This report would not have been possible without the generous pre-writing comments and guidance of Natalia Adler (UNICEF), Dave Algoso, Jesper Christiansen (MindLab), Duncan Green (Oxfam), Arndt Husar (UNDP-GCPSE), Dominik Hartman (MIT Media Lab), Bárbara Saavedra (WCS Chile), Elinor Bajraktari, and Pablo Yanguas (Effective States and Inclusive Development Centre, Manchester University).

The Working Paper Series of Executive Secretariat of the National Council of Innovation for Development seeks to open discussion topics that would advance the consensual design of long-term strategies in science, technology and innovation.

Here we present the work of Paz Bernaldo, which aims to answer whether development players have the ability to think and implement radically better programs and policies, and how can governments plan and operate in the face of uncertainty and complexity.ty.

Table of Contents

REVIEWING THE CASE FOR ADAPTIVE DEVELOPMENT AND CO-PRODUCTION IN POLICY AND STRATEGY-MAKING

Paz Bernaldo

September, 2015

1. Introduction — crises and an evolving development discourse

> *"[...] in countries around the globe, even in the most mature democracies, politics today is marked by pent-up anger, cynicism, fear, and violence. From the United States, an unexpected cauldron of populist discontent, to Europe, the Arab world, and beyond, there is widespread loss of faith in good government and even in the idea of progress. It is as if societies have lost the knack, and the taste, for reasoning together to plan futures which all can see as serving their needs and interests. Crisis, however, brings opportunity, in scholarship no less than in politics. This troubled historical moment offers an unexpected vantage point from which to rethink our ideas of democracy and good government [...]"*
> -Sheila Jasanoff (2012, p.1).

Such unexpected vantage point seems to be bringing with it a rethinking of the *how* of development as well as the *what*: the development discourse is evolving (Root, Jones, & Wild, 2015; Green, 2015; Chambers, 2011; Ramalingam, 2013). Development policy and practice, in development assistance (also called 'aid industry' or 'international development sector') as well as in public administration, have been challenged in recent years to account for the complexity and uncertainty underlying these crises. Have development actors[1] got the *knack* to think and do development not just differently but radically better?[2] How can governments plan and operate in uncertain and complex contexts?

This document will be looking at two sets of emergent responses to those questions. One set brought in by a group of organizations, practitioners and scholars *within* the international development community, and the second brought in by a very-heterogeneous group of public administration actors, mostly from developed countries. While the first advances adaptation as the core element, the second emphasises the centrality of co-production in development practice, if good public outcomes are to be achieved. Are these responses related and how? Do they provide any clues for Chile's own search for development? Through exploring both responses, this document aims to offer a rather light-touch overview, not a comprehensive understanding on these issues. Its general purpose is to trigger local discussion, and further research and action.

---

1   With development actors this document refers to people and organizations working on development issues at the local, national, regional or international levels.

2   That there is a deep crisis in public sector administration has been recently recognized by organizations like the World Bank. See more about the World Bank's approach to public sector management in the document called "2011-2020: Better results from public sector institutions".

Essential to understanding the *why* of this changing discourse, is to examine the still dominant models of institutional reform, policy-making, strategy-making, program-making and implementation prevailing among governments and development organizations. These are highly linear approaches which often assume a single end-point countries (or organizations) are or should be working towards and a 'rational choice' decision logic by the involved actors (Root *et al.* 2015). In other words, they assume unambiguous issues, clearly defined objectives, undisputed causal relationships and predictable behaviour (Ramalingam, 2013). Discoverable end-points and the rational and utility maximizing behaviour of the stakeholders imply institutions can be reformed or created according to particular blueprints or best practices. However, mounting criticism from an array of development organizations, government agencies, scholars and practitioners, working in different sectors and disciplines, have shown the importance of local environments, and the nonlinear nature of the interactions between people, institutions and systems. Change processes are themselves non-linear, unpredictable and uncertain for all involved (Root *et al.* 2015; see Stirling, 2015). Trying to tame them by applying mechanical models of 'detailed advanced planning and contracted implementation' have led to poor results in development reform (Booth & Faustino, 2014), and in public policy in general.

In recent years, systems thinking and complexity thinking[3] have been helping international development actors grasp the main elements of working in uncertainty, and move towards a better understanding of change processes[4]. This learning has enabled them experiment with different approaches, models and strategies, such as convening and brokering solutions with stakeholders, or experimental and rapid iteration built on fast feedback and adaptation (Green, 2015). The emergent response is adaptive strategy, program, policy and implementation, which does not come with best practice guidelines. The response essentially posits the centrality of merging design and implementation, or knowledge and practice, of context-based experimental learning, and bottom-up driven innovation.

---

3   *For more on the differences between systems-thinking and complexity-thinking see Ramalingam et al. (2008, p.5).*

4   *The Overseas Development Institute (ODI), a UK-based independent think tank, is one of those organizations. This document builds on many of their recent studies and research.*

As another wave of response to the context of increased complexity and uncertainty[5], a *public innovation* agenda has gained momentum in recent years, especially among developed countries. The multitude of cross-cutting and interconnected crises seems to be giving way to an emerging paradigm in public governance[6]. At its core, this new paradigm challenges the status-quo and its mechanistic *expert-definition-administration-resolution*, at the same time interacting uncomfortably with it (Bourgon, 2015; Robinson, 2015; Christiansen & Bunt, 2012). This new paradigm or *culture of decision making* (Christiansen, 2014) lays emphasis on the need to co-produce public value with citizens, which are seen as resourceful and active agents, not as passive clients or recipients. What is to be done by the state needs not be pre-defined, but explored and experimented *with* —not *for*— the rest of actors. This echoes Ostrom's (2000, p. 3) call: "the penchant for neat, orderly hierarchical systems needs to be replaced with a recognition that complex, polycentric systems are needed to cope effectively with complex problems of modern life and to give all citizens a more effective role in the governance of democratic societies." The 'widespread loss of faith in good government' and in the 'idea of progress', which signify trembling trust and legitimacy, also signify pressure to act differently in addressing public problems. Thus, the opening up of the vantage point for rethinking the social contract between states and citizens, the purpose and outcomes of development, and for experimenting with the *'how'* to do all this.

Importantly, the *'how'* co-production and adaptive development approaches bring forward to respond to complexity, seems to imply that in order to achieve good outcomes, a truly diverse range of agents must be involved at the most initial stages of problem-definition, policy, service or strategy design; that the decision of who gets involved and has power over the problem-definition and decision making processes, is of uttermost importance. Who's got voice relates not only to issues of legitimacy or trust, but to the issue of effectiveness.

---

5   *Has the world always been this complex? For more on why it is said there is 'increasing' complexity, see Ramalingam (2013).*

6   *Robert Chambers (2010, p.3) defines 'paradigm' as "a coherent and mutually supporting pattern of concepts and ontological assumptions; values and principles; methods, procedures and processes; roles and behaviors; relationships; and mindsets, orientations and predispositions".*

Why asking all this?

The need to ask broadly, across disciplines and sectors, came from the recognition of a changing state of crises in Chile's current public sphere. Metaphorically speaking, mistrust seems to spread among citizens and decision-makers[7] as a killing virus would do in a packed morning public bus. And as it happened to Singapore's authorities in 2003 with the SARS virus outbreak (see Ho, 2012), this mistrust confounds decision-makers and citizens, and its 'fatality rate' is leaving everyone in shock.

Thus, the first question explored was how might we create *a new relationship* between state and citizens? But because framing a question as the lack of a solution —in this case a new relationship— did not allow for a good set of options[8], that question was soon replaced by a broader one: *how to do things differently?*

This document is divided in the following sections.

- **Section 2** explores why complexity thinking is important for understanding public problems.

- **Section 3** digs into details on how development actors currently deal with change processes (including complex problems); they follow the dominant control oriented planning and management approach to change: *taming-the-complex*.

- **Section 4** examines the main elements of old and new public administration paradigms in western countries to look at how they explain *change*, and to understand the type of thinking being challenged by the public innovation response.

- **Section 5** explores the two emerging responses to complexity: *adaptation* and *public innovation* (marked by co-production). *Adaptation* is understood as the process of making small changes, observing the

---

7   *This document considers decision-makers to be either politicians (those elected or appointed in a political capacity) or public officials. Public officials are those ranging from junior public officers to top level public managers (in either implementing or policy agencies). All of these are considered state representatives and more generally, development actors.*

8   *For more on the process of problem construction, have a look at Matt Andrew's (2014) blog post and video.*

results, and adjusting continuously; contrary to the dominant planning approaches which involve ex-ante design (Barder &Ramalingam, 2012). This response emphasises interaction, change, emergence and context. Instead of searching for precision in planning, it emphasises capacities and processes to generate productive novelty (Ramalingam, 2015). *Public innovation* also reacts to dominant planning approaches, also exploring what kind of knowledge-management, learning and processes serve the public best. It emphasises the centrality of co-production.

- **Section 6** reviews three specific adaptive approaches to strategy, policy and implementation: 'problem-driven iterative adaptation', human-centred design and strategic foresight.

- **Section 7** explores, purely as an exercise, the merging of specific processes and tools to help build adaptive capabilities inside organizations building public strategy.

- **Section 8** concludes, with further questions.

This light-touch review report is based on two weeks of desk-based research plus three weeks of writing. The author conducted 8 unstructured exploratory interviews with development practitioners and researchers, at the beginning of the desk research process.

2. Complexity and public problems — brief look

*The situation the world is in is a mess. This
hardly requires documentation; it's obvious —*
Russell L. Ackoff (2004)

The recognition that most public problems are multifaceted isn't new, and neither it is that governing has become even more complex considering the global economy and its interdependencies, the rise of income inequality, sharpening social unrest, financial and environmental crises and so on and so forth. What is different, however, is that recently complexity has been studied and discussed with increasing sophistication (Root *et al.* 2015; Hallsworth, 2012; Ramalingam *et al.*, 2008). Complexity theory, also referred to as complexity sciences or complexity thinking, has in recent years examined the integral characteristics of complex systems and how interconnected and unpredictable phenomena work (Jones, 2011). The promise is that a better understanding of what complexity entails should helps development actors learn how to deal with it more effectively.

2.1 SIMPLE (CAKE) - COMPLICATED (ROCKET) - COMPLEX (CHILD) SORT OF PROBLEMS

Glouberman and Zimmerman (2002) provide a highly illustrative distinction between simple, complicated and complex problems, comparing following a cooking recipe, with sending a rocket to the moon and raising a child. Baking a cake, a simple problem, requires following a recipe to replicate a positive outcome. With the right ingredients and the right recipe, anyone can cook an eatable cake, no previous experience required. Sending a rocket to the moon, as a complicated problem, requires a high level of expertise divided in many tasks among specialists and technicians and must be rightly coordinated. Despite this difficulty, if the many processes are followed correctly there is reasonable certainty of outcome. But raising a child, a complex problem, is a completely different story, every situation is distinctive and although expertise can be a valuable contribution, it is neither necessary nor sufficient to assure success.

Horst Rittel and Marvin Webber (a design theorist and a urban planner respectively) defined complex problems as 'wicked' back in 1973 (p. 155): "the search for scientific bases for confronting problems of social policy is bound to fail (...) they are 'wicked' problems[9], whereas science has developed to deal with 'tame' problems. Policy problems cannot be definitely described". Wicked problems are open to interpretation, are characterized by competing options for solutions, and will most likely never be fully solved (Bason, 2010)[10]. Those affected by these problems will have very different views on what the nature of the problem is and how to deal with it. Acknowledging their existence means admitting to face societal challenges for which no definite answer exists (Vandenbroeck, 2012).

Scholars and practitioners working on complex or wicked problems stress the importance of merging design and implementation (or policy and implementation) to understand such problems and work towards improved policy and practice. When dealing with complex problems, it is crucial to use real-time monitoring and evaluation to identify gaps between designs and emerging outcomes, a learning by doing (and *doing-by-learning*) approach to management and decision-making. However, doing that requires not just new methods and techniques but also new collaborative approaches, organizational processes and most importantly new mind-sets ready to deal with uncertainty (Ramalingam, Laric, & Primrose, 2014, pp. 2-3). Hence the calls for a paradigm shift[11]. Sections 5 and 6 address what is required to move towards such change.

2. 2. WHAT ABOUT COMPLEXITY?

Many phenomena in recent times have undermined the modern science goal of offering a reductionist explanation of all phenomena in terms of fundamental physics[12], like the unpredictability of weather and climate or the intricate nature of living organisms and

---

9   *'Wicked' is not used here to signify 'evil' but to signify the quality of resisting solutions. A wicked problem is difficult or impossible to solve because its characteristics contradict themselves and are constantly changing. Also, due to the complex interdependencies found in this type of problems, efforts to solve them could reveal or create new problems (Source: https://es.wikipedia.org/wiki/Problema_retorcido).*

10   *See Churchman (1967) for the first discussion around 'wicked problems'.*

11   *Ramalingam (2013) explains that scholars looking at the phenomenon of 'development narratives' have found that these narratives develop as a 'cultural paradigm' as they become influential. Such narratives could be said to provide an 'operating system': certain development programs, methods and analysis get associated with particular narratives.*

12   *For a review of new and old views of physics see Upoff (1987).*

of economic, political, and cultural systems. Antireductionism, says Mitchell (2009), has gained traction as new sciences such as systems biology, evolutionary economics, and network theory try to explain how complex behaviour arises from large collections of simpler components. *Complexity*, once an ordinary noun, now indicates a field of many branches (Holland, 2014).

Emergent behaviour is a requirement for a system to be called 'complex' (ibid).

A complex system is a group or organization made up of many interacting parts. Archetypal complex systems are rainforests, the global climate, economies, and immune systems. Holland (2014) explains: the rainforest contains a huge variety of species and the interactions between them range from extreme generalists ('army' ants eating everything on their way) to extreme specialists (a 'comet orchid' which can only be pollinated by a particular moth). Adaptation in rainforests is an ongoing, relatively rapid process, which continually gives way to new interactions, and makes possible a huge variety (ibid). Many social systems exhibit similar characteristics, like economies, with hierarchies of workers, departments, firms, and industries. These complex systems exhibit a distinctive property called emergence, described by the antireductionist *'the action of the whole is more than the sum of the actions of the parts'*. This means that individual parts (components or agents) and their interactions often lead to large-scale behaviours which cannot be predicted from knowing the behaviour of individual agents. Such collective effects are *emergent* behaviours (e.g. price fluctuations in markets) (Mitchell & Newman, 2002). Complexity sciences try to find common principles (similarities) which can explain how such collective sophistication (agents' interactions and *emergent* behaviour) happens, for example, in social groups or economic markets (Mitchell 2014).

One such similarity is that all these systems exhibit self-organization: the system's components organize themselves to act coherently without any central or outside 'controller' (nobody in a crowded street controls the crowd). The systems determine and process information with sophistication not available to their individual components. For example, the consciousness of the human brain is a characteristic of how the different brain cells interact with each other, but we cannot say that a particular cell is, or is not, individually conscious (Barder & Ramalingam, 2012). Complex systems defy precise prediction, resisting the sort of equilibrium that would make them easier to grasp (Mitchell, 2014). Think of a crowd on a city street, it is impossible to predict the movement of any given person, but there is order, few collisions happen, even in the most crowded streets (Green, 2015).

These interdisciplinary efforts, referred as complexity thinking or complexity sciences, have transformed fields such as urban design and epidemiology in ways that provide further strength to development actors' attempts to operationalise complexity thinking into their work. The payoff for complexity-aware development practice and policy is vast, says Kleinfeld (2015)[13].

2. 3 WHY LOOKING AT COMPLEXITY FOR DEVELOPMENT AND PUBLIC GOVERNANCE?

Most social, political and economic systems are not cakes or rockets. These are complex systems with relationships and feedback loops that cannot be reduced to chains of cause and effect.

The Overseas Development Institute (ODI) has tried to relate the ideas of complexity theory to current development thinking and practice. And a lot is at stake as these ideas challenge dominant development models, locked-in as these are to procedures requirements like the logical framework and impact assessments (Ramalingam *et al.*, 2008, p. vii). The good thing is that these ideas allow different theories of change for tackling change processes in a more strategic manner (Jones, 2011; Hummelbrunner & Jones, 2013).

What key characteristics of complex systems are most relevant for development/public sector work? (Table 1 will further develop some of these characteristics).

- Complex systems are characterised by **interconnected and interdependent** elements and dimensions (Ramalingam *et al.* 2008, p.8).

- **Feedback** processes crucially shape how change happens[14] in a complex system (ibid).

- **Adaptive agents** react to the system and to each other, leading to various phenomena (ibid).

---

13   *For more on the application of complexity theory to the social sciences see Byrne & Callaghan (2013).*

14   *For more on how change happens in social and economic systems, see Krznaric (2007). Also, Duncan Green will publish a book, How Change Happens, in late 2016.*

- The overall system and the agents within it or **co-evolve**[15], over time (ibid).

- **Path dependency.** The trajectory of a complex system is irreversible and non-deterministic. Many alternatives are possible at some stages of a system's development, but once one of these alternatives gains the upper hand, it becomes 'locked in' (ibid).

- In complex systems, **outcomes** are influenced by **several factors** acting together (ibid).

- **Emergent.** Change can lead to the emergence of features qualitatively different from the past (Boulton, 2012).

- Within complex systems, relationships between dimensions are frequently nonlinear. Sometimes current patterns are very resilient, sometimes change can be fast and radical (ibid). This nonlinearity underlines the need to identify and respond to 'critical junctures', like shocks or political unrest (Green, 2015).

- Complex systems are **out of control.** Not one pedestrian controls the crowd (ibid).

- **Resilience** is a property of complex systems. It is essential to understand the factors that combine to strengthen or undermine it (ibid).

- Contingent on history and **context**. "The future depends on the *detail* of what happens, does not smoothly follow from the past" (Boulton, 2012).

