictable and emergent

In addition to undermining our traditional sense of accountability for outcomes, complexity also forces us to consider the changeable nature of what counts as a desirable outcome. Outcomes, which may have been desirable at the start of a process may not be suitable for a context which has changed. And the opposite is also true: outcomes which were undesirable or unforeseen may come to be seen as crucial. Rogers (2008: 34) nicely illustrates the problems of failing to heed these lessons that complexity tries to teach us:

Eoyang et al. (1998: 3) have warned of the dysfunctional effects when people try to use a simple, linear model for planning and evaluating an intervention that is more like a complex adaptive system:

Everyone involved in making public policy can think about the process as if it were well regulated and linear. Their project plans and shared discourse may revolve around the orderly steps of the problem solving method, which is their espoused theory. In reality, however, they experience the process as a surprising, uncontrolled, and emergent phenomenon. This distinction between espoused theory and experience leads to a variety of unpleasant outcomes. Participants blame themselves or others when the process does not progress as it should. Resources are wasted in pursuit of the perfect and controlled response. Opportunities are missed when serendipity is damped or ignored because it does not fit in the expected scheme. Personal and professional frustration result when well laid plans prove ineffective.

The performance management of complex systems must be flexible in terms of what counts as a desired goal.

A complexity mindset... requires a judicious balance between planning and adapting, between persisting and seizing opportunities, between analysis and the humility of knowing that the future may throw up outcomes we neither intended nor could have imagined... (Boulton et al 2015: 123/4)

Performance management is typically implemented by cascading a number of objectives from the business plan. These are agreed with an individual at the beginning of the year and reviewed sometimes quarterly and sometimes at the year end. But often our success in achieving objectives depends on the actions of others or on the expectations of the market place being met. Sometimes success requires adapting to changing circumstances or reducing the impact of unexpected outcomes. Sometimes we have a sense of really persisting in situations that we feel are about to yield results, but there is nothing concrete to show for it. Often objectives are met due to factors coming together and we get the glory for something that was happening anyway (Boulton et al 2015: 125)

Multiple interrelated systems without a locus of control

The first point to consider builds on Mowles' (2014) point above concerning the multiple interpenetrating layers of complex systems involved in producing the outcomes with which social interventions are concerned. We can begin from the perspective of the person who experiences a social intervention. A person's life is a set of multiple complex systems – including the friends and family who sustain and shape them, together with the formal and informal organisations with which they interact. Likewise, the communities of which the person is part, and which shape their identity, values and perceptions of the world, are a complex system built of relationships amongst many people bound by shared narratives (Lowe 2000). Moving outward from the person, only then do we get to the system of active interventions from informal and formal organisations – everything from a coffee morning at a local community centre to the services offered by a GP.

Each one of these systems has its own history and paths. Each of these is made up of multiple actors. Very few of these actors come under the sway of any sort of PM. Even when we consider the system of organisations offering active interventions, many of these interventions (the coffee morning, for example) are not subject to PM, but instead respond to the informal feedback mechanisms of the systems within which they are embedded.

The learning that complexity offers to performance management in this respect is twofold. Firstly it concerns the necessity of involving this range of people in discussion about how the system works. As Boulton et al (2015: 123) states:

The next step is to 'weave' a set of goals or intentions, working with a broad stakeholder group to agree what can be achieved – informed by the context analysis to take account of myriad and wider systemic factors. 'Weaving' is taken to signify a process of reflexive and interconnected discussion through which new ideas and clarity of perspectives can emerge.

If multiple stakeholders (only some of whom are formal organizations) are to be included in this process of weaving, we are led to the second aspect of learning in this area: we must move beyond a compliance and control mindset. Haynes (2003: 41) follows this line: "Performance-driven and

control-based management styles are in danger of creating fragmentation and conflict for those who seek positive social value in their public sector work.”

System develops patterns: of relationships and interactions, and outcomes

As we have seen, complex systems produce patterns of relationships, interactions and outcomes. These may be analysed and reflected on, and they may be influenced. It is these patterns of outcomes with which the performance management of social interventions can concern itself. Again, the learning from complexity concerns shaping patterns, rather than seeking to control them. Bellavita’s (2006) incredible essay on how to organise a party for five year olds captures this perfectly.

How well does OBPM manage performance in complex systems?

Now that we have an understanding of a complexity worldview, and of how complex systems function, we can explore how OBPM, as the dominant form of PM practice for social interventions, influences such complex social systems.

