



Accepted for publication 11 April 2019 • First published online 26 August 2019

This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 license (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits adaptation, alteration, reproduction and distribution for non-commercial use, without further permission provided the original work is attributed. The derivative works do not need to be licensed on the same terms.

SPECIAL ISSUE • Policy-making as designing: the added value of design thinking for public administration and public policy

article

When design meets power: design thinking, public sector innovation and the politics of policymaking

Jenny M Lewis, jmlewis@unimelb.edu.au
Michael McGann, mmcgann@unimelb.edu.au
Emma Blomkamp, blomkamp.e@unimelb.edu.au
University of Melbourne, Australia

Responding to the need for innovation, governments have begun experimenting with 'design thinking' approaches to reframe policy issues and generate and test new policy solutions. This paper examines what is new about design thinking and compares this to rational and participatory approaches to policymaking, highlighting the difference between their logics, foundations and the basis on which they 'speak truth to power'. It then examines the impact of design thinking on policymaking in practice, using the example of public sector innovation (PSI) labs. The paper concludes that design thinking, when it comes in contact with power and politics, faces significant challenges, but that there are opportunities for design thinking and policymaking to work better together.

key words public sector innovation • design thinking • participatory policy • policy design • power

To cite this article: Lewis, J.M., McGann, M. and Blomkamp, E. (2020) When design meets power: design thinking, public sector innovation and the politics of policymaking, vol 48, no 1, 111–130, *Policy & Politics*, DOI: 10.1332/030557319X15579230420081

Introduction

Innovation has become a much-used word in the public sector in the last two decades (Hartley, 2005; Osborne and Brown, 2013). As governments seek solutions to pressing issues within the inevitable financial constraints they face, they have increasingly turned to the idea of 'innovation' to help them address the complexity of problems with which they are grappling (Lewis et al, 2017). While innovation might be considered problematic in governmental contexts, given that it has strong normatively positive overtones on the one hand, but presents significant challenges to

traditional bureaucratic procedures on the other, it is an idea that has gained currency around the world. This is in part demonstrated by the creation of many public sector innovation (PSI) labs at multiple levels of government in individual countries, as well as in international organisations such as the OECD, with its Observatory of Public Sector Innovation (OPSI) established in 2014.

Responding to this rising focus on public sector innovation, governments have begun experimenting with design-led or ‘design thinking’ approaches as a way of reframing policy issues and generating and testing new solutions to public problems (Bason, 2013; Design Council (UK), 2013; Kimbell, 2016; Blomkamp, 2018). Although seldom concretely defined, design thinking can be loosely understood as a ‘human-centred’ approach to innovation that draws from the processes used by industrial and product designers. In terms of design researchers, it is: ‘Performing the complex creative feat of the parallel creation of a thing (object, service, system) and its way of working’ (Dorst, 2011: 525). Design thinking is increasingly being looked to by organisations who have a need to broaden their repertoire of strategies for addressing open-ended and complex challenges (Dorst, 2011). This has in part been driven by a social turn (Chen et al, 2016) within the field of industrial design, as designers, inspired the participatory philosophies of theorists such as Papanek and Manzini, have sought to evolve design beyond a tool for the development of functional consumer products into a process for the collaborative development of ‘radical change’ (Bjögvinsson et al, 2012). Its proponents claim that it can help solve contemporary policy challenges in areas as diverse as health, climate change and employment.

For many working in policy, design thinking constitutes a ‘bottom-up’ approach where the gap between designers and citizens is narrowed through decisions being informed and even sometimes driven by those who are affected by policies (Kolko, 2018). This participatory focus of design draws from the democratic concept whereby all those ‘affected by design decisions should be involved in the process of making the decisions’ (Sanoff, 1990: i). In particular, developing more collaborative approaches that involve multi-actor networks of public and private stakeholders is viewed as a key imperative (Sorensen and Waldorff, 2014). In this context, the extension of design thinking to policy – particularly participatory and co-design approaches – resonates with principles of network governance (Considine and Lewis, 2003), participatory governance (Fung, 2015), and co-production (Voorberg et al, 2015). However, design thinking has not been universally seen as aligned with increasing participation and democracy. Iskander (2018), for example, argues that it is inherently conservative, based on privileging the designer ahead of those who are meant to be served by the process. Her argument is that, not only is it nothing new, but design thinking suffers from the same limitations of other policymaking approaches by protecting the powerful. This raises the question of what is different about design, and how well it aligns with policy processes.