---

15   *Co-evolution is a major mechanism for generating non-linear interactions between complex systems agents. For example, "a leafy bush has a wide range of herbivorous insect predators. Then, as the bush evolves, it develops a protein (say quinine) that is poisonous to most insects. After further evolution, some insect species develops an enzyme that digests quinine. Still later, the bush evolves quinine-b that is poisonous to these insects, and so it goes on. Note that, while the bush and the insect seem to be neither gaining much ground with respect to the other, the co-evolving pair is better off in relation to its surroundings. The bush only has to 'protect itself' from a single predator, while the predator has a food supply that it does not have to share with other competitors. Analogous situations occur between competing suppliers for production lines, arms races between nations, and other sets of co-evolving CAS agents" (Holland, 2014, p.192) (CAS means complex adaptive systems).*

Two important points to remember while reading Section 3, are that the capacity to tackle complex problems is often distributed among agents as problems manifest in different ways and at different levels (Jones, 2011) and that: "perhaps the greatest challenge lying in complex systems stems from the fact that they fundamentally state that the best course of action will be highly context-dependent" (Ramalingam *et al.*, 2008, p. ix). These ideas of distributed capacity (knowledge and power) and context-dependence will be referred back throughout the document.

3. How do we actually deal with change

3.1 THE CRITIQUE: *TAMING* CHANGE

Policy and implementation deal with non-linear and interdependent problems, with often unpredictable change processes involving a wide range of stakeholders. However, dominant approaches applied to policy and implementation problems are based on the assumption that knowledge and policy implementation can be linked in a straightforward, linear manner (Jones, 2011). Think for example of the influential Walt Rostow[16] identifying developed countries as those which had subscribed to a Newtonian view of the world[17]. In his view, in order to achieve development, countries needed to gather certain knowledge and act on those cause and effect laws identified by developed countries: "X causes Y in Western Europe, then let's make sure we do X in Asia to ensure we get Y'" (Ramalingam, 2013). These approaches assume single 'end points' and fully rational actors —or the idea that only selfishness is rational (Goodwin, 2014). They also assume problems present stable hierarchies, clear causality, and consensus on the goals (Jones, 2011). Command-and-control regulation, legislation, standardised solutions and imported 'best practices'[18] are often presented as suitable responses to complex problems.

---

16   *The Rostow's Stages of Economic Growth model is one of the major historical models of economic growth. It was published by the economist Walt Whitman Rostow in 1960. The model postulates that economic growth occurs in five basic stages, of varying length: traditional society; preconditions for take-off; take-off; drive to maturity; age of high mass consumption (see Rostow, 1990). For more on his influence in development see this short e-article: http://www.theguardian.com/global-development/2012/oct/08/us-economist-walt-rostow-development*

17   *For more on the Newtonian paradigm in social sciences see Uphoff (1987).*

18   *For an example of the strength of the 'best practice' narrative in development see this e-article about Singapore http://www.huffingtonpost.com/kishore-mahbubani/singapore-world-successful-society_b_7934988.html?utm_hp_ref=world*

These linear approaches' (cookbook type) recipes tend to look like this:

Certain resources are needed to operate your program me

If you have access to them, **then** you can use them to accomplish your planned activities

If you accomplish your planned activities, **then** you will hopefully deliver the amount of product and/or service that you intended

If you accomplish your planned activities to the extent you intended, **then** your participants will benefit in certain ways

If these benefits to participants are achieved, **then** certain changes in organizations, communities, or systems might be expected to occur

Resources/Inputs	Activities	Outputs	Outcomes	Impact
1	2	3	4	5

Your Planned Work   Your Intended Results

Source: Rogers (2008) in Ramalingam et al. 2014, p.6

The same logic can be seen in a recent diagram by Chile's Budget Office (DIPRES), the agency in charge of overseeing, approving and evaluating all public projects and programs:

End point

Then

If

Purpose/Goal

Then

If

Components

Entonces

If

Activities

If
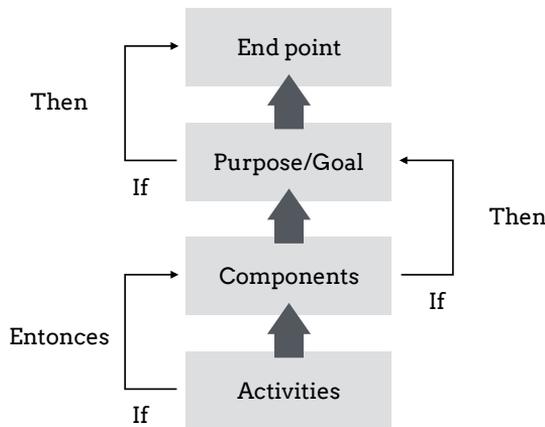
Source: DIPRES 2015, p.18

That is how the famous logical framework (LFA or 'logframe') approach deals with change[19]. The risk underlying LFA and similar approaches is that the programme or reform might end up irrelevant due to misunderstanding the nature of the problem, "ignoring the dynamic interactions involved or denying them for bureaucratic convenience" (Ramalingam *et al.* 2014, p.7)[20].

Policies or policy reforms are often driven by an ex-ante and expert driven process of: identifying unambiguous objectives and ways to achieve them, costs-benefit analysis, and implementation. Moreover, the interest in careful planning and ex-ante assessment increases with the degree of uncertainty, with planning seen as a way to control uncertainty. But we cannot control what is going to happen in complex systems, and most of the knowledge needed to inform appropriate action will only emerge during implementation, when plans can quickly turn irrel¬evant (Hummelbrunner & Jones, 2013). Implementation is therefore preset, linked to specific activities and outputs. Monitoring and evaluation are seen as tools for control and compliance (Jones, 2011), not for learning. A good image for this idea comes from boxing champion Mike Tyson's observation: "Everybody has a plan until they get punched in the mouth" (quoted in Booth & Faustino, 2014, p.15).

Assuming causality means presuming the dynamics of the problem are predictable. A common critique to LFA and similar frameworks is precisely that they are too rigid to account for the uncertain and fluid elements of programming (see Bakewell & Garbutt, 2005, p. 15). Moreover, such type of planning framework is especially ineffective in environments with incomplete information and broken feedback loops[21], which is usually the case in most developing country contexts. The idea of effective central planning depends on access to a large amount of information, which makes it particularly ill-suited in contexts with scarce and expensive information (Barder, 2009).

According to Ackoff (2004, p. 2), this apparent stubbornness with *taming the complex* is making us 'wronger': "The righter we do the wrong thing, the wronger we become. When we make a mistake doing the wrong thing and correct it, we become wronger. When we make a mistake doing the right thing and correct it, we become righter. Therefore, it is

---

19   *For examples of the rigidity of LFA in international development practice, from the point of view of practitioners themselves see Valters (2014).*

20   *For an example of the popularity of LFA in Chile's public sector see DIPRES (2015).*

21   *For more on the importance of feedback loops see "Closing the loop: Effective feedback in humanitarian contexts" (2014) by ALNAP.*

better to do the right thing wrong than the wrong thing right." This is, he says, significant because many of our problems relate to policy makers trying to *do the wrong things righter*.

Governments becoming 'wronger' by applying increasingly sophisticated linear thinking results familiar: *let us do more detailed analysis*, evidence reviews and strategies, and rigorous performance monitoring. A centralised 'control policy brain' is supposed to need all that to be better informed and responsive (Hallsworth, 2012). Precisely, says Ellerman (2004, p.3) quoting Schön (1971), the standard approach treats government as a central brain and the rest of society as passive periphery. This brain designs new policy and imposes it on localities. Then localities "learn to beat the system" while governments "bury failure or learn from it only in the sense of veering away from it". Evaluation serves to establish and monitor "the extent of peripheral conformity", the control and compliance Jones (2011) refers to.

While it seems tempting in the short run, trying to tame a complex problem will always fail in the long term. "The problem will simply reassert itself, perhaps in a different guise, as if nothing had been done; or worse, the same solution will exacerbate the problem" (Christiansen K., 2009, quoted in Ramalingam, 2013, p. 127).

The question is then how to make mistakes *doing the right thing*? Sections 5 and 6 will get to that.

3.2 HOW CHANGE, ITSELF, HAPPENS? OLD VIEWS, NEW VIEWS

Is it important to look at how change itself happens? It is, if the purpose is to influence it. For example, it is usually said crises play a large role in change. Driven by unforeseen events crises might lead to 'tipping points'[22] with unexpected consequences. They can be catalysts for fundamental reforms or institutional change previously unthinkable (Bason, 2012; Jones, 2011). But what else drives change? To answer that, new analytical models are needed, models that can capture the dynamism, for example seen in crises, and help build an understanding of the non-linear nature of the change processes (Ramalingam *et al.* 2014)[23].

---

22   For more on rapid change in human societies see Gladwell's The Tipping Point: how little things can make a big difference (2006).

23   For more on these analytical models and other methods and techniques for dealing with

Drawing from complexity theory and political economy, in the table bellow ODI compares the conventional and non conventional views of change processes. Table 1 will be referred to as 'T1' a few times throughout the document.

	A CONVENTIONAL UNDERSTANDING OF CHANGE PROCESSES	B NON-TRADITIONAL MODELS (COMBINING COMPLEXITY AND POLITICAL ECONOMY)
System structure and agents behaviour 1°	• Systems are comprised of individual actors that respond independently to externally generated incentives, develop future strategies with full understanding of costs and look for optimal solutions. • A static vertical structure enables goals and rules to be generated and implemented in a top-down way. One element of the system can change, without triggering a counter-response. *Distinctions between local and non-local actors are underplayed.	• Systems have many interdependent, diverse actors that interact, self-organize and co-evolve in complex networks, according to shared evolving rules. • Systems have a dynamic structure that arises from parts interacting without a central authority; each actor re-evaluates its position through continuous feedback loops and adjusts its behaviour to the actions of others, recreating the system. • Familiar solutions are more likely to be selected over optimal ones.
Change processes (dynamics) 2°	• Change is the direct and proportional result of deliberate actions and accumulation of inputs. Actors' interactions are mediated by autonomous mechanisms (like a market), not by reference to other actors. • The behaviour and properties of the system can be quantified, explained and predicted by calculating the sum of characteristics of its individual components. • Transitions are from fixed end points or one static equilibrium to another. • Systemic change is usually consequence of external shocks or the accumulation of small changes.	• The behaviour of the system cannot be understood from the sum of the behaviours of the parts. The interaction among actors contributes to a more complex behaviour of the whole that its individual components did not possess. • Systems have many subsystems with multiple levels of interaction. A network (market, institution) is not just an aggregate; it is a component, a building block of a larger system. • Relationships are dynamic. Actions at one scale impact behaviour at another. Dynamics at micro levels produce emergent outcomes at higher levels. • Change is discontinuous. A small change can have a radical qualitative effect.
Problem solving methods 3°	• All societies can achieve global institutional standards and convergence toward optimal policies or institutions. • Problem-solving starts with assessing the continuum and searches for a single solution that is better than alternatives	• A single optimal solution cannot be identified and may not even exist. Suboptimal solutions may persist for long. Prior conditions shape the outcome. • To understand the behaviour of a system, one must focus on the network of relationships of its constituent parts.
Policy response 4°	• To identify the optimal solution fill the gaps of missing information and knowledge about causes and outcomes. • Parts of the system can be disregarded with no damage to the analysis. Malfunctioning parts are addressed separately. • Success, once attained, can be infinitely replicated. External interventions can alter change in a reversible manner.	• Influencing behaviour depends not just on demonstrating the most effective of solutions. It depends also on the choices made by other actors with whom the components of the system may interact. • Nothing can be taken away without altering the outcome. To attain desired outcomes, a strategy should be sufficiently adaptive to constantly changing environment conditions.

Source: Adapted from Root et al., 2015, p.9-10

complex systems see Ramalingam et al. (2014, pp. 8-10).

Summing up so far, we have seen in very general terms what complexity thinking is, how is changing the way we understand change, and why it is related to current development/public governance practice. The critique is that dominant models of policy and implementation deal with simple, complicated and complex problems in basically the same way. Assuming linearity in change and interactions, perfect rationality ('no biases here sir': see A1-T1) and absence of context (prior conditions don't matter: A2-T1), undermines the chances of adapting towards good solutions or outcomes.

What else we know about change processes: networks and collective action

We have seen that once a reform (or change process) begins, the direction may change markedly and rapidly (B2-T1). This is because changes operate among diverse environments, and in large interdependent networks where agents constantly adapt, pressuring others (B1-T1). Considering this, how to respond to or influence change? Key is to understand how networks operate and how collective action can be mobilised among networks, even when facing diverging interests (Root *et al.*, 2015).

Instead of asking how to build collective action among well defined/similar groups (B1-T1), is important to remember action occurs within 'evolving systems' (ibid) (B2-T1). This means it is crucial to understand how interdependencies affect the choices of diverse agents (B3-T1) and how their relative opportunities and capabilities arise from within a set of relationships or interdependencies (B2-T1)[24]. Thus, one key lesson for policymakers is to move beyond the narrow focus on cost-benefit analysis (A1-T1) of individual incentives (ibid). Instead, network analysis can help collective action by targeting the network of social relationships (B3-T1), mapping them and analysing how the structures of relationships affect behaviours (ibid). Other key lesson is to work with or through existing institutions and *strengthen linkages to engage more broadly* (ibid). But as existing networks (institutions, markets) may be part of the problem, engagement and its timing must be carefully considered. Broad but poorly targeted engagement could be ineffective, or not be helpful at every stage or at certain scales (ibid). Genuine participatory processes are central to build social capital between networks and agents affected by a problem. Devolution of power can promote reciprocity, cooperation and reinforce perceptions of common problems and interests (Jones, 2011, p. 8). Sections 6 and 7 will look at processes of participation/engagement.

---

24   *For more on the role of networks see Ramalingam et. al (2008) and Ramalingam et al. (2014).*

An important point is to note that collective action is currently happening through non-traditional networks (like markets), which are clearly showing the possibilities of social production or *crowd-sourcing*, of harnessing the collective knowledge and diversity of crowds. Wikipedia is one example, written and maintained by volunteers, with no central planning (Barder, 2009). Collaboration and collective action, built on patterns of social capital[25] and founded on trust, are central to achieving positive change in the face of complex problems and systems (Jones, 2011).

In sum, interdependent networks (and their *non passive* agents) matter —significantly— for creating change. Network analysis is one analytical model that can help decision-makers understand how networks operate, and how networks' interdependencies affect the choice, capabilities and opportunities of agents. Triggering collective action requires engaging the right networks and the presence of social capital and trust. Engagement just for the sake of it does not work. Sections 5, 6 and 7 will re-examine this. Next section explores how a greater understanding (or at least acknowledgement) of complexity seems to be informing changing conceptions of the roles of governments and citizens in public administration, but also how mindsets and practices which assume certainty and predictability, seem deep-sated in Chile's public administration.

---

25   *For more on the notion of social capital, see Goodwin's Five Kinds of Capital (2005).*

4. *Taming and then de-taming change in public governance*

The conventional *taming-the-complex* approach to change, policy and practice can be looked at as part of public administration/governance paradigms. It is often suggested current public innovation efforts in western countries are reacting to the limits of the mechanistic *New Public Management*, a paradigm pointed as unable to deal with complexity (see Dunleavy *et al.*, 2006; Manning, 2001). Bellow some of the main characteristic of these paradigms.

4.1 PUBLIC ADMINISTRATION IN WESTERN COUNTRIES

The paradigms listed below have mostly originated in western countries. But to various degrees, some of their principles have impacted public sector management reforms in developing countries as well (see McCourt 2013). Understanding the thinking behind these models is important to grasp the current calls for public innovation reforms spanning developed and some developing nations (including Chile).

Hartley (2005) distinguishes three competing paradigms of governance and public management:

Table 2

	'TRADITIONAL' PUBLIC ADMINISTRATION, AFTER IIWW	NEW PUBLIC MANAGEMENT (NPM), SINCE THE 1980s →	NETWORKED GOVERNANCE (NG) SINCE THE 2000s →
CONTEXT	Stable	Competitive	Continuously changing
POPULATION	Homogenous	Atomized	Diverse
NEEDS/ PROBLEMS	Straightforward, defined by professionals	Wants, expressed through the market	Complex, volatile and prone to risk
STRATEGY	State and produced centred	Market and customer Centred	Shaped by civil society
GOVERNANCE THROUGH ACTORS	Hierarchies Public servants	Purchasers and providers Clients and contractors	Networks and partnerships Civic leadership
KEY CONCEPTS	Public goods	Public choice	Public value
INNOVATION	Some large scale national and universal innovations	Innovations in organizational form more than content	Innovation occurs at central and local levels

IMPROVEMENT	Large step-change Improvements initially, but less capacity for continuous improvement	Improvements in managerial processes and systems. Customer focus produces quality improvements in some services	Aiming for both transformational and continuous improvements in front line services
ROLE OF POLICYMAKERS	Commanders	Announcers/ commissioners	Leaders and interpreters
ROLE OF PUBLIC MANAGERS	Clerks and martyrs	Efficiency and market maximizers	Explorers
ROLE OF CITIZENS	Clients	Customers	Co-producers

Source: adapted from Hartley, 2005, p.28

Hartley presents Networked Governance (NG) as the emergent paradigm that aims to deal with the complex, continuously changing nature of social systems. Change, triggered at various levels, can be managed through networks (B3-T1). Policymakers (elected representatives) must lead and interpret the interests of civil society, while public managers must explore solutions with citizens, seen as co-producers. The ideas 'interconnectedness' (B1; B4-T1) and 'nonlinearity' (B2-T1) seem present. NG is responding to NPM's linear *expert-driven-definition-administration-resolution.* And the idea of public managers as *explorers* implies there is no optimal solution to be 'discovered and deployed' (the famous 'end-point').

The International Institute of Sustainable Development (IISD, 2015) states a 'networked governance' model moves from vertical to horizontal decision-making, removing institutional silos and creating horizontal channels of knowledge exchange and collaboration. Social capital turns essential: "the higher the level of social capital within a governance network, the more self-organization will allow problem-solving and governance goals" (Huppé, Creech, & Knoblauch, 2012, p. 1).

It would seem in NG co-production is not only regarded as a *nice-to-have*, but as a condition for positive change. Section 5 will review in a bit more detail what co-production means (does or could).

'Whole-of- government' is used to describe a networked approach where decision makers in different parts of government seek to overcome intra-government differences to tackle problems as a coherent and coordinated whole (CSF & College, 2014). This approach has been used and championed by Singapore's government, which began using it to deal with national security, but has since applied it to problems like population and climate change

(Ho, 2012). Essential to it is that it requires the pooling of diverse insights, experiences and expertise (ibid), injecting "diversity and complexity into the policy process" (ibid, p.6); good ideas are not the monopoly of single agents or of the government alone.