Let us examine some key features of OBPM mechanisms to explore this influence.

Fixed outcomes

OBPM mechanisms begin by fixing a set of desired outcomes (see for example, Friedman 2001: 3.7, Schallock and Bonham 2001). The clearest example of this within OBPM is with Social Impact Bonds – mechanisms by which desired social outcomes are defined, funding is provided for activities which attempt to create these outcomes, and those funders receive returns on their investment at a later date if those outcomes are achieved. This is often as much as seven years later. (Nicholls and Tompkinson 2015)

More specifically, charities and/or private investors cover the upfront costs necessary to set up the interventions implemented by service providers, while the commissioner commits to pay rewards if pre-defined desired outcomes are later reached. (Tan et al 2015: 6)

Pre-defining desired outcomes, and then rewarding or punishing organisations for pursuing these outcomes, makes it more difficult for systems to adapt to changing circumstances, because the reward structures for people and organizations remain fixed, even as circumstances change. This explains why those who have studied the impact of implementing OBPM found evidence of “as ossification, a lack of innovation, tunnel vision, and suboptimization” (van Thiel and Leeuw 2002: 270) and why Social Impact Bond programmes have to be abandoned when the policy context in which they operate changes (Cahalane 2014).

It seeks to abstract complex outcomes into simple metrics

Performance managing for outcomes requires simple, easy-to-measure, metrics which can gather information about whether outcomes are being achieved (Lowe 2013, Lowe and Wilson 2015). This requires a process of abstraction and simplification which turns the messy reality of life into simple performance metrics by stripping out detail. We can see in practice, for example, when commissioners use Body Mass Index (BMI) as a proxy for obesity, even though BMI ignores “factors such as fitness (muscle mass), ethnic origin and puberty” and “does not provide any indication of the distribution of body fat and does not fully adjust for the effects of height or body shape” (National Obesity Observatory and NHS 2009: 3).

Unfortunately, developing understanding of what is happening within complex systems, and learning from that understanding, requires a familiarity with detail, as we have explored above

As a consequence, the simplification inherent in OBPM approaches robs the system of important information that it needs in order to successfully adapt. Perrin (1998: 372) noted this effect in his famous study of the impact of Results-Based Performance Management:

PIs [Performance Indicators] can be irrelevant, even if they are accurate. The essence of PM is to reduce a complex program to a small number of indicators. This, however, is inconsistent with systems theory and other sources that recognize that the whole is greater than the sum of its parts. PIs ignore the inherent complexities of social phenomena, which involve many interacting factors that cannot meaningfully be reduced to one or a finite number of quantitative indicators. Attempting to reduce a complex program or social intervention, such as initiatives in child welfare, economic development, or health promotion, to a small number of quantitative indicators can disguise and mislead rather than inform what is really happening. Thus PIs can confuse performance “indicators” with the underlying reality.

The emphasis on collection of outcome data denatures the information that arises from a conversation between a practitioner and client rendering it data for the purpose of judgements on programme, organisational or service performance rather than informing the relationship where it was generated. This effect has been described as generating a ‘view from nowhere’ where the answer to a given problem or success of an intervention can be measured objectively (Porter 1995, Wilson et al 2011, Cornford et al. 2013).

[It seeks to make people accountable for outcomes that are beyond their control](#)

The most significant negative impact of OBPM upon complex systems is due to the way in which it violates one of the most important principles of complexity – that, as we have seen, cause and effect do not work in a linear way in complex systems. For OBPM to function, outcomes must be attributable to identifiable causes (National Audit Office 2015). This is why Payment by Results programmes seek to make use of control groups, and other ‘experimental’ mechanisms to identify the difference made by particular interventions. But, as we have seen in our exploration of the epistemology of complex systems, such mechanisms do not function effectively in situations of complexity.

Therefore, OBPM contains a fundamental conceptual flaw. It seeks to hold people and organisations accountable for results which are beyond their control. The consequence of this conceptual flaw is that people and organizations learn to manage what they can control – which is the production of data. (Bevan and Hood 2006; Soss, Fording and Schram 2011) This is most commonly called ‘gaming’, but is actually an intrinsic feature of the way in which OBPM reward structures function. It is better thought of as ‘gamesmanship’. (Lowe and Wilson 2015).