Despite its growing popularity, there has not been much critical investigation into the impact of design thinking on policymaking (Clarke and Craft, 2018). This paper asks three questions: first, what is really new about design thinking in the public sector? Second, how does it challenge or differ from more traditional approaches to policymaking? And third, what impact, if any, does it have on the process of policymaking? We first address these three questions by examining design thinking and comparing it to two alternative approaches to policymaking: rational-process and participatory models. Distinguishing design thinking from these models at an

analytical level helps us to understand the potential of design thinking to genuinely reshape policymaking by impacting on the normative goals and epistemological frameworks guiding it.

The realisation of these impacts very much depends on how design thinking is operationalised within policy systems at a practice level. That is, whether design thinking influences policymaking throughout the multiple stages of policymaking or is primarily being applied only in the early stages of problem exploration; and whether it is applied to large scale and central policy issues, or only to small scale and peripheral issues. The structuring of design thinking's practical application will determine whether 'the introduction of design [thinking] to policymaking' (Bailey and Lloyd, 2016) is fundamentally changing the nature of policymaking processes as predicted by some theorists (for example, Kimbell, 2016) or tinkering around the edges of existing decision-models. Hence, we use an empirical study of PSI labs to tackle this question of impacts on policymaking in practice.

One of the most important ways in which design thinking is being taken up and applied by within policy systems is the recent proliferation of PSI labs. Insights into how design thinking is currently being deployed within policy systems can be generated by focusing on them because they are now numerous and can be understood as 'design-for-policy' entrepreneurs: that is, as policy actors who promote 'design-for-policy' ideas through their advocacy and pursuit of design thinking approaches to public problem solving (compare Mintrom, 1997). We claim this for several reasons. First, important proponents of design thinking (entrepreneurs) have been centrally involved as directors of PSI labs (for example, Christian Bason at MindLab in Denmark). Second, some have described the role of PSI labs as being 'to create motivation and commitment to design thinking for policymaking' (Mintrom and Luetjens, 2016: 400). Third, recent surveys have shown that PSI labs continue to be established and indeed rely heavily on design thinking (Fuller and Lochar, 2016; Centre for Policy Innovation and Public Engagement, 2018; McGann et al, 2018a). Accordingly, to test how design thinking is having an impact on policymaking, we explore empirically how it is being applied by PSI labs to address public and policy problems. We do so by drawing on a survey of over 50 PSI labs in Australia and New Zealand conducted in early 2018, which gathered data on the stages of innovation PSI labs are working on, the extent to which they are undertaking policy-related projects and activities, and the different levels of government with which they are working.

The paper proceeds by first comparing a design approach to two alternative approaches to policymaking, to address the first two questions. We then briefly review the recent emergence and proliferation of PSI labs, arguing that they represent the vanguard of design thinking in the public sector, and present an empirical account of PSI labs in Australia and New Zealand to explore whether design is having an impact on policymaking (our third question). We use the term 'PSI labs' in this paper to include innovation units, teams and other agencies – both inside and outside government – that focus on innovation in the public sector. Although our data shows that PSI labs – both within and outside of government – are very frequently being engaged to solve problems by agencies and departments across multiple levels of government in Australia and New Zealand, it also shows that much of their activity is concentrated at the level of discrete service redesign projects or managing stakeholder consultation processes. Few PSI labs in Australia or New Zealand are

directly engaged in developing policy proposals or reforms, or work on systemic change, focusing instead on the earlier exploratory work of scoping problems. In the concluding discussion, we identify several factors that help to explain the currently limited reach of design thinking within policy systems and the degree of fit between design thinking and more traditional approaches to policy design.

Design thinking as an alternative approach to policymaking

What is novel about design thinking in comparison to other approaches to policymaking? One answer lies in the form of reasoning underpinning design thinking, and what it implies for the sequencing of problem-solving processes and the normative values that ought to guide decision-making. Design thinking is based on a form of reasoning that moves beyond the analysis and problem solving we often associate with the policy process to create the end value desired, in the absence of knowing what to create and how to create it (Dorst, 2011). This abductive reasoning can be likened to a phenomenological form of analysis where complex situations are distilled as ‘themes’ through ‘a process of insightful invention, discovery and disclosure’ (Dorst, 2011: 258). For design thinkers, this phenomenological orientation implies that policy making should be guided by the values of ‘empathy’ and ‘curiosity’, along with ‘rationality’ (Torjman, 2012: 19), and a focus on ‘crafting new solutions *with* people, not just *for* them’ (Carstensen and Bason, 2012: 6). It is important to first search for the central paradox of a problem, then only work iteratively towards a solution once the nature of the core paradox is understood (Dorst, 2011). When conventional problem solving fails, a focus on the problem-as-presented first needs to be deconstructed (Hekkert and Van Dijk, 2011) before it can be solved. For these reasons, its supporters claim that the application of design thinking approaches is helping to generate ‘an entirely different decision-making model for policy’ (Bailey and Lloyd, 2016: 6); one that involves far more than just an extension to the existing repertoire of policy design tools but ‘a different way for policymaking to be done’ (Bason, 2014: 3). These statements suggest a stark contrast between the logics of design thinking and traditional policy design approaches (Clarke and Craft, 2018); at least compared to the rational-process models depicted in policy handbooks, against which proponents of design thinking position themselves.