Denhardt and Denhardt (2007) champion instead the *New Public Service* as the emergent paradigm responding to the limits of the NPM. Robinson (2015) presents their ideas, also drawing from a variety of related literature to review four different paradigms: the *Old Public Administration* (OPA), the New Public Management (NPM), the *New Public Service* (NPS) and the *New Public Governance* (NPG). Table 3 bellow reviews the first three (Robinson (2015), unless noted):

	OPA	NPM	NPS
OVERVIEW	Classic Weberian model of bureaucracy, originated in the growth of modern organizations, and democratization: citizens would be treated equally (McCourt, 2013).	Considering OPA, the essential change was a new focus on behaviour driven by performance (McCourt, 2013).	Championed by Denhardt and Denhardt (2007), places citizens, community and civil society at the centre.
FOCUS IS ON	Inputs and the efficient management of resources, rather than in outputs as in goods and services (McCourt, 2013).	Better rather than adequate performance (ibid).	Citizens' interests.
KNOWLEDGE COMES FROM...	High level decision-makers.	Policymakers and public sector managers as strategic change agents.	Multiple actors can be change agents.
HOW	*'Rowing the boat'* (Denhardt & Denhardt, 2007). • Executive authorities control essentially unified and hierarchical structures of administrative management. Public organizations' goal is achieving the most reliable efficient operations possible (ibid.) • Centralized control, rules and guidelines (ibid). • Separation of policymaking from implementation (ibid).	*'Steer, not row, the boat'* (Denhardt & Denhardt, 2007). • Yardsticks to regulate bureaucratic behaviour are: competition, delegation, performance and responsiveness (McCourt, 2013). • Marketization: contracting out of core services to companies and non-for-profits. Competition between public and private agencies for resource allocation and service delivery contracts. • Executive agencies responsible and accountable for implementation. • Policy implementation is organizationally distanced from the policymakers. • Emphasis on inputs and output control, evaluation, performance management and audit, con cost recovery.	*'In our rush to steer perhaps we are forgetting who owns the boat'* (Denhardt & Denhardt 2007). • Not steering, not rowing. The point is not to move to another *admincentric* model (like OPA and NPM). Therefore, the focus should be on serving and empowering citizens, on building integrity and responsiveness-based public institutions (ibid). • Serving citizens, not costumers by articulating their shared interests, facilitating and strengthening citizen engagement, brokering, negotiating and solving problems in partnership with citizens (ibid).
MODEL OF BEHAVIOUR	Administrative rationality. Regular, predictable and rule-governed behaviour (McCourt, 2013).	Self-interest, technical/economic rationality, principal-agent theory.	Beyond narrow self interest towards wider public interest.

New Public Governance (NPG) — Championed by Osborne (2006, 2010), but not as a new paradigm as it is *neither that normative nor that prescriptive* (Osborne, 2010, p.2). New participatory, interactive, and less direct forms of governance unfolding in liberal democracies have been referred to by some scholars as NPG. But as a concept NPG remains conceptually underdeveloped (Torfing & Triantafillou, 2013). Compared to NPM, there is no consistent theoretical or ideological framework supporting NPG, yet we find a cluster of key principles: process and outcome focus, coordination, participation, negotiation, feedback (multiple forms of accountability based on a variety of standards attuned to organizational learning), and co-production (engaging stakeholders in public problem-solving and service production) (ibid)[26].

Mauir and Parker (2014) propose instead a move towards a 'relational state'. They distinguish between three models of public administration: *bureaucracy*, *markets* and *relationships*, which respond to two broad views of the state, the delivery state and the relational state.

Table 4

THE DELIVERY STATE		THE RELATIONAL STATE
BUREAUCRACY	**MARKETS**	**RELATIONSHIPS**
Desired outcomes can be achieved through rational plans developed by the technocratic elite and imposed through hierarchical authority.	Optimal equilibrium will be arrived at through the exercise of consumer choice in a context of competition between different providers.	Outcomes cannot be directly planned for in complex systems where phenomena have multiple and non-linear causes that interact in unpredictable ways.

(The leftmost column is labelled vertically: ASSUMPTIONS)

Source: adapted from Mauir & Parker, 2014, p.19.

Citing Olsen (2005, p. 23), Mauir and Parker (2014) explain why they are critical of the NG approach: "Bureaucratic-, market- and network organizations are usually portrayed as alternatives, based respectively on hierarchical authority, competition and cooperation (…) these are different mechanisms for achieving rationality, accountability and control, mobilizing resources and compliance, and organizing feedback from society". But in modern and pluralistic societies is unlikely that public administration can be organized on the basis of one principle alone. Administrations are likely to require more complexity than single approaches can provide.

---

26   *For more on how co-production is considered a tool of NPG see Howlett, Kekez & Poocharoen (2015).*

The needed shift towards the relational state, they say, can be summarized in: 'connect and deepen'. At the macro level systems should be more interconnected, to manage their complexity. At the micro level, complex problems require deep relationships: intensive and ongoing engagement between professionals and citizens characterized by a creative brokerage of solutions.

Overall, a number of scholars recognize the limitations of singular approaches to public administration/reform. Robinson (2015, p. 15) for example favours a hybrid approach to embrace adaptive responses and to allow a *radical turn*, in which success would lie with building constituencies of support among citizens for a very different public service.

4.2 PUBLIC SECTOR MANAGEMENT REFORMS IN DEVELOPING COUNTRIES

As mentioned, some of these paradigms' principles have to various degrees impacted public management reforms in developing countries. However, McCourt (2013) emphasises we should keep in mind that, for example, NPM was conceived as a first world solution to the first world problem of improving public performance, something industrialized countries have the luxury of doing because they had deployed the Weberian model much earlier and had solved many problems of efficiency. Are then NG, NPG and NPS applicable to current developing country problems? Is looking at them of any use to countries like Chile?

McCourt (2013) analyses the practices of developing country governments over the last 50 years, identifying six major problems and six reform families as attempted solutions. He takes a problem-solving approach, viewing the different reforms "as ways of dealing with the *problem situation* as different national governments have defined it" (ibid, p.1, italics added). He does so to seek an explanation for these models' disappointing performance [27] and emphasises how learning from failure can be the paradoxical foundation of future success. Therefore, he proposes in developing countries, "we should begin by specifying the problem we are trying to solve and only then move on to selecting an approach which will solve the problem, or at least help to solve it" (ibid, 20).

---

[27]   *For more analysis on public sector reforms in Latin American countries (including Chile) see Bresser-Pereira (2001), Ramirez (2001), Polidano (1999), Manning (2001), Manning, Shepherd, Blum & Laudares (2009), and Dussauge (2009).*

Table 5

PROBLEM	APPROACH	MAIN ACTION PERIOD
How can we put government on an orderly and efficient footing?	'Weberian' public administration and capacity building	Post-independence period in South Asia and Sub-Saharan Africa
How can we got government closer to the grassroots?	Decentralization	1970s to present
How can we make government more affordable?	Pay and employment reform	1980s and 1990s
How can we make government perform better and deliver on our key objectives?	New Public Management	1990s to present
How can we make government more honest?	Integrity and anti-corruption reforms	1990s to present
How can we make government more responsive to citizens	Bottom-up reforms	Late 1990s to present

Source: McCourt 2013, p. 2

McCourt (2013, p.2) aligns himself with those who prioritize context over 'best practice': successful reform models must be understood in terms of the environment in which they arose, their 'problem situation' "as particular policymakers have perceived it". This analytical approach is in tune with the adaptive approaches to change to be examined in Sections 5, 6 and 7.

4.3 *TAMING* CHANGE IN CHILE - NEW PUBLIC MANAGEMENT

Apparently little —if some at all— research has been produced on the impact of mechanistic models of public governance in Chile, which is understandable considering dominant models are usually less likely to be scrutinized. In particular, the impact of NPM-inspired reforms in Chile has been scarcely documented (Morales, 2009; Pliscoff, 2009). But one analysis is that of Pliscoff (2009), who studies NPM-style policies in Chile to understand their impact on public sector values among public employees[28].

The wave of public sector reforms which started in the developed world in the 80s reached the majority of the world by the late 90s, and Chile wasn't the exception. NPM reforms in Latin America, says Pliscoff, made their way mainly due to the 'Washington Consensus', and its pressures to change the role of the state in the economy.

---

28   For more on the effects of NPM inspired management reforms on Chile's public sector also see Pliscoff (2012) and Ramirez (2001, p.25).

According to Pliscoff, since 1990 Chile's modernization reforms have been mostly inspired by NPM, and have strongly impacted the country's public system. One key negative impact has come from the NPM idea of extrinsic motivation: rewards for 'good' performance, in consistency with the principal-agent theory (see Goodwin, 2014). An incident in 2005 illustrates the point: two postmen purposely made their letter bags disappear. Their motivation was to meet their delivery goals and get performance-based bonuses, no matter the needs of the letter recipients, the citizens.

Pliscoff notes NPM inspired reforms in Chile were conceived as a requirement for every public agency, and linked to budgetary processes through management control systems. Leaders viewed reforms as instruments to achieve the main goal of saving up for social policies: efficiency seen as the main outcome (end-point). 'Not by chance', says Pliscoff, the agency pushing these reforms forward has been the Budget Office (DIPRES), the agency in charge of overseeing the rational and efficient use of the entire public budget. DIPRES oversees managerial changes in all other public agencies, certifying the *Improvement Management Programs* (PMG by its acronym in Spanish). The clearest manifestation of NPM's rationale has been the decision to reward agencies' performance changes in management practices with monetary incentives. As a result, the emphasis becomes showing others the organization is modern, rather than pursuing actual positive change: "it is more important to show external entities the agency has accomplished performance commitments or the Improvement Management Programs, rather than having a true organizational learning process" (ibid, p.187). Form over function.

Pliscoff's analysis shows how prevalent in Chile's public governance the idea of efficiency and utility maximizing behaviour is. The yardstick for better performance is money because self interest is seen as the main driver for decision-makers. A top-down, command and control 'central brain' is the vertical mechanism for compliance, and for directing what's legitimate. How far are we from defining our own 'problem-situation, or from a NG or 'relational state' model? Very far, it seems[29]. Now, should Chile's public sector ask itself *how to implement a NPG*, *relational state*, or *whole-of-government* model or should it instead start by opening up 'the space of the problem', identifying the problem situation (instead of picking up best practices or reform models as solutions)?

---

29   For an example of how NPM principles are deep seated in Chile, see http://www.elmostrador.cl/noticias/opinion/2015/06/01/los-reguladores-la-modernizacion-pendiente/

5. The how — to deal with complexity and uncertainty in change

5.1 *PUBLIC INNOVATION* AS AN EMERGENT RESPONSE

Over the last few years some public administrations around the world, mostly in high income countries, have been trying to respond to complexity in new ways by pursuing a *public innovation* agenda[30] (some would say *public sector innovation*). In Europe the main trigger is said to be a welfare state unable to "narrow inequalities of income or health or to strengthen social solidarity" (Boyle & Harris, 2009, p. 5).

This *public innovation* agenda, which is said to be giving way to an emerging public administration paradigm, does not present an agreed set of principles or definitions on, for example, what its normative stances are. But this lack of consensus or synthesis (see Bourgon 2015) should not deter anyone from paying close attention to this response. Importantly, this agenda is having an influence on several low and medium-income countries, evidence of which is the recent launching of public sector innovation laboratories in countries like Chile, Mexico, Colombia and Kuala Lumpur[31].

Key to this response seems to be the attempt to trigger co-production: involving citizens and the third sector in the provision and governance of social services. Such attempts, says Bason (2010), relate to a continued legitimacy crisis of the public sector and the market as providers of services. However, whether co-production ought to occur only during the provision/monitoring of services or also during the initial design phases is one essential question with no agreed answer (nor it seems discussed enough). It is clear, however, that research on co-production have become increasingly intertwined with public management research.

Jocelyn Bourgon leads the New Synthesis Initiative, which is trying to develop a unifying frame of reference for modern public administration by bringing together decision-makers and scholars across countries and disciplines.

---

30   *See OCED public sector innovation observatory.*

31   *See the OECD Conference Innovating in the Public Sector 2014 and the document called i-teams (Puttick, Baeck & Colligan, 2014).*

Bourgon (2015) stresses 'public sector innovation' (or 'innovation in the public sector') and 'public innovation' are not the same. The first has received much attention[32], but the focus is introspective, on the modernization of services, in particular through modern information and communication technologies (ICTs). But "worthy as they are, these innovations are unlikely to keep pace with the increasing complexity of our changing society", we need *something more*, says Bourgon (ibid, p. 3). Complex problems won't go away without changing the very ideas and practices that gave rise to our problems in the first place (ibid).

For Bourgon (2015) the public sector innovation conversation focuses on barriers to innovation: the sector being inherently difficult, the culture being risk-adverse, and so on. Hence leadership is presented as essential, leaders must remove the barriers. How so? By creating special units like laboratories, by using ICTs to improve service delivery, by rewarding innovative practices through incentives, awards and recognition (see A2; A4-T1). This has lead to a shift in the conversation: if the government is not up to the task, citizens should rely on their own 'social innovation' to solve problems. Social innovations are essential, she says, but should not be expected to replace the state[33] or produce the collective public goods we need without some state intervention. Attention should be on making radical changes to how the state tackles problems.

The difficulty then lies in the *how* to improve the states' capabilities to achieve the desired outcomes, says Bourgon. Addressing complex policy challenges is a matter of continual facilitation rather than of finding magic solutions. How to build such capabilities? Bourgon proposes three main principles: think citizen (through co-production), think purpose, think creative experimentation and think system dynamics.

Is co-production the core part of this emergent response?

The idea of co-production, around for decades, has in the past 10 years experienced a revival in both research and practice, building upon the work by early scholars like Ostrom (Verschuere, Brandsen & Pestoff, 2012). The most common type of co-production practice has nonetheless involved citizens as *co-implementers*, much less so as *co-designers* or *co-initiators* (Voorberg, Bekkers & Tummers, 2013). Co-design and co-initiation

---

32   *See for example European Commission (2013).*

33   *David Cameron incorporated social innovation in his view of the 'Big Society', in which he embraces the idea of social entrepreneurship and social innovation as an alternative to traditional governance (Voorberg, Bekkers, & Tummers, 2013, p. 3).*

imply involvement at the early stages of problem definition and solution identification/ testing. The so-called 'magic concepts' of social innovation and co-production have been embraced as new reform strategies and assumed to fundamentally change the 'playing rules' between stakeholders, breaking through 'path dependencies' (ibid, p.3). But is *co-implementation* enough for changing the game? Is co-production a game changer if and only if linked to fundamentally redressing power imbalances between citizens and the usual decision makers (see Durose, Justice, & Skelcher, 2013)? Would co-production at the *early stage of problem-definition* allow such fundamental changes in the rules? Sørensen and Waldorf (2014) think so.

They remind us that in traditional models strong visionary leaders are viewed as the main source of policy innovation (idea further enforced by NPM). But, as seen, top-down governance usually fails to execute and produce the desired outcomes, because decision makers rarely acknowledge the full complexity of the problems, the limitations of existing policies and the potential of new and emerging ideas. "Seen from a policy innovation perspective policy execution problems also derive from a failure to critically scrutinize existing problem definitions and available policy options and look for new ones in the face of policy failure" (ibid., p. 3). Sørensen and Waldorf therefore suggest policy delivery problems should be overcome through mobilizing knowledge, ideas and entrepreneurship of public employees and other stakeholders, "not only in the implementation phase but also when new policies are being developed and tested" (ibid). This focus on the problem space, on *how* and *by whom* problems are defined and policy is decided might be the 'more' Bourgon talks about. And this is where a new public administration paradigm that puts co-production at the centre could merge with complexity thinking and the learning aid actors have been drawing from it[34]. Collective learning and collective problem solving which co-production processes allow, could foster the capacity of the state to catalyse self-organization, learning and adaptation (more on this in the next section).

Is co-production the same as citizen engagement?

The intention is not to answer such question here but to stress the need to be cautious when considering both concepts. If co-production is thought of as a permanent and essential process to create public value, anchored in a different paradigm of public governance, then it might be advisable to distinguish between them. With 'citizen engagement' most

---

34   *This could also help with the concerns presented by Howlett et al. (2015, p.23) around co-production.*

people would think of a government or development agency asking people to participate of 'something' already defined: a problem, an initiative, a program (someone said to participate of a party doesn't usually organize that party). A divide can still be seen between those who 'know/lead' and those called to contribute only after those who 'know' decide what the problem is and what needs to be asked/done/implemented. Instead, co-production as co-initiation or co-creation seems to imply a constitutive involvement of diverse non-authority actors with a stake in the problem.

But what about co-production in developing countries such as Chile, with no welfare state systems and —many would say— even bigger problems in policy and implementation? The recent creation of the Public Sector Laboratory in Chile (LabGob) shows the influence of the *innovation in the public sector* agenda mentioned earlier. The LabGob's website shows a very similar narrative to the one presented by European laboratories such as the Danish MindLab: "LabGob's mandate is to create a *new relationship* between the government and the citizen, through the development, facilitation and promotion of people-centred innovation processes in public services". These efforts won't build entirely from scratch as other agencies have promoted innovation within public services since 1999 (see Ramirez, 2001). The novelty is the emphasis on a new relationship and on *people-centred processes*.

What is not seen here, however, is a call to link these efforts to wider governance or public management reforms. These efforts (and those of the *modernization* agenda[35]) seem focused on *innovation in the public sector*, in improving practices and delivery functions. LabGob is now, for example, opening up Innovation Awards to citizens without mentioning co-production; citizens' involvement happens after the definition of the problem has been made[36]. LabGob has explicitly referred to this process as *citizen engagement*[37].

---

35   See http://www.modernizacion.gob.cl/

36   "'Impacta salud' is the LabGob's public innovation contest program. Through this program
        we want to attract and incentivize talents outside the state, and invite them to get involved
        in complex public challenges, bringing new ideas, technologies, products and services.
        The government laboratory, through its projects and research teams, will be in charge
        of identifying public challenges and define the specific objectives and reach as a starting
        point for these new ideas" (Source: http://lab.gob.cl/impacta/).