This ‘gamesmanship’ undermines the capacity of complex systems to adapt effectively to optimize their state. If people and organizations within the system are managing the production of data to maximize their own reward, rather than to produce accurate representations of the state of affairs, this undermines learning – as it feeds incorrect (or biased) data into the system’s learning mechanisms.

[Performance Governance](#)

Having seen some of the ways in which OBPM has traditionally struggled to respond effectively to complexity, we will now briefly explore one way in which PM as a discipline has evolved in order to recognise that the situations in which social interventions take place have become increasingly complex. It is now recognised that social interventions often involve multiple stakeholders, including

both citizens themselves, and a range of private and voluntary sector organisations. (Halligan, Sarrico and Rhodes 2012; Conaty 2012) As a result, new concepts of performance governance, and in particular shared accountability, have developed. This is also reflected in the 'Collective Impact' movement (FSG 2015).

The effect of introducing governance is to expand the realm of “managing for performance” that both opens up the black box and goes well beyond. It suggests greater complexity and less direct control by governments...Several strands of performance governance can be differentiated. First there are organisational relationships both within and beyond the public sector that cover a range of collaborations through networks, partnerships, and coordination mechanisms that are governed by performance mechanisms. Public sector organisations linking to and partnering with private, not-for-profit, non-governmental and ad hoc citizen groups are all part of governing. The second dimension covers participation and citizen engagement in performance feedback. (Halligan, Sarrico and Rhodes 2012: 226/7)

However, this evolution of thought has sought to retain the basic principles of OBPM. Rather than moving on from the idea that outcomes can be successfully measured and attributed, thinkers in this field are seeking to make multiple organisations accountable for producing desired outcomes (Halligan, Sarrico and Rhodes 2012; Conaty 2012; FSG 2015).

Therefore, even though the Performance Governance approach recognises that social interventions are 'complex', thinkers in this area do not appear to be making use of complexity approaches – neither the epistemology of complexity, or investigations of complex systems themselves. As a consequence of this lack of engagement with complexity, rather than providing clarity regarding how to manage the performance of “shared outcomes” within complex systems, the nature of such outcomes appears to be “uncontrollable and unmanageable” (Conaty 2012: 304)

We have seen that OBPM, and its evolved cousin, Performance Governance, have struggled to take on board the lessons of a complexity worldview, and hence do not seem well suited to the management of performance within complex systems. Our task, therefore, is to begin to construct a conceptual framework which supports the management of performance of people and organisations who deliver social interventions within complex systems.

[Towards a complexity-friendly performance management approach](#)

Performance management seeks to improve the results that are created by social interventions. How can we apply insights from complexity in order to create a performance management approach which helps to improve the results of complex social systems? We can offer starting points for discussion in this field by identifying the purpose of a complexity-friendly PM system, and elements of both a conceptual framework and mechanisms by which this might function.

[Purpose and Focus of Performance Management](#)

Firstly, a complexity-friendly approach speaks to an evolution in the purpose of PM. Rather than seeking to improve an organisation's results (or team's, or person's), **the purpose of a complexity-friendly PM is to increase the adaptive capacity of the complex system under its purview**, in order that it can produce better outcomes for those it is seeking to support.

Adaptive capacity is a hallmark of advancement that indicates not only the ability of the system to shape itself... but also, 'includes an active concern with mastery, or the ability to change the environment to meet the needs of the system, as well as to survive in the face of its unalterable features' (Byrne and Callaghan 2014: 100)

In order to achieve this purpose, a focus for PM is **to improve the capacity for people to make judgements in situations of uncertainty** (because uncertainty is the natural condition of complex systems). This connects strongly with the way in which the practice of evaluation is responding to complexity (Ivaldi and Scaratti 2015). Their response to the necessity for knowledge to be understood as local and partial creates a version of evaluation in which the knowledge gained through evaluation is part of a process which supports those undertaking the work to hold up a mirror to their own practice, so that they can learn and improve.

Framework for PM

If PM is to meet this role and focus, it requires a different way of thinking about some of its core concepts, particularly ideas of accountability, trust and the locus of key decision-making.

Rethinking accountability:

Making people and organisations accountable for the results that they achieve has been the hallmark of the performance management of social interventions for the previous 30 years.

Responding to complexity requires rethinking our ideas about accountability. We know that we cannot hold people accountable for results. In those circumstances, what can accountability mean?