37   See an interview with LabGob's Executive Director http://www.innovacion.cl/entrevista/
        conozca-los-desafios-y-metas-del-laboratorio-de-gobierno/

Citizen engagement is a rather ill-defined term in Chile and elsewhere[38]. Decades of experience in promoting citizen engagement or participatory tools into the work of public and development agencies shows they have fit poorly —to say the least— with dominant models of implementation. They have "overwhelmingly tended to be employed in an instrumental manner, as tools to help achieve one's own objectives" (Jones 2011, p. 11). Even more, they are sometimes 'derisory': "trust and compliance are ascertained simply to build a perceived institutional legitimacy, which in turn it is hoped will engineer compliance with agency-driven decisions, objectives and goals" (ibid). The problem is that these common practices undermine trust, which is essential for participation. Social capital and collaborative institutions can't emerge when engagement processes are used to furthering one actor's own goals, aiming to build trust just for this reason, not considering the knowledge or priorities of others (ibid).

There is ample literature on the effects of different types of citizen engagement processes in developing countries (see for example Gaventa & Barrett, 2010). And recently there's been increasing attention to the idea that game-changing engagement happens when citizens are involved in early stages of the programming or policymaking process, when the problem hasn't yet been defined (as noted by Sørensen and Waldorf). Involving citizens from the early stages aligns with focusing on strategy and systems instead of mainly focusing on *participation tactics* (Leighninger, 2014). Strategic approaches to citizen engagement "combine information access with enabling environments for collective action that can scale up and coordinate with government reforms that encourage actual public sector responsiveness to voice" (Fox, 2015, p. 350). Gaventa and McGee (2011, p. 23) also emphasize this need for early involvement: many engagement initiatives "focus on achieving 'downstream' accountability —the efficient delivery of policies and priorities— bypassing the question of how incorporating citizen voice and participation at early stages of these processes could have shaped the policies, priorities and budgets 'upstream'."

Therefore, in need of further research and discussion is whether and to what extent public sector innovation efforts —in Chile and other developing countries— allow for the emergence of deep change processes. Are these efforts accounting for complexity? Are they drawing from local knowledge and local networks or furthering collective action?

---

38   *For information on the model of citizen engagement in Chile's public sector visit http://www.gobiernoabierto.cl/consejo-de-la-sociedad-civil And for a critical view of this model see this e-news article (in Spanish) http://www.theclinic.cl/2015/06/03/el-despelote-de-los-consejos-de-la-sociedad-civil/*

Or are they mainly following 'best practices' emphasising form over function, mimicking efforts undertaken in other countries without acknowledging context and the role of local networks (and issues of power and politics)?

5.2 *ADAPTATION* AS AN EMERGENT RESPONSE

When confronting a simple or complicated problem, asking *what is the best solution?* can lead to good results (the cake, the rocket). But in the face of diverging interests, incentives, and power imbalances, asking those questions likely lead nowhere. Adaptive policymaking and programming challenge the emphasis on 'best practices' based on the idea of a fixed 'end point'.

Adaptive development calls for policies that allow experimentation, adaptability, resilience, collective learning and collective problem-solving. Instead of controlling change processes from a central command brain, more sustainable is to foster the capacity of individuals and groups to self-organize, learn and adapt (Barder & Ramalingam, 2012; Root *et al.* 2015). What is needed is to successfully navigate situations characterized by emergence, multi-causality and ambiguity (Ho, 2012). The long-term goal is then to create governance systems able to organize complex social tasks and ensure more inclusive outcomes (Root *et al.* 2015).

Among those building/supporting this response, there is broad agreement on the principles of such approach to development. In its Manifesto, the *Doing Development Differently* (DDD)[39] network, posits that successful change processes reflect the following common principles:

- "They focus on solving local problems that are **debated, defined and refined** by local people in an ongoing process.

- They are **legitimized at all levels** (political, managerial and social), building ownership and momentum throughout the process to be 'locally owned' in reality (not just on paper).

- They work through **local conveners** who mobilize all those with a stake in progress (in both formal and informal coalitions and teams) to tackle common problems and introduce relevant change.

- They **blend design and implementation** through rapid cycles of planning, action, reflection and revision (drawing on local knowledge, feedback and energy) to foster learning from both success and failure.

- They manage risks by making '**small bets**': pursuing activities with promise and dropping others." XX (Manifesto DDD).

What these principles basically say is that "development works when the focus is on processes of change and empowerment, context-sensitive interventions,problem-solving and iteration, (re)design and adaptation as part of implementation, brokerage of reform coalitions, and facilitation of collective action" (Yanguas, 2014).

The 'problem-driven iterative adaptation' (PDIA) approach, which will be reviewed in the next section, highlights the importance of experimentation, positive deviance[40], active learning mechanisms[41] and iterative feedback loops. PDIA aims to propose implementable alternatives, to the same concerns others have voiced in the past.

ODI has documented recent examples of change that is locally led[42], politically smart and adaptive, like in Philippines where an adaptive approach enabled 'development entrepreneurs' to broker important reforms (Root, Jones, & Wild, 2015), (see Booth & Faustino, 2014). The approach used is called 'Development Entrepreneurship' ('DE') and may actually be seen as an "operational method that articulates some of the practical implications of PDIA as an approach to development" (Booth & Faustino, 2014, p.32).

---

40   *The term 'positive deviance' comes from research on nutrition in poor communities in Vietnam, where some children, despite the hardship, were found to be quite healthy. Researchers found their parents were constantly defying community norms about the assumed proper way to raise and feed their children (Andrews et al. 2012). The concept is therefore defined as an approach to behavioural and social change based on the observation that in any community, there are people whose uncommon but sucessful bahaviour or strategies enable them to find better solutions to a problem shared with their peers, despite facing similar challenges, and having no extra resources or knowledge (source Wikipedia: http://en.wikipedia.org/wiki/Positive_deviance)*

41   *For more on evaluation and learning mechanisms see Pritchett et al. (2012).*

42   *For more on what locally-led means, see Local First in Practice: unlocking the power to get things done (Pinnington, 2014).*

DE's 'entrepreneurial logic' involves making series of *small bets* instead of opting for large all-or-nothing opportunities. Decisions at each stage rest on "*educated guesses*, drawing on an equal combination of science, the results gained with small bets and imagination". This requires embracing "error as a vital part of learning" and building the "willingness and ability to adjust to new information in a dynamic environment" (ibid, p. xiii).

Underlying these approaches is the idea that individuals and groups constantly learn. Therefore, adaptive strategies need to evolve in response to new inputs, "to prepare for the multiplicity of possible futures, and to allow for strategies to change over time" (Root *et al.*, 2015). This idea of exploring multiple possible futures is essential. Adaptive and iterative planning uses scenarios to explore the future and facilitate the exchange of knowledge about uncertainty among decision-makers: "once the widest range of possible contingency is specified, appropriate policies can be specified against each scenario, and potential pathways selected" (ibid. p, 11). More of this will be seen in Section 6, when looking at 'strategic foresight' and human-centred design.

These adaptive approaches deal with uncertainty by fostering innovation and variation (Swanson & Bhadwal, 2009) through merging design and implementation in rapid cycles, monitoring and learning throughout the process (tracking how things alter, but not just at the end), retaining flexibility and recognizing emerging situations (like windows of opportunity). This also involves "knowing when to fold the cards on an obsolete policy", resisting our tendency to follow "what we have implemented to the bitter end (…)" (Fuerth, 2011, p. 34).

This adaptive response emphasizes the how of and setting for problem-solving. The economist Dani Rodrik (2004, p. 3), while referring to industrial policy, pointed out in similar directions: "(…) the analysis of industrial policy needs to focus not on the policy outcomes—which are inherently unknowable ex ante—but on getting the policy process right. We need to worry about how we design a setting in which private and public actors come together to solve problems (…) and not about whether the right tool for industrial policy is, say, directed credit (…)". Getting the policy process 'right' echoes Ackoff's: *it is better to do the right thing wrong than the wrong thing right*.

How to do/move towards adaptive development? Key elements to consider:

- **Appropriate planning**[43]: Initial plans should not be very detailed, but framed to promote ongoing learning. Interventions should be based around explicit and testable theories and assumptions about how change will happen, which are continuously revised in response to new information and changing conditions (Root *et al.* 2015) (also see Booth & Faustino 2014, p. xiii).

- **Multiple intervention points**: It may be better to work across various entry points (or multiple parallel experiments) rather than picking one single preferred option in advance. An intervention may work better as a collection of smaller projects, underneath a broad set of goals (the strategy of 'small bets') (ibid).

- **Monitoring and learning**: Under uncertainty, changes have to be detected in real time. That means developing 'acute antennae' to identify signals of change (Green, 2015). Ongoing monitoring and evaluation[44] allows understanding the intended and unintended effects of an intervention, and learn what is working. The idea is to get fast feedback into initial plans and hypotheses to fail faster, learn and adapt. How quickly failure is detected and addressed, is central to making change happen (ibid). In line, Pritchett *et al.* (2012, p.2) call for 'structured experiential learning' to help implementers articulate the 'design space' of alternatives and then dynamically 'crawl the design space' by simultaneously trying out and adapting based on results.

- **Flexibility**: It is crucial for decision makers to have the option to continue or eliminate different aspects of an intervention depending on feedback and prospects of progress (Root *et al.* 2015).

- **Convening and brokering**: Good results are more likely to be achieved by bringing together relevant stakeholders to break agreement in an open-ended process of adaptation (Green, 2015).

---

43 *For details on how to plan and do strategy in the face of complexity see Hummelbrunner and Jones (2013).*

44 *For more on evaluation see Woolcock (2009) and (2013).*

- **Leverage and strengthening linkages**: It refers to promoting relationships between key actors and networks, improving channels for negotiating action or building common products or spaces for interaction (Hess & Ostrom (2005) in Root *et al*. 2015).

But if successful interventions ought to be context-sensitive, how can development actors expect to 'scale-up' any of them? There is no space here to see this in detail, but for more on 'external validity' of complex development interventions, for the "*whether, when* and *how* to replicate and/or scale up (or cancel) interventions", see Woolcock (2013), Pritchett *et al*. (2012), and Quaggiotto & Begovic (2014). (Also see Annex 1.)

Adaptive development at the World Bank?

The 2015 World Bank flagship World Development Report (WDR) *Mind Society and Behaviour* aligns in some key ways with the adaptive principles examined here. The report's central idea is that "paying attention to how humans think (the processes of mind) and how history and context shape thinking (the influence of society) can improve the design and implementation of development policies and interventions that target human choice and action (behaviour)" (WB, 2015, p.2). It draws from multiple disciplines, especially behavioural sciences[45], to explain how individuals (including development professionals), make decisions; they rely on automatic thinking and suffer from biases. Four specific challenges are: 1) people tend to deal with complexity through uniformity and simplification; 2) development professionals bring a whole set of 'priors' that supports previously held beliefs, failing to consider alternatives (confirmation bias); 3) development professionals are more likely to continue a project or approach once an initial investment of resources has been made, for fear of appearing wasteful (sunk cost bias); 4) gaps in understanding can be tackled by development actors witnessing first-hand the lives, experiences and mindsets of those they seek to help (Ramalingam, 2014).

To navigate these challenges the report proposes an adaptive approach, which basically entails organizations changing their incentive structures, budget processes, and institutional culture to promote better definition and diagnosis of problems and follow an experimental approach that tolerates failure so that evidence can feed back into midcourse adaptations and future intervention designs (WB, 2015, pp. 192-193). The implementation cycle tests several interventions, each based on different assumptions.

---

45   For more on the challenges behavioural sciences have been recently posing to the traditional assumption of rationality in humans see Goodwin (2014).

One intervention is adapted and fed into a new round of definition, diagnosis, design, implementation, and testing. This process of refinement continues after the intervention is scaled up (ibid), and it looks like this:
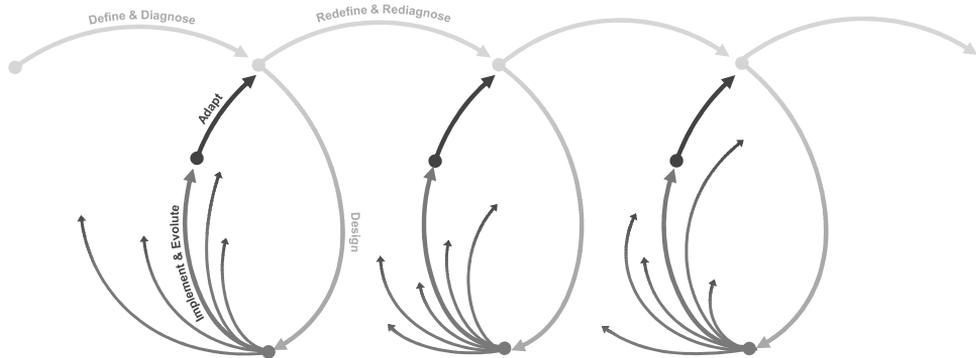
What is new with this WDR?

Algoso (2015) notes the WDR's focus is on behavioural economics, an approach which — just like human centred design— has become increasingly popular "for recognizing the role of human choices at the crux of many development problems". Behavioural economics has a tendency to universalize (dangerous as it has been seen), while design "has an incredible sensitivity to specific needs in a given use-case" (with the risk being *zooming in too-close*). The report's recommendations for adaptive design and implementation are too simplistic, argues Algoso: for dealing with the complexity of human motivations, the report suggests more social and political analysis *upfront*; to combat confirmation bias, use double-blind peer review; to understand the importance of context, engage in service trials. While this is a move in the right direction, is not enough: "at their core, these proposals revolve around improving the knowledge of the interveners". It starts from the perspective that development interventions are done by experts to beneficiaries. "It focuses on extracting knowledge from the end-users so that knowledge can improve decisions made by others. Why not bring those end-users into the decision-making process?" Participatory methods and co-creation "can provide a useful counterbalance to the purely technical knowledge of experts" (and their biases), yet none of these are discussed in this WDR.

Green (2014) is wary about the report for similar reasons: "The report pulls together a pretty seismic challenge to business/economics-as-usual". The principles it posits (thinking automatically, socially, and with mental models) "highlight the importance of targeting social norms and add one very large nail to the coffin of rational expectations/ homo economicus". However, the report has a flavour of 'benign paternalism', governments getting better at manipulating people's choices for their own good: "For all its talk of human fallibility, the underlying assumption is still that 'we' know best […] In the overall purpose of 'helping people make better decisions', there is no suggestion that someone other than technocrats should be defining what constitutes 'better'. That seems to lead to a focus on tweaks rather than transformation […] what if the behaviour-shapers are not benign?" The WDR seems to imply "take a development issue that is dripping with power, politics and struggle, then technocratize it into a set of best practice guidelines for tweaks-not-transformation in an often-imaginary world of benign decision makers." And that's 'not good enough', stresses Green.

What about adaptation in strategy making?

The strategies development actors are used to tend to assume predictability and certainty, presenting 'best practices' which "biases strategies in favour of a 'one-size fits all' strategic guidance" (IADB, 2009, p.15). They often provide general principles but little specific guidance. They use a 'certainty' tone: 'do this to solve things', instead of recognizing that "much is unknown about how to address a problem in the current context (…) Strategy documents tend to presume that learning on a subject has already taken place, rather than that operations are themselves an opportunity for learning" (ibid). Therefore, strategies rarely break new ground, or push beyond the boundaries of the prevailing conventional wisdom. Instead, they usually intend to articulate an existing consensus with regard to best practice in a given area (Ramalingam, 2013).

Mulgan (2008) agrees. When much is unknown and the knowledge needed to tackle complex issues is widely distributed governments need to *cultivate humility*, and when power is widely distributed governments need to be collaborators. Under uncertainty, strategy-makers need to think hard about the degree of power and knowledge they have in responding to threats and opportunities. They may be forced to act decisively, but if facing uncertainty, they need to be quick to adjust to context, because many of their mistakes "come from overestimating the extent of their power and knowledge" (ibid, p. 10). And this is crucial: adaptive principles' foci on learning and experimentation help place knowledge at the heart of public policy and strategy-making (see Jones 2011).

Lasting improvements come from innovation and adaptation of new knowledge: "what differentiates good strategists is not that they never make mistakes, but that they learn quickly from their mistakes, and that they learn deeply when the world responds in surprising ways" (Mulgan 2008, p. 5).

Complexity thinking has told us the future, affected by many interacting factors, may not just be a little different from the past, but markedly different (B2-T1), why often well conceived strategies fail to achieve their plan (Boulton, 2012). Thus, complexity thinking positions strategy making as more provisional, which in turns encourages experimentation; it gives centrality to foresight and scenario planning. It emphasizes the importance of 'managing by walking about': being sensitive to context, ready to nurture unexpected success (ibid), and react to windows of opportunities. Strategy-making and strategy implementation become much more closely entangled, and must facilitate what works by experimenting and learning rather than to impose the 'what' and 'how' (ibid).

Box 1

Complexity economics + adaptive development?

Changing the way decision makers 'do' policymaking and implementation is directly relevant to challenges at the top of the development-policy agenda, including enabling transformative economic growth (Booth in Jones, 2011)*. How are emergent responses of *adaptive development* related to economic development? How is recent work on networks and economic complexity related to adaptive governance?

Hidalgo and Hausmann (The Atlas of Economic Complexity, 2014) posit that the ability to produce unique goods and services depends on the amount of 'productive knowledge' in an economy: prosperous societies have the knowledge to make a larger variety of more complex products. Improvements in economic growth are achieved by harnessing existing capabilities in new combinations or by growing new capabilities to expand the productive potential. If the purpose is to drive the capacity to be more resilient and sustainable, decision makers shouldn't seek to reduce complexity but catalyse it, creating more networks o connecting multiple

---

*   *For more on the use of complex systems tools in the context of wealth creation see Ramalingam et al. (2014, p.44).*

domains (Ho, 2015). Hidalgo and Hausmann's work has shown that doing such a thing, advancing productive knowledge, requires structural changes, changes in the patterns of interactions inside society.