A complexity-friendly version of accountability could start from the concept of 'horizontal accountability' (O'Donnell 1998) and the ideas around transparency of practice developed by Brown and Calnan (2011). Rather than seeking to make people and organizations accountable for their results to those with whom they are in a power relationship, accountability can be rethought to focus on the idea of "providing an account" (Gibbon 2013) for the judgements and decisions we make to our peers. This form of accountability is potentially complexity-friendly because it enables those who have the same level of detail about the context of the work, and the judgements and decisions we make, to hold us to account for those decisions.

This form of accountability also requires another dimension if it is to be genuinely complexity-friendly. If peers are holding one another to account for *results*, this is not complexity-friendly, as it does not recognise the contingent nature of results in complex systems. A complexity-friendly version of accountability must focus on encouraging adaptation in the system through learning. This means that what we hold one another to account for is the quality of our judgement-making, and whether we have the learning mechanisms in place to improve and adapt our judgement-making.

Information for local governance – a 'view from somewhere'

It is clear that the role of information needs to be spelled out and there is a strong case for recognizing that interpretation of information is complex and generated intersubjectively and in the context of social interventions viewed as a collective process where a range of interpretations are possible (Cornford et al 2013). This requires an approach which moves performance management reliance on the production of data to recognise the relational nature of information including dealing with live issues of provenance and trust or a 'view from somewhere' (Wilson et al 2011, Cornford et al 2013).

This means that the information generated must inform and be responsive to both the 'sense and sensibilities' of the local performance that needs to be managed and governed (Wilson et al. 2013) rather than produced for local 'performances' in national rankings and league tables. Cornford et al. suggests that the establishment of interpretative communities where 'local knowledge' or 'local epistemic performance judgements can be generated to support local governance (Cornford et al 2013).

A devolved locus for decision-making

As we have seen in previous sections, making good judgements in complex environments requires familiarity with the detail of a situation. In order to know whether a particular judgement is likely to result in better or worse outcomes, the person making that judgement must be familiar with the detail of the case at hand. For example, consider the role of support workers who work with people who experience severe and multiple disadvantage (SMD- defined as at least three of these four conditions: homelessness, substance misuse, mental health problems and involvement with the criminal justice system). This work involves setting goals with each client that they work towards (Fieldnotes). In order to respond to the complexity of each client's situation, these workers need to be free to set goals which are bespoke to each client, and to measure progress using whatever means are most appropriate to that case. If the judgement of these workers is constrained by 'higher' level goals, such as targets around employability or the achievement of progress against standardised metrics, it reduces their capacity to respond effectively to the complexity of that situation.

Devolution of judgement is also required to respond to the nature of change in complex systems. We know that complex systems can change in significant and unpredictable ways. In order to respond to such changes, staff must be free to use their judgement to alter everything – including the goals that they set with clients. This way of thinking strongly resonates with Lipskey's (2010) conception of the 'discretion' required for 'street-level bureaucrats' to play their roles effectively.

The role of trust

If devolved-decision making is crucial to ensuring that people are able to make good decisions within complex systems, then it suggests that PM must make significant efforts to understand the role of trust in improving performance. In order to for those with responsibility for ensuring high quality provision of services to devolve decision-making to others, they must have good reasons to trust that this devolved decision-making will be appropriate.

Significant work has already been undertaken in this area. Brown and Calnan (2011), Stocks-Rankin, Cook and Keyes (2013) and de Zulueta (2016) have explored the value that trust brings, and mechanisms by which it can be nurtured, whilst Bevan and Wilson (2013) offer a cautionary experience about the impact of trust-models on performance figures. The existing work in this area suggests that trust can play an important and positive role in performance management, but that further exploration is needed to unpick and mitigate the potentially negative consequences of adopting it without due care and attention.

Intrinsic Motivation

It is worth noting that the implication of horizontal accountability and trust is a rejection of 'public choice theory' (Buchanan and Tullock 1962). In order for peers to hold one another to account for the quality of their judgement-making, it is necessary to reject the idea that these people are necessarily captured by producer-interest and will only act according to their own self-interest. It is necessary to start from a belief that they are (at least capable of) having value-driven intrinsic motivation to do a good job. A starting point which says that only extrinsic motivation is possible (people must be made accountable to others at a remove in order to be motivated to do a good job) does not, in itself, violate the lessons of complexity, but does seem to run counter to the principles required to successfully enact a complexity-friendly position.