Hidalgo and Hausmann's main purpose has been to inspire a new kind of conversation, to stop building economic analysis on the over-simplification of a complex system, instead seeing economic development as a social learning process, one that involves trial and error (Ramalingam, 2011). But how to join both talks/doings, the one on adaptive policy/program/strategy-making and co-production and the one on economic complexity? (See Hartmann, 2012 for clues on this).

In a similar line, the latest IDB's report on productive development (2015) poses countries can build new institutional capabilities through learning by doing within a context that promotes experimentation, evaluation and policy adaptation: "It is the process of identifying problems and learning how best to address them through iteration and adaptation, that countries and agencies can expand their capabilities for policy design and implementation" (ibid, p. 34).

6. *Details of (some) adaptive and iterative approaches and methods*

This section will explore in a bit more detail three adaptive and iterative approaches to strategy, policy, programming and implementation. The first, PDIA, was already mentioned. The second, human-centred design (HCD), places a big emphasis on the human experience, seen as the essential context component. It is the lived experience of people what ultimately frames the problem space: how the problem can be defined and what solutions should be tested. HCD *zooms-in* in the agent, seen as resourceful and active, hence the need to involve them in the process of problem definition and solutions creation. Like PDIA, it proposes the merging of design and implementation in rapid cycles of iteration and learning. HCD is not a set of guidelines; it draws from multiple techniques and methods depending on the issue at hand. The third approach, strategic foresight, shares with PDIA and HCD openness to multiple futures, not to end-points or point directions, as well as a focus on improving the capabilities for 'rehearsing futures' through ongoing learning and flexibility. Strategic foresight aims to 'strategize' *how to navigate* complex problems in the face of uncertainty. Governments, however, have mostly used strategic foresight techniques to craft scenarios of the possible and plausible opportunities and threats, which has proven insufficient in complex environments. Some countries and organizations are therefore exploring less positivistic techniques and methods which could also allow the building of desirable futures, by crowding-in the knowledge and collaboration of unusual suspects.

6.1 PROBLEM-DRIVEN-ITERATIVE-ADAPTATION (PDIA) - TO BUILD THE *KNACK*?

Recent work by Matt Andrews, Lant Pritchett, and Michael Woolcock, 'Escaping Capability Traps through Problem-Driven Iterative Adaptation (PDIA)' (2012), proposes incorporating an adaptive approach more systematically into development/public interventions. To avoid defining problems as the absence of a solution, decision makers should instead pursue a concerted process of problem identification[46]. In fact, the most basic step is to identify the problem correctly, one that is both an *agreed-upon binding constraint* to reaching certain goals and a *manageable challenge* that allows for initial progress. The

---

46   *For more on problem-solving approaches see McCourt (2013) and Manning & Watkins, (2013).*

authors try to move towards concrete alternatives to reforming governments and building state capabilities. They attempt to provide a pragmatic synthesis of arguments articulated in recent years around the idea that systems should reinforce local experimentation[47].

Capability traps and isomorphic mimicry

The authors note how hard is to build capabilities in human systems; how extremely hard is, for instance, to get state actors to use the physical stuff (schools) to achieve the intended outcomes (learning). Policy reform is characterized by a dynamic of governments passing laws or new administrative processes, but then reforms not being implemented or effective. The problem, they add, is that reform dynamics are often characterized by 'isomorphic mimicry'[48]: introducing reforms to enhance an entity's support and legitimacy, without improving performance (this echoes Pliscoff critique). These strategies of isomorphic mimicry add to capability traps "in which state capability stagnates, or even deteriorates, over long periods of time even though governments remain engaged in developmental rhetoric and continue to receive [or invest] development resources" (Andrews *et al.* 2012, abstract). The fact there is so little progress everywhere "suggest the generic 'theory of change' on which development initiatives for building state capability are based is deeply flawed" (ibid, p.2)[49]. Essentially, they propose that efforts to build state capability should (ibid, p. 8 and abstract):

- *Aim to solve particular problems in particular local contexts via*

- *the creation of an 'authorizing environment' for decision-making that encourages experimentation and 'positive deviance', which gives rise to*

- *active, rapid, ongoing and experiential (and experimental) learning and the iterative feedback of lessons into new solutions (as opposed to enduring long lag times in learning from ex post "evaluation"), doing so by*

---

47 *To see what those related themes PDIA draws on and tries to synthesize see Andrews et al (2012, p.8).*

48 *This concept is used as an analogy to what some animal species do with their looks to improve their survival, like a non-poisonous frog that 'looks' poisonous to avoid being eaten.*

49 *For more on theories of change see Pritchett (2012).*

> • *engaging broad sets of agents to ensure that reforms are viable, legitimate and relevant, that is, are politically supportable and practically implementable (as opposed to a narrow set of external experts promoting the top-down diffusion of innovation).*

Reforms initiatives have often been drivers of capability traps in developing countries, the authors note, by creating and reinforcing processes through which central or global players constrain local experimentation (see Ellerman, 2004). This has characterized processes of development assistance since at least the 1980s, when governance reforms became a key dimension of development assistance. This has promoted the creation of various 'scripts' which define what reforms are acceptable/legitimate: facilitating private sector growth, managing public finance, etc. Such scripts have closed the space for novelty and innovation, imposing narrow agendas on public organizations which are evaluated in compliance with the scripts regardless of whether they allow success in a particular context. Front line workers, for example, those required to implement changes in the 'real world', are almost never part of the conversations about how to shape those reform agendas.

Instead, PDIA's principles, the authors suggest, are consistent with a wide range of implementation alternatives, sectors, modalities and country contexts[50]. In a nutshell, PDIA emphasises the power of bottom-up driven innovation in building capability as well as success (Pritchett *et al.* 2012).

Focus on problems

PDIA's focus on identifying problems helps redress the bias to prescribed 'best practice' "towards internal needs for functionality; it ensures that problems are locally defined, not externally determined, and puts the onus on performance, not compliance" (Andrews *et al.*, 2012, p. 9). Actually, successful institutional solutions are usually built through experimentation: small steps and 'positive deviance'. Small steps are relatively cheap to implement and can bring 'quick wins', essential in contexts where change faces opposition. Taking small —but fast and incremental— steps helps reveal contextual challenges, including those emerging during interventions. Facilitating positive deviance in complex contexts, where reformers are unsure of what are the problems and solutions, is called 'muddling through' (which echoes Boulton's 'managing by walking about').

50   Matt Andrews shares an exercise called from NPM (New Public Management) to PDIA reforms in his blog: http://matthewandrews.typepad.com/the_limits_of_institution/getting-things-done-at-harvard/

Experimentation and positive deviance should be connected to ongoing learning mechanisms, to ensure dynamic feedback on what works and why. Lessons must become part of the knowledge and capacities 'at hand' from which new arrangements emerge (much different from traditional monitoring and evaluation focused on compliance). "This requires seeing lessons learned about certain combinations as the key emerging result", as they inform future activities (ibid, p. 16).

In sum, PDIA is problem-centred and differs from a 'solution and leader-driven change' approach (Rao, 2014). PDIA emphasizes the role of reforms, "not as scaling up known solutions (...) but rather as instruments for 'experimenters' (...) or 'searchers' (...) to learn what works (...)" (Pritchett et al, 2012, p.2).

Although still early to assess their contribution to wider and long-term governance reforms, two recent projects have been designed explicitly around PDIA principles: the Australian Department of Foreign Affairs and Trade Pacific Leadership Program[51] and the Timor Leste Governance for Development Program (Rao, 2014).

PDIA makes room for processes of co-production as it emphasises the need for "concerted processes of problem identification" and for "engaging broad sets of agents to ensure reforms are *viable*, *legitimate and relevant*" (my emphasis). This echoes the idea (reviewed in page 16) that non-usual agents with a stake in change processes might actually have a primary influence on whether the change turns out relevant (see link to complexity ideas Table 1).

6.2 HUMAN-CENTRED DESIGN

A growing number of public and development organizations have been championing design approaches as revolutionary for development work. Public organisations in countries like Australia, New Zealand, France, Denmark, the UK, Canada, Singapore and the US have been, to various degrees and forms, using design approaches as a tool to drive change. The use of these approaches, with their focus on citizens' experiences, is one noteworthy characteristic of the emergent *public innovation* response to complexity. In fact, co-production processes have usually involved the use of design. Terms such as design thinking, service design, experience design, co-design and strategic design

---

51   *More details can be found in O'Keefe et al. (2014).*

—all which emphasise collaboration— are gaining prevalence among institutions aiming to redefine how public services (and to a lesser extent policies) are designed and implemented. Some international development agencies have also joined this trend; UNDP Innovation, UNHCR Innovation, UNICEF Innovation, and The Gates Foundation are some of them (see Annex 2).

Human-centred design (HCD) (also referred to as 'design thinking') can essentially be described as a problem-solving approach that does not start with abstraction but with a careful observation of lived reality or experience. It recognises the unpredictability of interventions and of people's behaviour. But why is the 'human' highlighted in here? Basically, HCD taps into capacities usually overlooked by more conventional problem-solving practices. It relies on people's ability to be intuitive, recognize patterns, and construct ideas with emotional meaning as well as functionality (Brown, 2009).

HCD practitioners immerse and open themselves up to the system "as-is". A handful of techniques are used to gain the required ability to look through other people's eyes, such as ethnographic methods, participatory processes and mapping. Unexpected solutions are enabled when, for example, a patient is seen as a person who has unique capabilities to maintain or enhance her quality of life (Vandenbroeck, 2012). HCD is fundamentally critical: every 'problem' is seen as containing positive deviants, "practices that contain the germs of novel solutions" (ibid, p. 33).

HCD requires reflective practitioners, engaged in a process of action learning, "forging connections between seemingly unrelated issues. (…) As such, design is increasingly seen as a way of thinking that is fundamentally different from the inductive reasoning of science and deductive schemata of logic" (ibid, p.18). Thinking and doing merge: designers haven't lost this ability to think with their hands (ibid.).

In 2013, the government of Nicaragua's Northern Atlantic Autonomous Region together with UNICEF used HCD to create regional children policies. Engaging constituents in the design process, at the early stages of identifying and prioritizing areas of need, increased the public officials' understanding of the factors shaping their constituents' experiences and provided nuance to the policy framework (UNICEF & Reboot, 2013). They used the following definition of HCD:

> *"Human-centred design combines rigorous inquiry and creative analysis to develop interventions suited to address complex challenges (...) it produces outputs drawn from an understanding of the cultures, economics, and environments that shape human experience. The process is iterative, with outputs tested and refined based on feedback from the people they will impact. This approach results in final interventions that are tailored to fit the capacities, constraints, and interests of the people they are meant to serve" (ibid, p.16).*

HCD requires actors let go of their pre-conceived assumptions or biases by 'suspending judgement', building 'professional empathy' (the ability explore how people experience what your organization does to them) (Bason, 2012) and embracing uncertainty. It involves creating new organisational readings related to what kind of impact the organisation, policy, strategy or scheme is having or not having (ibid).

HCD could be seen as an adaptive operational method which can merge with and add to adaptive approaches (such as PDIA) by helping foster a more nuanced understanding of the agents' experiences during interventions or during the problem definition.

If considering Sen's (1999) development approach, which posits freedom and agency as the means and end of development, then using HCD in policy making could help decision makers act upon not only the what or end of development, but also the how or means: which is the resourcefulness and agency of diverse agents, including the most marginal ones, the ones usually left out of the decision-space.

The limits of HCD

A recent example of the increasing use of design in development is the fact 'user-centred design' was set as the first principle of the *Principles for Digital Development*, recently defined and agreed upon by many influential global development organizations. Worth noting is the use of 'user' instead of 'human' or 'citizen' (see for example how 'user' is used by the Policy Lab in the UK). This may be relevant, if co-production processes require seeing the other not as a passive user but as an equally resourceful and influential agent.

What we are seeing, says Lee (2015) are commercial design firms increasingly winning development contracts, and development practitioners being increasingly disappointed with the results. There is a backlash on the way, she says, and for good reason: people using the design principles of 'suspending judgement' as an excuse for ignorance of the political and historical context, or designers championing creativity as compensation for their lack of experience in developing countries. Design approaches can help

revolutionalize development work, says Lee, but only if applied correctly. The limitations of design must be well understood, and it must be adapted from its original commercial uses. The myopic focus on 'the user' is inappropriate. Development work requires *interventions*, the involvement of all sorts of actors. Operating contexts are important in design approaches, but design essentially helps to *zoom in* on the agent. That is a limit, and that is why it's more powerful in combination with other approaches "that zoom out to understand broader systems, trends, and power dynamics" (ibid).

The potential of HCD comes from the tools and rigour it brings, which can help translate theory into action. HCD is much in line with the participatory/bottom-up/community-led development movements that began in the 1970s (see Chambers, 2011), and much in line with PDIA. The critical thought underpinning these movements/approaches is strong, says Lee, but they have struggled to articulate how practitioners can operationalise them. Design can help work across this gap.

Denmark's use of HCD

MindLab is Denmark's public laboratory since 2002. Its goal is to contribute to or facilitate processes of change that create better public service experiences, more effective delivery, savings in public budgets and better social outcomes. It aims to integrate 'innovation capabilities' in core operations of bureaucratic organizations, to experiment with, and transform, the very functioning of government, including procedural, administrative, political and democratic processes and practices. It uses qualitative, ethnographic and, anthropological methods, combined with design methods like rapid prototyping and testing (Christiansen & Sabroe, 2015). Its holistic view on public systems aims to illuminate the interactions and interconnections that are part of making services or policies work or fail. This understanding is applied in iterative learning where ideas are prototyped and tested, which often reframes purposes, goals and knowledge foundations (ibid).

According to Christiansen (2014), the agenda and movement of *public innovation*[52] represents multifaceted and dynamic processes of change, and is also an expression of a *cultural perception* of how to deal with complexity. Public innovation in Denmark has revolved around human-centred approaches (rather than around *Networked Governance*, networks or systems theory), where a better understanding of problems is qualitative and makes human experience the centre of attention. This human focus is seen

---

52   *For a summary of key literature concerning public innovation see Christiansen (2014, p.25).*

to drive change inside the state: services and systems are being reconsidered. Essential to this approach is the need to co-produce the understanding of what the problem is and its potential solutions, together *with* citizens. Co-production is understood as designing and organizing policy and services together *with* citizens rather than delivering services *to* them. "The secret sauce of co-production is that it equally values professional training and lived experience" (VanAntwerp, 2013). The main "ambition of government becomes not the delivery of services, but the achievement of outcomes that are informed by local insight, evidence and context" (Christiansen & Bunt, 2012, p. 8)[53].

Public innovation through human-centred processes changes the main premises of the development practice, says Christiansen (2014). It involves the invention of novel procedures but also of *new forms of thought*, by opening up experimentation and negotiating of what are legitimate knowledge practices and processes. For him, as public innovation is meant to explore new possibilities, it presents the knowledge informing development processes as necessarily fictional. However, what innovation lacks in concrete directions, it has it in providing possibilities of futures, through 'open-ended and explorative processes' (ibid). It could be said the 'scripts' mentioned by Andrews *et al.* (2012) are left unwanted.

To what extent this focus on lived experience allows for systemic change and collective action? Would this be enough to guide, for example, institutional reforms? What about issues of power dynamics and coalitions (the *zoom-out*)? This will be briefly explored in Section 7.

---

53   *For a case study of MindLab's operations see their recent work supporting an educational reform in Denmark by facilitating bottom-up change in Christiansen & Sabroe (2015).*

6.3 STRATEGIC FORESIGHT

Some basic terminology to begin with:

- *Foresight*: the ability to systematically consider and plan for the future in order to inform today's decision making; ability that can be developed by individuals, organisations, and society.

- *Strategic foresight:* a strategic long term planning capacity that sits comfortably with uncertainty.

- *Scenario planning*: a futures and strategic methodology.

Acknowledging that complex policy challenges do not fit only one particular policy area has led some governments to experiment with strategic foresight to cut across the traditional policy boundaries and silos in government departments (Habegger, 2010)[54]. Foresight techniques (e.g. scenario planning) promote resilience and agility in organizations, "so long as a broad range of perspectives are taken into account" (Jones, 2011, p. x).

Foresight is fundamentally not the same as vision or prediction. Visions exclude views about what should happen and are blind to alternative outcomes. Prediction is a point statement of what will happen (the 'end-point'). Foresight means openness to multiple futures, possibilities, not point predictions (Fuerth, 2011). Furthermore, foresight is not exclusively future oriented, but is used to influence what happens now (ibid).

Foresight then requires generating and collecting knowledge, formulating different versions of the future and developing strategic options for action. Importantly, for traditional organisations, this means a cultural shift towards creating a learning organisation (GCPSE, 2014)[55].

---

54 *Strategic foresight is well-established in many advanced economies like the UK, The Netherlands, Japan and Singapore, and in some BRICS nations is becoming common (Brazil, Russia, India, China and South Africa). Countries have applied quite different conceptions of foresight, mainly in terms of policy areas covered. Most still follow a narrow focus on science and technology, but some have begun to integrate societal, environmental and economic issues (Habegger, 2010, p. 50).*

55 *Recent studies have found evidence of strategic foresight enhancing the capacity for organizational learning (see Wilkinson & Kupers, 2013).*

Futures studies consist of balancing possible, plausible, probable and preferable futures, while strategic foresight is about strategising how to navigate them in the face of uncertainty (GCSPE, 2014; GCPSE, 2015). Where traditional planning aims to prevent failure, foresight favours building resilience, which forces organisations to consider flexibility in their plans, enhancing their adaptive capacity (Ho, 2012). Foresight can describe systemic change, and therefore as a tool for advising policy, help transmit complexity to policymakers (GCPSE, 2014).

Scenario planning, the most common foresight technique, has helped many organizations break the habit, ingrained in traditional planning, of assuming the *future will look much like the present* (Wilkinson & Kupers, 2013). It is a reflective (not a predictive) tool that allows incorporating multiple perspectives to help improve the understanding of the dynamics of change (Hummelbrunner & Jones 2013). That multiplicity is key as it moves away from a predictive stance that sees the future as a unidirectional extrapolation of past trends, "to an open and exploratory perspective that acknowledges uncertainty" (Philip van Notten quoted in Vandenbroeck, 2012, p. 30). In practice, scenarios resemble a set of stories built around carefully constructed plots (Mietzner & Reger, 2004, p. 48). But scenario planning is a rather linear method in the sense that it projects futures based on our understanding of the operating environment today. It can help overcome cognitive biases by challenging mental models, but it is insufficient in a complex environment (Ho, 2012). The usual emphasis on guessing what's next based on current trends presents the challenge of the future as a knowledge gap. To fill the gap, we usually extrapolate from the past and limit policy and planning to consideration of futures that are a continuation of historical tendencies. "However, we all know the dangers of driving forward whilst looking in the rear view mirror, especially in times when the need to look beyond the cone of possibilities offered in the past has never been more pressing" (Wilkinson, Mayer & Ringler, 2014, p.21). Other methods are needed too. And here is where design approaches matter to foresight.