The mechanics of PM

Purpose: Combining flexibility with direction

How do people know the aim of their work? What is the goal that they are trying to achieve? This is a fundamental question for performance management. We have seen the problems that OBPM encounters by defining the aim of performance in terms of defined outcomes. Outcomes are too rigid and inflexible in order to guide performance amidst the instability and unpredictability of complex systems.

Boulton (2015: 134) describes this problem as finding the balance between pre-planning and persistence and flexibility and adaptation. We need a mechanism which guides judgement-making towards a desired state-of-affairs, but which enables those making judgements to revise everything (including what a desired state of affairs look like) according to changing circumstances.

The concept of 'purpose' (Pell 2012) seems to meet this need. Pell's conception of 'purpose' gives a customer-focussed sense of direction to staff who undertake actions. For most social interventions, the purpose is often a specific formulation of the general idea: "Help me [the customer] to live the life I want to lead." (Seddon 2016). This provides help with making the judgement 'should I do this or not?', but is flexible enough to be interpreted within particular, and ever-changing, contexts.

We can conceptualise the role of 'purpose' in two ways. Firstly it acts as a mechanism for 'reification' of a 'community of practice' (Wenger 1998: 58). A shared purpose creates a sense of community amongst a group of people, and helps to make that sense of community tangible to them. This is reinforced through the physical expression of this purpose in key documents, meetings and display within the working environment.

Secondly, using the conceptual tools of complexity, 'purpose' serves as a galvanising value which acts as an attractor within the system. The sense of purpose that staff share is a force which contributes to results clustering in a particular pattern in state space.

The role of measurement: a focus on learning

As we explored in a previous section, one of the key points that the epistemology of complexity brings to performance management is the importance of being humble in our claims about what we can know. We can combine this insight with the question 'why do we measure?' Performance management often focuses on the question: 'what should we measure?' Obviously, what we measure is important, but the question 'why are we measuring?' is foundational for our thinking in this area.

The answer that complexity seems to give us is that the reason to measure is to learn and improve, not to make ourselves accountable to others. Measurement, undertaken by those who are close enough to the detail of situations to understand the limitations of the data, is an incredibly valuable tool for learning and improvement. Measurement for accountability, where data is passed to those who seek to interpret it from a distance, seems inappropriate, given a complexity perspective. (And violates Campbell's Law (Campbell 1976) – which states that if quantitative indicators are used for the purpose of social decision-making, they corrupt and distort the processes they intend to monitor.)

Supporting better judgement-making: communities of practice with positive error cultures

How can PM improve judgement making in situations of uncertainty? Firstly, we must acknowledge that the nature of judgement-making is both relational and uncertain. We have seen that elements within complex systems are interdependent, and that the patterns of results that complex systems produce are both path-dependent and subject to unpredictability. This means that (a) people making

judgements within complex systems are doing so in ways which intrinsically impact on one another, and (b) no-one can be certain about how their judgements will translate into results.

The condition of uncertainty means that mistakes are inevitable and unavoidable. In order for learning and adaptation to occur, people within the system must make those mistakes, and the uncertainty they feel about their judgements, visible to their peers. This requires the creation of 'positive error cultures' (Gigerenzer 2014) in which the disclosure of mistakes and uncertainty is positively encouraged by the performance management mechanisms of the organisation.

Secondly, the relational aspect of judgement-making speaks to the constituency in which learning occurs within complex systems. A complexity-friendly PM must promote learning amongst communities of practice (Wenger 1998). Further, learning about practice must feed back into the design and architecture of the system itself. This speaks to the necessity of strong feedback loops between performance management and public management more broadly.

Conclusion

We have been able to explore the implications of complexity approaches for PM. We have translated these into an articulation of a complexity-friendly purpose and focus for PM, identified aspects of the conceptual framework required of a complexity-friendly PM, and identified some of the PM mechanisms which could be helpful in making this practice real.

These are offered as a contribution to on-going dialogue about what a complexity-friendly PM might look like. These aspects of a complexity-friendly PM are likely to be incomplete, and some may be just plain wrong. At the very least, these elements can function as sets of hypotheses which can be tested through empirical research. Potential research questions could include:

- How does practice improvement in complex environments come about?
- Does the creation of positive error cultures improve people's ability to respond to complexity and uncertainty?
- What is the role of horizontal accountability in the performance management of complex systems? How does it fit with vertical accountability in practice?
- What are good reasons for those who resource social interventions to trust those who are delivering them?

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