As seen, 'rehearsing the future' is a fundamental part of adaptive methods and approaches like HCD and PDIA. Design approaches allow for rehearsing 'desirable futures', not only possible or plausible ones. Hence the recent efforts of foresight practitioners to merge design approaches with foresight.

Singapore's case

Singapore's pioneering strategic foresight efforts can be traced back 1979, when the then Minister for Foreign Affairs argued that futures thinking was integral to the country's prospects: *"[since] change is about the future then only a future-oriented society can cope with the problems of the 21st century"* (Kuah, 2013, p. 105). Since then, Singapore has designed integrated national strategies and expanded its use of foresight. But the country has recently sought more participatory forms of foresight, merging design and foresight (GCPSE, 2014).

Kuah (2013) explains why. He notes in many places strategic foresight has almost always begun as if it were prediction, with the purpose 'unveiling a pre-fabricated future' (also see Wilkinson, Mayer & Ringler, 2014)[56]. Singapore's pioneering attempts, he says, consisted mainly in applying techniques to 'see a thing' ahead of rivals or competitors, assuming that through applying rational analysis we can discover what's next based on today's strongest trends. For all the sophistication of foresight tools subsequently adopted strategic foresight remains largely informed by a positivist worldview (ibid, p.107). But the future is not only about risks and opportunities, but of "aspirations that are subjectively and dynamically articulated" (ibid, p. 107). Design approaches help with building 'desirable futures'.

In 2009, Singapore created the Centre for Strategic Futures (CSF) to challenge the orthodoxies and 'groupthink' within the foresight establishment. For Kuah, this was, above all, an acknowledgement that the future is a realm of freedom, power and will, a *land to be explored* (hence the utility of vigilance and anticipation) but also *a land to be built on*, therefore the utility of investigating not only possible futures but also "desirable futures" (ibid, p.108). And precisely to investigate desirable futures, CSF launched in 2012 "Our Singapore Conversation" (OSC), a nation-wide 'town hall meeting' which aimed to get citizens to articulate their 'desirable futures' for the country. Essentially, OSC was driven by the idea of 'co-production', of a partnership between those with power and citizens. Strategic foresight became a collective enterprise, away from "the elite-driven phenomenon it typically is" (ibid). The OSC was deliberately constructed with no pre-defined topics or areas for discussion. The power to set the agenda lay almost exclusively with the participants (ibid). They were *crowding-in* knowledge, ideas, citizenship.

---

56   *For an example of how prevailing this view is, see 'Las tendencias mundiales y el futuro de América Latina' (Bitar, 2014). This document emphasizes the need to predict, to pre-see scenarios, and do so through elite-driven processes.*

Foresight and design both set the stage for courageous conversations. Both attempt to go beyond the 'usual suspects' to gather widely distributed intelligence. Both can help engage a greater diversity of stakeholders for framing the problem through experience (rather than only data, which is many times missing or unreliable) as well as designing solutions through iteration and experimentation. With careful use, the combined approaches can help build capabilities to manage uncertainty and increase adaptability (Selin, Kimbell, Ramirez & Bhatti, 2015). Drawing collective intelligence and knowledge of diverse actors allows for co-production processes, as in fact, the widest possible and desirable set of outcomes relies on the diversity of stakeholders participating (GCPSE, 2014).

7.   *Operationalizing adaptation in strategy-making?*

The complexity-aware responses to the question of *how* to do development differently presented throughout this document —*adaptation* and *co-production*— imply radical changes to organizational practices, processes and most importantly, to mindsets. It is, therefore, not surprising that this can feel as a very daunting enterprise to everyone, to those keen on *tweaks* as well as to those keen on deep transformation. The purpose of this section is to revisit some of the main ideas seen in previous sections in order to, purely as an exercise, explore in broad terms two options of how a public strategy-making organization could start opening up a space for building authorizing environments for adaptive development. To do this, the ideas of collective action and co-production will be re-visited, and then the idea of prototypes (previously mentioned but not defined) will be presented.

7.1 COLLECTIVE ACTION, CO-PRODUCTION, AND PROTOTYPES (OR CROWDING-IN CITIZENSHIP)

Let us go back then to the concept of collective action and its relation to co-production. Section 3.2 showed that changes operate among diverse environments and in large interdependent networks, where people (or agents) constantly adapt putting pressure on others. And that to understand or influence change it is key to understand how networks operate and how collective action can be mobilized among networks. But to build such understanding and to inform policy or strategy by local insight, evidence and context (like MindLab intends) would entail changing our dominant views of collective action.

Our current theory of collective action assumes individuals are 'helplessly trapped in social dilemmas', which has led to policy analyses that presume external authorities should solve collective action problems (Ostrom, 2000). This presumed "universal need for externally implemented incentives is based on a single model of rational behaviour" (ibid, p.3). What we need, says Ostrom, is a broader theory of collective action and human behaviour that considers the large diversity of individuals and contexts. At the end this relates to the "delicate problem of designing institutions that enhance citizenship rather than crowding it out" (ibid, p.6). This different thinking requires dropping the passive term 'clients'. Instead, coproduction "implies citizens can play an active role in producing public goods and services of consequence to them" (Ostrom, 1996, p. 1073).

The two implicit messages of the dominant public policy analysis are inefficient, ineffective and dangerous for the long term sustainability of democracy. The first undermines *"the normative foundations of a free society", by saying "it is okay to be narrowly self interested and to wait for positive and or negative inducements to action. The second undermines the positive foundations of a free society by destroying the capacity of citizens to experiment with diverse ways of coping with multiple problems and to learn from this experimentation over time. The message says there is one best way of solving all collective action problems and it is knowable by experts. Citizens are viewed as having little to contribute to the design of public policies. -Thus, much of the contemporary policy analysis and the policies adopted in many modern democracies, crowd out citizenship. They do this by crowding out norms and trust and reciprocity and by crowding out the knowledge of local circumstances and experimentation needed to design effective institutions. Crowding out citizenship is a waste of human and material resources and challenges the sustainability of democratic institutions over time"* (Ostrom, 2000, p.13)

Citizens can —and should— contribute to the design of policies and to the building of collective action to solve problems. Following Ostrom, co-production processes seem necessary to allow governments and societies to adapt. Co-production could also help understand how interdependencies affect the choices of agents and how their relative opportunities and capabilities arise (see section 3.2 and B3-T1).

7.2 PROTOTYPES

Difference between 'pilots' and 'prototypes'

Pilots are a way of testing solutions: a new model gets specified in detail and then tested in 'the field' measuring baselines and results, and using methods of evaluation. Piloting has been typical in medicine for a long time, and has been increasingly used in public policy. But it is not always the best way to support change processes as "it might freeze the model too soon, when it should be evolving; it is usually slow and certainly slower than political cycles" (Mulgan, 2008, p. 165).

Pilots are usually seen in public governance as publically potent and politically convenient: they signal short-term action without committing to long-term resourcing. Whereas pilots express 'this is what we are betting for', prototypes test practice to build policy

(Schulman, 2010). Prototypes allow for extensive experimentation and adaptation that can increase the chances of long term success (Mulgan, 2014). Pilots and prototypes have different intents, unfold in different sequences and require different skills and resources.

For Schulmann (2010), prototypes are —unlike pilots— a process for coming up with tentative solutions. Prototypes can harness the unforeseen because they don't unfold in a linear way. They serve rapid cycles of testing, feedback loops and learning. Prototyping merges the inductive and deductive elements, trying out all the experiential and interactional parts, adding "a fluid dimension to the exploration of complexity, allowing for nonlinear thought when tackling nonlinear problems" (Kolko, 2015, p. 3). Fast prototyping quickly puts new ideas into practice to assess them equally quickly and adapt them in the light of experience (Mulgan 2014).

Prototypes explore the solution space. Brown (2009, p.87) refers to prototyping as 'thinking with our hands', an ability he had perfected by the age of ten, based on years of intensive study using LEGO: "I was thinking with my hands, using physical props as a springboard for my imagination". Shift from physical to abstract and back again which is one of the most fundamental processes to explore new possibilities (ibid). But not all prototypes are actual artefacts, like a LEGO robot. A process or an interaction could be prototyped. Prototypes *test change* through sketches, simulations, paper models, visualisations, beta testing, on-the-ground positive deviance experimentation, and so on. They can be incredibly effective in codifying tacit knowledge.

Prototypes serve co-production

For Kera (2014), prototyping embodies Jasanoff's idea of 'technologies of humility': the idea of value-free science delivering truths is being replaced by awareness that science serves political ends, and is constrained by the limits of human capability. Caution then calls for 'technologies of humility' (ibid, p.14)[57]. Prototyping allows us this caution by iterating and testing/acting science or knowledge, assuming it as context-based and provisional.

---

[57]   *For an example of how 'less convincing' sciences have become, see this article from Scidev, which links this issue to 'failings' in global governance: http://www.scidev.net/global/ policy/editorials/engage-science-development-*

Collaborative prototyping, as that for example built in the so called hackerspaces and DIYbio Labs[58], offers a convergence between knowledge and action but also, and importantly, between lay and expert, helping build more resilient and democratic models of decision-making (Kera, 2014), Ostrom-style. Through probing relations, scenarios and/or objects, prototypes connect policy, design and participation, theory with practice, and for that you need diversity of *collaborators*, those with a stake on the system or problem. Prototypes capture ongoing activity of real people, their networks and interconnections. Therefore, all actors are attributed equal value, as improvement comes through testing and openness to paradigmatic shifts also in social customs. Authentic participation comes only when the division between lay and experts gets blurred (ibid).

Essential to prototyping is the idea of active and resourceful agents. The 'representative agent' of the social sciences and of traditional economics does not leave room for understanding citizens' heterogeneity and resourcefulness, and crowd them in into co-produced adaptive and iterative decision-making.

7.3 TWO IDEAS TO EXPLORE ADAPTIVE DEVELOPMENT — MINI EXERCISE

Two —related— options to start building authorizing environments in public strategy-making organizations could be:

- *Strategic foresight exercises by way of HCD + co-produced prototypes*

- *PDIA by way of HCD + co-produced prototypes*

Public organizations in charge of short, mid-term and long-term strategy making could start building authorizing environments for *adaptive development*, and therefore help pave the way for a wider reform process in public administration. Why? First, they have a mandate to consider the future. Second, even though there is a lot at stake in strategy-making, such a role is usually less openly scrutinized every day by external actors. Much less as it is for executive or policymaking agencies dealing with education or health, for example. This provides strategy advisory organizations with the chance to start opening up authorizing spaces for positive deviation and therefore space for —at least talking about- deep reforms in public administration, to *make mistakes doing the right thing*.

---

58   For more info on these hackerspaces and DYIbio Labs see http://diybio.org/about/

One option is to conduct strategic foresight exercises using scenarios, with HCD as approach and operational method, including co-produced prototypes that would test how specific actions/directions/strategies would affect the opportunities and capacity of agents in a system or network. A similar idea was mentioned by the UNDP's GCPSE Foresight report (2014, p.4): foresight could indeed represent a unique opportunity for the co-production of public strategy as many foresight techniques are by nature inclusive processes, drawing on collective knowledge. However, due to the nature of complex systems, is important to use approaches that allow retrieving not only explicit knowledge from actors, but also their experiences (tacit knowledge) in relation to certain interactions in a given system (see B3-T1). Co-produced, HCD prototyping could allow precisely that by *zooming in* the agent. And it can also be combined with other methods for the zoom-out (for understanding broader systems, networks, trends, and power dynamics). Moreover, in contexts where complexity thinking is so absent from strategy-making, design helps provoke dialog in an accessible manner (Kelliher & Byrne, 2014, p. 1)[59].

Co-produced prototypes can not only help test specific strategies (understood as solutions) but to test the specific effects they have on specific networks and on the interdependencies that affect the opportunities and capacities of diverse agents. They can support the network analysis needed for the development of inclusive strategies (see B3-T1 and B2-T1).

Sitting side by side to imagine alternative futures is potentially a very powerful and liberating experience, particularly in places where there is a high level of mistrust. Nobody has privileged insight into the long term future and therefore the future is a safe conceptual space in which to explore each other's world views and develop a shared language to talk about choices and developments that affect them all (although in different ways). Here the process is more important than the product: the purpose is to develop trust and social capital (Vandenbroeck, 2012). Scenarios are like canvases to processes of action learning. They allow the exploration of ideas away from the status-quo (ibid).

Try out PDIA by way of HCD + co-produced prototypes

Could PDIA be incorporated systematically into public strategy making and not only in service making or policy making?

---

59   *Hummelbrunner and Jones (2013, p.7) refer to Future Images and Future Stories as two participatory and lighter versions of the scenario technique, compared to 'comprehensive' scenarios which require considerable time and resources.*

PDIA emphasise positive deviance and experimentation through the dynamic collection of immediate feedback lessons; units inside public organizations should have the freedom to try out actions outside existent practices (Pritchett, 2013). Prototyping, which can be extremely cheap, is one way to do such experimentation even if dealing with strategy and not specific services. For Andrews *et al.* (2012) change is only possible if something acts as a bridge between agents with power and agents with ideas. They say such a bridge could be a third party link between central leaders and for example front line workers. Co-production, through crowding-in knowledge, experiences, perspectives and desires could help do what Andrews *et al.* (2012) suggest such bridge could do: "open the elite to an alternate awareness of their reality and spur a process of entrepreneurship, through which multiple agents combine to define and introduce change in their contexts" (Ibid., p. 17). A requirement, it could be argued, if the purpose is to create inclusive strategy in reality and not only in paper.

PDIA keeps a focus on problem definition to achieve wider change process (despite moving through small steps and positive deviance), while HCD zooms-in in the agents' experiences. PDIA requires including other approaches to change making such as political economy analysis, network analysis, and power analysis. Merging PDIA and HCD would allow to constantly adapt and adjust the theory of change (meaning the iterative process of *theorizing* how change will happen and then constantly monitoring and understanding how change is actually happening[60]) not only in view of the results of the change process itself but also in view of the impact the change is having on the involved agents' lived experiences. Using co-produced prototypes as entry-level adaptive processes could make this whole change making process of dealing with complexity through adaptation be and feel more manageable. And as suggested by PDIA, small and incremental steps allow for small wins to build the authorizing environment needed for wider institutional reforms or changes.

---

60   *The Theory of Change (also referred as 'ToC') approach, explains Valters (2014), is an increasingly popular approach to development thinking and practice (management tool and discourse), which "explicitly aims to challenge and change implicit assumptions in world views and programme interventions". This approach "encourages ongoing critical reflection on both the specific (changing) context and how programme rationales and strategies fit into this. It aligns well with current narratives in certain academic and policy circles that development work should be adaptive and take account of complexity and political context" (Valters, 2015). For more see Green (2015b), Pritchett et al. (2012) and the JSRP 'Theories in Practice' series of papers (http://blogs.lse.ac.uk/jsrp/publications/)*

8. Some conclusions — problems, knowledge, power, mistakes, learning

This document has looked at two different —yet similar in key ways— responses to complexity and uncertainty in development work. The idea of the state and citizens co-producing public value seems core to the *public innovation* response being championed by public administrations and other public actors from (mostly) western democracies. Co-production, is hoped, will change the playing rules of public governance.

However, most of the recent co-production efforts linked to this agenda (hailed by some as an emergent paradigm in public governance), have mainly focused on involving citizens at the later stages of solution design or monitoring, after the problem has already been debated and defined and therefore certain paths or trajectories for change have been closed up. Critical voices in scholarship and practice (like the New Synthesis Initiative) have expressed this concern. It seems the transformation required to dealing with complexity and uncertainty can only come from deeply changing the way the State does what it does, how policy is decided or defined. Jasanoff (2012, p. 177) addresses the same concern: "national governments are scrambling to create new participatory forms" but it seems that "such changes may reach neither far enough nor deeply enough (…) Current reforms leave out public involvement in decision-making at the design and product-development phases." For Jasanoff (ibid) it is the very culture of governance what needs to be transformed, both the mechanics and the substance of policy must change. It seems is mainly there, in the *space of the problem*, where co-production efforts can make a substantive difference, by challenging the power dynamics that decide whose voices —and ideas and experiences— count. Co-production can have a transformative impact if co-producers critically scrutinize "existing problem definitions and available policy options" and look together for "new ones in the face of policy failure" (Sørensen & Waldorf, 2014, p.3). It is by co-producing the *understanding of what the problem is* that decision-makers can start acknowledging the full complexity of the problems, their own limitations (the biases the WDR refers to), the limitations of existing policies and the potential of new and emerging ones. Co-production at the early stages of problem definition force organizations to focus on whose knowledge counts, what knowledge counts, and how it counts. "The word 'counts' is critical. For this is about power, the power to define, to frame, to value" (Chambers, 2010, p.36)

And here is where the co-production response meets the adaptive response. Armed in part with the increasingly sophisticated backpack of complexity thinking, adaptive approaches —like a little David against Goliath— are confronting dominant development models of *solutions-before-the-problem*, of end-points and best practices to be copied from those who *know best*, the model of "the simple or complicated controlled and predictable realities, mindsets and approaches of a neo-Newtonian professionalism" (ibid). Adaptive approaches acknowledge the centrality of context, and fundamentally focus on problems (or opportunities) which are *debated*, *defined* and *redefined* by local people, those with a stake on them. They focus on change processes that are legitimized at every level, through local conveners who mobilize all those with a stake in the change process, blending design and implementation in rapid cycles of experimentation. They build up from the complexity thinking insight that "creativity, evolution and change can occur only if there is diversity and if elements within the system are strongly inter-related" (Boulton & Allen, 2007, p.224).

But who are the *local people*? How local is *local*? Who should be involved in adaptive and iterative problem-solving, in adaptive co-production? Should those be local experts, officials, authorities, leaders, non-affiliated expert citizens or civil society leaders? Drawing from HCD a general answer could be those whose lived experiences are mostly affected by the problem area; experience seeing as valuable as technical ability. Drawing from PDIA, we could think of broad sets of agents to ensure reforms are *viable*, *legitimate and relevant*.

The two responses reviewed here provide some clues to begin exploring that question. For example, understanding how change —itself— happens within complex systems seems essential to understand which agents could be included in the decision making process. Attaining desired outcomes requires strategies to be sufficiently adaptive to constantly changing environment conditions. "Change, evolution and innovation result from events that happen *locally* —through non-average interactions and events at particular points in time and space (...) Allowing this so-called micro-diversity is an essential prerequisite for change (even if the change is, ultimately, global)" (Boulton & Allen, 2007, p.215). Knowledge of local circumstances, therefore, is much needed and that could be provided by (or elicited from) non-expert citizens (see section 7.1). The co-production response, similarly, emphasises that diversity of experience is central for change. Individuals aren't helplessly trapped in social dilemmas; they are resourceful, active and have an influence in results.

Other important considerations regarding the involvement of non-expert citizens in strategy-making are provided by Andy Stirling (2015). He posits the most important but neglected issue today is precisely that innovation of all kinds is not about a 'race to the future' but about social choices across a variety of continually changing alternative pathways for change. It is crucial therefore that the directions prioritised are as robustly deliberated, accountable and legitimate as possible (admitting they are uncertain). The dynamic of path dependency makes this especially important. *Broad-based societal consideration/participation* is therefore essential. Often, however, what happens is that a narrower range of expectations about the future drives directions for change (*a crowing-out of* alternatives). "Some of the greatest dilemmas in innovation governance extend well beyond risk: they are about surprises. With the conventional regulatory risk assessment entirely unable to deal with this deepest form of uncertainty, the importance of robust critical deliberation and wider political argument about innovation is seriously reinforced" (ibid, p.13).

Besides admitting uncertainty, innovation strategies should also acknowledge the partly political, rather than purely technical, nature of interests and motivations driving change processes. This requires, Stirling says, sincere participatory deliberation, "especially including the most marginalized interests." This is not, he says, about fostering credibility, but about drawing on collective knowledge to inform policy and help determine the priority directions. Participation is about rigorous exploration of ways "in which legitimate judgements about 'benefits', 'excellence', 'relevance', 'risk', 'evidence' and 'impact' all depend in part (but irreducibly) on contexts, values and assumptions". Innovation is fundamentally about the *politics of contending hopes* (ibid, p.19). Participation is necessary for achieving *innovation democracies*: innovation is about "collaboratively exploring diverse and uncertain pathways — in ways that deliberately balance the spurious effects of incumbent power. What are needed are more realistic, rational and vibrant 'innovation democracies'" (ibid, p.1).

The specific benefits of collective problem-solving have also been studied by authors like Helene Landemore or Scott E. Page. For example, in his books "The Difference" (2007) and "Diversity and Complexity" (2011) Page argues for the beneficial effects of diversity, —the *difference* perspective—, for the functioning of social structures, at every scale. Essentially, diversity (cognitive diversity: interpretations, heuristics and perspective models) leads to better outcomes in solving individual and collective problems: "Diversity among a group of problem solvers is *more* important than individual excellence" (Ioannides, 2009, p.3).

And understanding the relevance of diversity requires thinking about complexity. "By studying diversity and complexity together, we can start to say things about what kind of diversity, when, and under what conditions produces good outcomes (robustness) in systems with what kinds of characteristics" (Page, 2011, p.14). The benefits of diversity may strike as counterintuitive, Pages says, common sense suggests that ability matters more than difference. But "that intuition holds only if we picture people working in isolation, like our heart surgeon" (ibid, p.6). Likewise, Landemore (2012) posits "cognitive diversity matters more than individual ability for the emergence of collective intelligence in collective decision-making" (ibid, p.6). If the choice is between making the decision-making more participatory or reducing decision-makers to the 'best and brightest', the safer bet is, counter-intuitively, to go with participation. Efforts to make the collective decision-making process more inclusive and participatory should result in not just fairer but overall smarter collective decisions.

We started this review document by noting how development actors, from across sectors and disciplines, are rethinking the 'how' as well as the 'what' of development. Chambers (2010, 2011) provides a very useful synthesis of some of the main characteristics of this evolving development discourse and practice. For him, complexity sciences are helping us reframe a longstanding divide between two —old— paradigms in development, the Newtonian and linear paradigm (the *things-paradigm*), and the *people-paradigm*. We do not need the binary, Chambers says, as it misses much. Complexity thinking presents us with a chance to bridge the divide between physical and social sciences. What is noteworthy, he says, is that "participatory methods are increasingly being seen as key to effectively navigate so-called wicked problems and as such play a central role in achieving such paradigmatic win-wins" (Chambers, 2011). Others have voiced this opportunity too: in their book Complexity Theory and the Social sciences, Byrne and Callaghan (2013, 249) also call for more participatory approaches in complexity research, because "complex systems with human agents within them can only be understood and changed if the role of reflexive human agents is recognized and incorporated within the whole process of understanding as a basis for change." Thus, what we are seeing now, argues Chambers, are two not opposing, paradigms: 'Neo-Newtonian' and the 'adaptive pluralism'. But the first is dominant and is unable to deal with complex problems. Therefore, he says, we need a countervailing pull in favour of adaptive pluralism, so the two can better co-exist.

Maybe such countervailing pull can get us closer to avoiding the killing virus of mistrust we referred to in the introduction.

Annexes

ANNEX 1: *SCIENCE OF DELIVERY* AND THE GLOBAL DELIVERY INITIATIVE WORLD BANK

Looking for adaptive responses as inspiration?

Ensuring that kids learn, not only that they attend a properly built building called 'school' represents the main concern behind the World Bank's call for a *science of delivery*, the *how* we move beyond building infrastructure and ensure good outcomes: the learning, the health, the clean production. This is what the World Bank's Global Delivery Initiative (GDI), aims to tackle. Behind is the idea —aligned with adaptive approaches— that sophisticated technical solutions alone are not able to navigate the complexities of effective delivery of services in developing countries. Achieving transformational change is the focus. But that, they say, will require a better integration of the right technical 'what' with the right delivery 'how'. The GDI is a "collaboration across the international development community to forge a new frontier in development efforts worldwide: improving the outcomes by leveraging the delivery know-how" (GDI, 2015).

With 'know-how' GDI means *existing but fragmented knowledge* arising from adaptive responses to complexity in international development. The initiative's goal is to bring together knowledge of what works, why and most importantly how, to support practitioners in using these insights to deliver consistent results on the ground. The initiative "supports the co-creation of an evidence base of delivery know-how: a science of delivery for development" (ibid). We could think of this as finding out what do *positive deviance* cases have in common regarding the 'what' and 'how' they do things, what common patterns could be found. Do they do things in a similar way? Do they follow certain principles (like the DDD principles)?

With access to a library of such case studies, practitioners will make better decisions. The case studies will focus on underexplored and complex delivery problems and processes, what they are, when they emerge and how they are addressed. Details will be provided about the hurdles and changes throughout implementation (ibid).

GDI might be seeking to operationalise the idea that more can be gained from the experience of other reformers than from 'best practice' technical advice; that the knowledge and know-how of front line workers (the ones implementing the reforms on the ground) matters significantly.

Michael Woolcock, in "Using Case Studies to Explore the External Validity of 'Complex' Development Interventions" (2013), argues that analytic case studies can be a particularly fruitful empirical resource informing the tone and terms of the interrogation about the likelihood that results obtained 'there' can be expected 'here'. They can be fruitful especially regarding complex interventions, that this fruitfulness "rises in proportion to the 'complexity' of the intervention: in short, the higher the complexity the more salient (even necessary) analytic case studies become" (ibid, p.6). Case studies focus on "exploring and explaining mechanisms (i.e., identifying how, for whom and under what conditions outcomes are observed—or 'getting inside the black box')" (ibid, p. 15), and this distinguish them as a method of analysis in social science, they go beyond "the familiar qualitative/quantitative divide" (ibid).

In January 2015, GDI and its clients will meet in Chile in a workshop called: "Building Adaptive Implementation - Capacity to Improve Delivery of Results".

ANNEX 2: LIST OF ORGANIZATIONS (NOT AN EXHAUSTIVE LIST)

Adaptive development (doing more or less work on it)

- Centre for Global Development

- Civil Service College Singapore

- Department for International Development (DFID) — UK

- Design for Europe Co-founded by the European Union

- Doing Development Different (community/network)

- GIZ

- GLOBELICS - Innovation and competence building in the context of

economic development

- The Asia Foundation

- STEPS Centre Development studies + science & technology studies

- The ESID Research Centre at University of Manchester

- USAID learning lab

- Waginengen University

- Waterloo Institute for Complexity and Innovation (WICI) — Canada

Innovation for Development— including innovation in the public sector

- Institute of Development Studies

- i-teams.org — NESTA and Bloomberg

- List of public sector innovation laboratories — i-teams report (2014)

- Many Public Sector Innovation Labs, such as MindLab (Denmark), Policy Lab (UK) and La27e Région (France), PS21 Office (Singapore), The Behavioural Insights Team (UK), SITRA (Finland)

- Mercy Corps

- MIT Media Lab

- NESTA — UK

- New Economics Foundation (NEF)

- New Synthesis Initiative

- Overseas Development Institute (ODI) - UK

- RAPID - Research and Policy in Development programme (ODI)

- Rapid Results Institute

- Santa Fe Institute — New Mexico

- Scottish Co-production Network

- TACSI — The Australian Centre for Social Innovation

- The Observatory of Public Sector Innovation OECD

- UNDP Global Centre for Public Service Excellence

- UNDP Innovation Facility

- UNHCR Innovation

- UNICEF Innovation

- US Global Development Lab

Foresight — Future studies

- Centre for Strategic Futures, Strategy Group Prime Minister's Office, Singapore

- IISD Foresight Group — International Institute for Sustainable Development

- Oxford Futures Forum — Said Business School, Oxford University - UK

Further resources in

- Centre for International Development Harvard University

- Effective Institutions Platform - OECD (…"using collective learning processes to capture innovation, stimulating experimentation and bringing this learning to a wider audience")

- Innovation for Development OECD

- LIPSE research project (Learning Innovation in Public Sector Environments)

- LSE Complexity Group

- SIX — Social Innovation Exchange

- Social Innovation Generation (SIG) de l'innovation sociale (social & public innovation), Canada

- Stanford Social Innovation Review — 10th anniversary essays on social innovation (2013)

- UN teams works

References

- Ackoff, R. L. (2004), 'Transforming the systems movement', keynote Address for the International Conference on Systems Thinking in Management. Retrieved June 1, 2015 from http://www.acasa.upenn.edu/RLAConfPaper.pdf

- Algoso, D. (2015), 'The wonk's guide to economics without politics, what happens when the World Bank spotlights human irrationality but leaves human agency in the shadow?' Reboot blog, 10 March. Retrieved June 20 2015, from: http://reboot.org/2015/03/10/the-wonks-guide-to-economics-without-politics/

- Andrews, M., Pritchett, L. & Woolcock, M. (2012), 'Escaping Capability Traps through Problem-Driven Iterative Adaptation (PDIA)'. Working Paper 299, Washington, DC: Centre for Global Development (CGD).

- Bakewell, O., & Garbutt, A. (2005), 'The use and abuse of the logical framework approach'. Stockholm: Swedish International Development Cooperation Agency (Sida).

- Barder, O. (2009), 'Beyond planning: markets and networks for better aid'. Working Paper 185, Washington, DC: CGD.

- Barder, O., & Ramalingam, B. (2012), 'Complexity, adaptation, and results'. Views from the Center CGD blog, 7 September. Retrieved July 3, 2015, from http://www.cgdev.org/blog/complexity-adaptation-and-results

- Bason, C. (2010), *Leading public sector innovation: Co-creating for a better society*. Policy Press.

- Bason, C. (2012), 'Design as catalyst of new organizational readings', paper presented during the proceedings of Panel #24 at the Annual Conference 'Managing collaborative innovation in the public sector', 13-15 April Rome, Italy. Retrieved June 15 2015, from http://mind-lab.dk/wp-content/uploads/2014/09/Bason_IRSPM_paper.pdf

- Bitar, S. (2014), 'Las tendencias mundiales y el futuro de América Latina', Serie Gestión Pública, Santiago: CEPAL.

- Blum, J., Manning, N., & Srivastava, V. (2012), 'Public Sector Management Reform: Toward a Problem-Solving Approach'. Washington, DC: World Bank.

- Booth, D. & Faustino, J., (2014), 'Development Entrepreneurship: How donors and leaders can foster institutional change'. Working politically in practice series, case study number 2. London: Overseas Development Institute (ODI) and The Asia Foundation.

- Boulton, J. & Allen, P., (2007), 'The Complexity Perspective' (chapter 14) in Jenkins, M. (Ed.), (2007), *Advanced strategic management: A multi-perspective approach*. Palgrave Macmillan.

- Boulton, J. (2012), 'Leadership in a complex world'. Cranfield School of Management Web Site. Retrieved June 3, 2015, from http://www.som.cranfield.ac.uk/som/p17526/Think-Cranfield/2012/June-2012/Leadership-in-a-Complex-World

- Bourgon, J. (2015), 'Public innovation and public purpose, A follow up to the 2014 OECD Conference Innovating in the public sector: from ideas to action', published by Public Governance International (PGI). Retrieved June 3 2015, from http://www.pgionline.com/new-pgi-publication-02-19-2015/

- Boyle, D., & Harris, M., (2009), 'The challenge of co-production: how equal partnerships between professionals and the public are crucial to improving public services'. London: Nesta and New Economics Foundation (NEF).

- Brown, T. (2009), *Change by Design*, *How Design Thinking transforms organizations and inspires innovation*. HarperCollins.

- Byrne, D. S. & Callaghan, G., (2013), *Complexity theory and the social sciences: the state of the art*. Abingdon, New York: Routledge.

- Chambers, R., (2010), 'Paradigms, Poverty and Adaptive Pluralism'. Working Paper 344. Brighton: Institute of Development Studies, University of Sussex.

- Chambers, R. (2011), 'Whose Paradigm Counts?' Aid in the edge of chaos blog, 10 February. Retrieved August 1, 2015, from http://aidontheedge. info/2011/02/10/whose-paradigm-counts/

- Christiansen, J. & Sabroe, R. (2015), 'Innovation Labs as Public Change agents', Public Sector Digest, August.

- Christiansen, J. (2014), 'The Irrealities of Public Innovation. Exploring the political epistemology of state interventions and the creative dimensions of bureaucratic aesthetics in the search of new public futures', unpublished doctoral dissertation, Aarhus University, Denmark.

- Christiansen, J., & Bunt, L. (2012), 'Innovation in policy: allowing for creativity, social complexity and uncertainty in public governance'. London: Nesta.

- Churchman, C. West (1967), 'Wicked Problems', December Management Science, 14(4): 141-2.

- Crespi, G., Fernández-Arias, E., & Stein, E. (2014), *Rethinking Productive Development: Sound Policies and Institutions for Economic Transformation* [Synopsis], Inter-American Development Bank. Retrieved June 1, 2015, from http://www.iadb.org/en/research-and-data/dia-development-in-the-americas-idb-flagship-publication,3185.html?id=2014

- CSF & Civil Service College (2014), 'Foresight: a glossary'. Singapore. Retrieved June 1, 2015, from http://www.csf.gov.sg/docs/default-source/default-document-library/csf-csc_foresight--a-glossary.pdf

- Denhardt, J. V., & Denhardt, R. B. (2007), *The new public service: Serving, not steering.* ME Sharpe.

- DIPRES (2015), 'Evaluación Ex-post Conceptos y Metodologías' ['Ex post evaluation, concepts and methodologies']. Santiago: Dirección de Presupuestos [Budget Office], Ministerio de Hacienda, Chilean Government.

- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006), 'New public management is dead—long live digital-era governance'. Journal of Public Administration Research and Theory, 16(3), 467-494.

- Durose, K., Justice, J., & Skelcher, C. (2013), 'Beyond the State: Mobilizing and Co-Producing with Communities - Insights for Policy and Practice'. Birmingham: Institute of Local Government Studies (INLOGOV), University of Birmingham.

- Dussauge Laguna, M. I. (2009), 'La literatura comparada sobre reformas administrativas: Desarrollos, limitaciones y posibilidades' ['Comparative Literature on management reforms: developments, limitations, and possibilities']. Gestión y Política Pública, 18(2), 439-495.

- Ellerman, D. (2001), 'Hirschmanian themes of social learning and change'. Policy Research Working Paper 2591. Washington, DC: World Bank.

- Ellerman, D. (2004), 'Rethinking development assistance: An approach based on autonomy-respecting assistance'. Washington, DC: World Bank.

- European Commission (2013), 'A Vision for public services' [Draft version June 13th 2013]. Directorate-General for Communications Networks, Content and Technology. Retrieved June 3 2015, from http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=3179

- Fox, J. A. (2015), 'Social accountability: what does the evidence really say?' World Development, 72, 346-361.

- Fuerth, L. (2011), 'Operationalizing anticipatory governance'. Prism, 2(4), 31-46.

- Gaventa, J., & Barrett, G. (2010), 'So what difference does it make? Mapping the outcomes of citizen engagement'. IDS Working Paper 347, 01-72.

- Gaventa, J. & McGee, R. (2011), 'Shifting power? Assessing the impact of transparency and accountability initiatives'. IDS Working Papers 383, 01-39.

- Gaventa, J., & McGee, R. (2013), 'The impact of transparency and accountability initiatives'. Development Policy Review, 31(s1), s3-s28.

- GCPSE (2014), 'Foresight as a strategic long-term planning tool for developing countries', Singapore: UNDP Global Centre for Public Service Excellence.

- GCPSE (2015), 'Stewardship of the Future Using Strategic Foresight in 21st Century Governance', Discussion paper, Singapore: UNDP Global Centre for Public Service Excellence.

- Gladwell, M. (2006), *The tipping point: How little things can make a big difference*. Little Brown.

- GDI (2015), Global Delivery Initiative Web Site, World Bank Group. Accessed on July 9, 2015 http://www.worldbank.org/reference/GDI/index.html

- Glouberman, S., & Zimmerman, B. (2002), *Complicated and complex systems: what would successful reform of Medicare look like?* Toronto: Commission on the Future of Health Care in Canada.

- Goodwin, N., (2014), 'The human element in the new economics: a 60-year refresh for economic thinking and teaching', real-world economics review, issue no. 68, 21 August, 98-118.

- Goodwin, N. (2005), 'Five Kinds of Capital', Global Development and Environment Institute, working paper no.03-07, September, Tufts University.

- Green, D. (2015), 'Fit for the Future? Development trends and the role of international NGOs'. London: Oxfam.

- Green, D. (2015b), 'Where Have We Got to on Theories of Change? Passing Fad or Paradigm Shift?', Oxfam From Poverty to Power Blog, April 16. Retrieved July 20 from http://oxfamblogs.org/fp2p/where-have-we-got-to-on-theories-of-change-passingfad-or-paradigm-shift/

- Green, D. (2014), 'The new World Development Report (on mind, society and behavior): lots to like, but a big fail on power, politics and religion', Oxfam From Poverty to Power blog, 16 December. Retrieved July 3, 2015, from http://oxfamblogs.org/fp2p/lots-to-like-in-the-new-world-development-report-on-mind-society-and-behavior-but-a-big-fail-on-power-politics-and-religion/

- Habegger, B. (2010), 'Strategic foresight in public policy: Reviewing the experiences of the UK, Singapore, and the Netherlands', Futures, 42(1), 49-58.

- Hallsworth, M. (2012), 'How complexity economics can improve government: rethinking policy actors, institutions and structures', in *Complex new world: translating new economic thinking into public policy*. London: IPPR (Institute for Public Policy Research), 39-49.

- Hartley, J. (2005), 'Innovation in governance and public services: Past and present'. Public Money and Management, 25(1), 27-34.

- Hartmann, D. (2012), 'Sen meets Schumpeter: Introducing structural and dynamic elements into the human capability approach', Discussion Paper 48, University of Hohenheim, Center for Research on Innovation and Services (FZID).

- Hausmann, R., & Hidalgo, C. A. (2014), *The atlas of economic complexity: Mapping paths to prosperity*. MIT Press.

- Hess, C. & Ostrom, E. (2005), 'A Framework for Analyzing the Knowledge Commons: a chapter from Understanding Knowledge as a Commons: from Theory to Practice'. Paper 21, Libraries' and Librarians' Publications.

- Ho, P. (2015), 'Complexity and Urban Governance'. Presentation at the international workshop 'Understanding Complexity, Offering Solutions to Problems of the 21st century', February, Vienna, Germany.

- Ho, P. (2012), 'Governing for the Future: What Governments can do', Working Paper, Singapore: Rajaratnam School of International Studies (RSIS), Nanyang Technological University.

- Hobbes, M. (2014), 'Stop Trying to Save the World. Big ideas are destroying international development'. *New Republic* [online], 17 November. Retrieved July 1, 2015, from http://www.newrepublic.com/article/120178/problem-international-development-and-plan-fix-it.

- Holland, J. H. (2014), Complexity: A very short introduction, Oxford University Press.

- Howlett, M., Koštro, A. K., & Poocharoen, O. (2015), 'Merging policy and management thinking to advance policy theory and practice: understanding co-production as a New Public Governance Tool,' paper presented to the International Conference on Public Policy II, July, Milan, Italy.

- Hummelbrunner, R., & Jones, H. (2013), 'A guide for planning and strategy development in the face of complexity', Background Note. London: ODI.

- Huppé, G. A., Creech, H., & Knoblauch, D. (2012), 'The frontiers of networked governance', IISD Report, February.

- IADB (2009), 'Evaluation Findings Regarding IDB-8 Guidance and Implications for Future Capital Increase Agreements', Washington DC: Inter-American Development Bank.

- IISD (2015), International Institute for Sustainable Development Web Site. Accessed on July 15, 2015, https://www.iisd.org/networks/gov/

- Ioannides, Y, M. (2010), 'A Review of Scott E. Page's The Difference: How the power of diversity creates better groups, firms, schools, and societies', Journal of Economic Literature, 48(1): 108-122.

- Jasanoff, S. (2003), 'Technologies of humility: citizen participation in governing science'. Minerva, 41(3), 223-244.

- Jasanoff, S. (2012), *Science and public reason*, London: Routledge.

- Jones, H. (2011), 'Taking responsibility for complexity: How implementation can achieve results in the face of complex problems', Working paper 330, London: ODI.

- Kahneman, D. (2011), *Thinking, fast and slow*, New York: Macmillan.

- Kelliher, A., & Byrne, D. (2014), 'Design futures in action: Documenting experiential futures for participatory audiences'. Futures 70, 36-47.

- Kera, D. (2014), 'Innovation regimes based on collaborative and global tinkering: Synthetic biology and nanotechnology in the hackerspaces', Technology in Society 37, 28-37.

- Kera, D. (2014b), 'On Prototypes: Should We Eat Mao's Pear, Sail Saint-Exupéry's Boat, Drink with Heidegger's Pitcher or Use Nietzsche's Hammer to Respond to the Crisis?' Retrieved June 3 2015, from http://bit.ly/1YedzMV

- Kleinfeld, R. (2015), 'Improving Development Aid Design and Evaluation: Plan for Sailboats, Not Trains'. Washington, DC: Carnegie Endowment for International Peace.

- Kolko, J. (2015), 'Design Thinking Comes of Age'. Harvard Business Review, September.

- Krznaric, R. (2007), *How change happens: interdisciplinary perspectives for human development*, London: Oxfam.

- Kuah, A. W. (2013), 'Foresight and Policy: Thinking About Singapore's Future (s)', Social Space, 104-109.

- Landemore, H. E. (2012), 'Why the many are smarter than the few and why it matters', Journal of Public Deliberation, 8(1), 7.

- Lee, P. (2015), 'Before the Backlash, Let's Redefine User-Centered Design', Stanford Social Innovation Review, August.

- Leighninger, M. (2014), 'What we're talking about when we talk about the 'Civic Field' (and why we should clarify what we mean)', Journal of Public Deliberation, 10(1), 8.

- Manning, N. & Watkins, J. (2013), 'Targeting results, diagnosing the means: innovative approaches for improving public sector delivery', Global Expert Team Note, Washington, DC: World Bank Group.

- Manning, N. (2001), 'The legacy of new public management in developing countries', International Review of Administrative Sciences, 67(2), 297-312.

- Manning, N., & Shepherd, G. (2009), 'Reforma de la gestión pública: ¿qué debe aprender América Latina de la OCDE?' [Public management reform, what should Latin America learn from OECD?], Revista del CLAD Reforma y Democracia (44), 5-56.

- McCourt, W. (2013), 'Models of public service reform: A problem-solving approach', Policy Research Working Paper 6428, Washington, DC: World Bank.

- Mietzner, D., & Reger, G. (2004), 'Scenario Approaches: history, differences, advantages and disadvantages', paper presented at the EU-US Seminar: New Technology Foresight, Forecasting and Assessment Methods, Seville, May (pp. 13-14).

- Mitchell, M. (2009), *Complexity: A guided tour*, Oxford University Press.

- Mitchell, M. (2014), 'How Can the Study of Complexity Transform Our Understanding of the World?' Big Questions Online. Retrieved July 1, 2015, from https://www.bigquestionsonline.com/content/how-can-study-complexity-transform-our-understanding-world

- Mitchell, M., & Newman, M. (2002), 'Complex systems theory and evolution', Encyclopedia of Evolution, 1-5.

- Morales, M. (2009), '¿Cómo surgieron y qué efectos han provocado las reformas de la Nueva Gestión Pública en Chile?' [How did New Public Management reforms start in Chile and what have their effects been?], Temuco: Universidad de la Frontera.

- Muir, R., & Parker, I. (2014), *Many to many: How the relational state will transform public services*, London: IPPR.

- Mulgan, G. (2008), *The art of public strategy: mobilizing power and knowledge for the common good*, Oxford University Press.

- Mulgan, G. (2014), 'Innovation in the Public Sector; How can public organizations better create, improve and adapt?', London: Nesta.

- Olsen, J. P. (2005), 'Maybe it is time to rediscover bureaucracy', Journal of public administration research and theory, 16(1), 1-24.

- Osborne, S. P. (Ed.). (2010), *The new public governance: Emerging perspectives on the theory and practice of public governance*, London: Routledge.

- Osborne, S.P. (2006), 'The New Public Governance?', Public Management Review', 8 (3): 377— 87.

- Ostrom, E. (1996), 'Crossing the great divide: coproduction, synergy, and development', World Development 24(6), 1073-1087.

- Ostrom, E. (2000), 'Crowding out Citizenship', Scandinavian Political Studies, 23(1), 3-16.

- O'Keefe, M., Sidel, J.T., Marquette, H., Roche, C., Hudson, D., & Dasandi, N. (2014), Using Action Research and Learning for Politically Informed Programming, Research paper 29, Developmental Leadership program.

- Page, S.E., (2007), *The Difference. How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*, Princeton University Press.

- Page, S.E (2011), *Diversity and Complexity*, Princeton University Press.

- Pereira, L. C. B. (2005), 'Reforma de la nueva gestión pública: ahora en la agenda de América Latina, sin embargo...' ['The New Public Management reform: now in Latin America's agenda, however...'], Documentos y Aportes, 1(3), 41-64.

- Pestoff, V., Brandsen, T., & Verschuere, B. (Eds.) (2013), *New public governance, the third sector, and co-production* (Vol. 7), Routledge.

- Pinnington, R. (2014), 'Local First in Practice unlocking the power to get things done', London: Peace Direct.

- Pliscoff, C. (2009), 'New Public Management in Chile (1990-2008): Exploring its impact on public employees', unpublished doctoral dissertation, University of Southern California.

- Pliscoff, C. (2012), 'Dilemas teóricos post nueva gestión pública como parte de una revisión de la administración pública para América Latina: reflexiones a partir del eterno problema de la corrupción'. ['Theoretical dilemmas after the New Public Management as part of Latin America's public administration review: thoughts on the permanent corruption problem']. Paper presented at the XVII Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública, Cartagena, Colombia.

- Polidano, C. (1999), *The new public management in developing countries*. Manchester: Institute for Development Policy and Management, University of Manchester.

- Pritchett, L. (2013), 'El Banco Mundial y la Gestión del sector público: ¿qué sigue?' en Revista Internacional de Ciencias Administrativas, vol.79, no.3, September.

- Pritchett, L., Samji, S., & Hammer, J. S., (2012), 'It's all about MeE: Using Structured Experiential Learning ('e') to crawl the design space', Working Paper 322, Washington, DC: CGD.

- Pritchett, L., Woolcock, M., & Andrews, M. (2013), 'Looking like a state: techniques of persistent failure in state capability for implementation'. The Journal of Development Studies, 49(1), 1-18.

- Puttick, R., Baeck, P., & Colligan, P., (2014), 'I-teams, the teams and funds making innovation happen'. London: Nesta.

- Quaggiotto, G., & Begovic Radojevic, M. (2014), 'Innovation for development: Scaling up or evolving?' Voices from Eurasia blog, 6 February. Retrieved July 5 2015: http://europeandcis.undp.org/blog/what-is-this-blog-all-about/

- Ramalingam, B. (2015), 'The Adaptation Gap (and how to deal with it)', Oxfam From Poverty to Power Blog, November 27. Retrieved November 28, 2015 from https://oxfamblogs.org/fp2p/the-adaptation-gap-and-how-to-deal-with-it/

- Ramalingam, B. (2014), Putting Development on the Couch, Aid in the Edge of Chaos Blog, December 5. Retrieved July 3 2015, from http://aidontheedge. info/2014/12/05/the-wdr-2015-putting-development-on-the-couch/

- Ramalingam, B. (2013), *Aid on the edge of chaos: rethinking international cooperation in a complex world*, OUP Oxford.

- Ramalingam, B., (2011), 'What Does The Atlas of Economic Complexity Mean for Development?', Aid in the Edge of Chaos blog, November 3. Retrieved July 4 2015, from http://aidontheedge.info/2011/11/03/the-atlas-of-economic-complexity/

- Ramalingam, B., Laric, M., & Primrose, J. (2014), 'From Best Practice to Best Fit: Understanding and Navigating Wicked Problems in International Development', draft paper, London: ODI.

- Ramalingam, B., Jones, H., Reba, T., & Young, J. (2008a), 'Exploring the science of complexity: Ideas and implications for development and humanitarian efforts', Working Paper 285, London: ODI.

- Ramalingam, B., Mendizabal, E., & van Mierop, E. S. (2008b), 'Strengthening humanitarian networks: Applying the network functions approach'. London: ODI.

- Ramírez Alujas, A. (2001), 'Reforma del Estado, Modernización de la Gestión Pública y Construcción de Capital Social'. ['State reform, modernization of public management and the building of social capital'] Santiago: Universidad de Chile, Facultad de Ciencias Físicas y Matemáticas.

- Rao, S. (2014), 'Problem-driven iterative approaches and wider governance reform', Helpdesk Research Report, GSDRC.

- Rittel, H. W., & Webber, M. M. (1973), 'Dilemmas in a general theory of planning', Policy Sciences, 4(2), 155-169.

- Rogers PJ. (2008), 'Using programme theory to evaluate complicated and complex aspects of interventions', Evaluation, 14, 29-48.

- Robinson, M. (2015), 'From Old Public Administration to the New Public Service Implications for Public Sector Reform in Developing Countries', Singapore: UNDP Global Centre for Public Service Excellence.

- Rodrik, D. (2004), 'Industrial Policy for the twenty-first century', Cambridge: John F. Kennedy School of Government Harvard University.

- Root, H., Jones, H., & Wild, L. (2015), 'Managing complexity and uncertainty in development policy and practice', London: ODI.

- Rostow, W. W. (1990), 'The stages of economic growth: A non-communist manifesto', Cambridge University Press.

- Schulman, S., (2010), 'The prototype and the pilot', InWithFor blog, 22 February. Retrieved July 8 2015, from http://www.inwithfor.org/2010/02/the-prototype-and-the-pilot/

- Schön, D. A. (1971), *Beyond the stable state: Public and private learning in a changing society*, Maurice Temple Smith Limited.

- Selin, C., Kimbell, L., Ramirez, R., & Bhatti, Y. (2015), 'Scenarios and design: Scoping the dialogue space', Futures.

- Sen, A. (1999), *Development as freedom*, Oxford University Press.

- Sørensen, E., & Waldorff, S. B. (2014), 'Collaborative policy innovation: Problems and potential'. Innovation Journal, 19(3), 1-17.

- Stirling, A. (2015), 'Towards Innovation Democracy? Participation, Responsibility and Precaution in Innovation Governance', STEPS working paper 78, Brighton: STEPS Centre.

- Swanson, D., & Bhadwal, S. (2009), Creating adaptive policies: A guide for policymaking in an uncertain world. IDRC.

- Thaler, R. H., & Sunstein, C. R. (2008), Nudge, Yale University Press.

- Torfing, J., & Triantafillou, P. (2013), 'What's in a name? Grasping new public governance as a political-administrative system', International Review of Public Administration, 18(2), 9-25.

- Unger, R. M. (2005), *What should the left propose?* Verso.

- UNICEF & Reboot (2013), 'A promise to every child. Developing a regional policy for children in Nicaragua's northern Atlantic Autonomous Region'. Project report.

- Uphoff, N. (1987), 'Drawing on Social Energy in Project Implementation: a learning process experience in Sri Lanka'. American Society for Public Administration, 1-55.

- Valters, C., (2014), 'Theories of Change in International Development: Communication, Learning, or Accountability?' JSRP Paper 17. London: JSRP and The Asia Foundation.

- Valters, C., (2015), 'Theories of Change Time for a radical approach to learning in development', September, London: ODI and The Asia Foundation.

- VanAntwep, S., (2013), 'Co-production: A powerful approach for public service designers'. MaRS Blog, 29 July. Retrieved 3 July 2015 http://www.marsdd.com/news-and-insights/co-production-a-powerful-approach-for-public-service-designers/

- Vandenbroeck, P. (2012) 'Working with wicked problems', Bruselas: King Baudouin Foundation'. Retrieved Julio 13, 2015 from http://www.slideshare.net/pvandenbroeck/wicked-problems-kbf-2012

- Verschuere, B., Brandsen, T., & Pestoff, V. (2012), 'Co-production: The state of the art in research and the future agenda'. Voluntas: International Journal of Voluntary and Nonprofit Organizations, 23(4), 1083-1101.

- Voorberg, W., Bekkers, V., & Tummers, L. (2013), 'Co-creation and co-production in social innovation: a systematic review and future research agenda'. Paper presented at the EGPA Annual Conference, Edinburgh.

- Voorberg, W., Bekkers, V., & Tummers, L. (2014), 'A Systematic Review of Co-Creation and Co-Production: Embarking on the Social Innovation Journey'. Public Management Review, 1-25.

- Wilkinson, A., & Kupers, R. (2013), 'Managing Uncertainty, Living in the Futures'. Harvard Business Review, May.

- Wilkinson, Mayer & Ringler, 2014, 'Collaborative Futures: Integrating Foresight with Design in Large Scale Innovation Processes-Seeing and Seeding the Futures of Europe', Journal of Future Studies, June, 18(4): 1-26.

- Woolcock, M. (2013), 'Using case studies to explore the external validity of 'complex' development interventions'. Evaluation, 19(3), 229-248.

- Woolcock, M. (2009), 'Toward a plurality of methods in project evaluation: a contextualized approach to understanding impact trajectories and efficacy'. Journal of Development Effectiveness, 1(1): 1-14.

- World Bank (2015), 'Mind, Society and Behaviour', World Development Report. Washington DC: World Bank.

- Yanguas, P. (2014), 'Doing Development Differently: The future is now-ish', Effective States and Inclusive Development blog FECHA. Retrieved August 2, 2015, from http://www.effective-states.org/doing-development-differently-the-future-is-now-ish

Woking paper

cnid | Consejo Nacional
de Innovación
para el Desarrollo