Policy handbooks generally suggest that policymaking constitutes a coherent ‘process of authoritative problem solving’ in which the government and its bureaucracies solve ‘known problems’ through the exercise of instrumental rationality (Colebatch, 2005: 14). While there are arguments about the extent to which policymaking is technically rational in practice, some believe that it should be more so, and others claim that such models provide useful frameworks for policy practitioners, regardless of how closely the process mirrors this in practice. Consider process models of the policy cycle, which proceed sequentially from agenda-setting, through policy analysis and formulation, decision-making, policy implementation and finally to monitoring and evaluation (see, for example, Althaus et al, 2013). These models are inspired by Lerner and Lasswell’s (1951) ‘stages’ schema of policymaking as a sequence of ‘intelligence; recommendation; prescription; invocation; application; appraisal; and termination’ (Bridgman and Davis, 2003: 99). Goals are formulated and then choices

are enumerated, analysed and modelled *before* the option deemed most efficient is selected for implementation (Wagle, 2000: 208).

Throughout this policymaking process there is an expectation of 'rigorous... appraisal of problems and solutions' (Considine, 2012: 707) through data gathering, forecasting and modelling. Within a rational-process model, policy analysts systematically develop policy options to solve problems pre-determined by governments, and they do this by applying 'knowledge about policy means gained from experience, and reason' to determine those 'courses of action that are likely to succeed in attaining their desired goals or aims' (Howlett, 2014: 188). This understanding assumes that the specification of policy goals precedes the tasks of policy analysis and instrument design (see, for example, Bridgman and Davis, 2003), and that the analyst's job involves 'determining the best means to a given end' (Dryzek, 2002: 213).

In rational choice models of this process, the selection of policy options and instruments should be 'empirically driven' (Wagle, 2000) in the sense of being determined by social-scientific knowledge about 'what works and why' (Parsons, 2002), and occurring outside politics (Lewis, 2003). This view of policy design is underpinned by the belief that policy challenges can be reduced to technical problems that can be scientifically solved (Head, 2008). But it also frames policies as the result of rational choices by policymakers (that is, the government). The contemporary movement towards 'evidence-based' policymaking is a species of this scientism in that it posits verifiable social-scientific knowledge as the 'modern currency of public policy' (Adams, 2004: 30). Many alternatives to this rational model have been proposed as correctives to its theoretical and practical limitations, and they are too numerous to cover here. What are most important for this paper are interpretive and participatory models, since these come closest to some aspects of what is presented as a design approach. They similarly emphasise how the development of solutions is deeply dependent 'on the prior work of problem construction and reconstruction' (Fischer and Forester, 1993: 3), and on how the work of both problem construction and solution analysis is 'intimately involved with relations of power' (Fischer and Forester, 1993: 7).

Design thinking, considered here as the parallel creation of a thing and its way of working (see Dorst, 2011), pushes policy decision-making towards 'a fundamentally creative form of deliberation, which operates with different decision processes to those of rational choice' (Considine, 2012: 708). It implies an iterative and 'self-correcting' approach to policymaking that proceeds through interlocking processes of scoping, defining and reframing problems; ideating, prototyping and testing solutions; and learning by doing (Torjman, 2012: 10). The iterative nature of policymaking from a design thinking perspective stems from viewing the design process as a 'bottom up' approach to public problem solving that is playful, creative and, at times, even illogical (Kolko, 2018; see also Considine, 2012).

Creativity is central to design thinking, but it is also often linked to participatory approaches, because creative design tools can be used to facilitate a more collaborative approach by bringing different kinds of people and knowledge into the policy process (Blomkamp, 2018). Design thinking approaches can be placed along a spectrum according to the degree to which they are genuinely participatory. Human-centred or user-centred design emphasises understanding citizens' views and experiences during the stages of problem definition. Here, the tools of design may continue to be employed within (rather than challenge)

rational choice models by becoming part of the methodology for searching for alternatives during the process of considering how to solve a problem (Considine, 2012). Co-design approaches, on the other hand, embody a much stronger democratic commitment to including those affected by a policy or institution as *active participants* in designing the solution. Regardless of distinctions about the extent of participation, empathising with, and widening the inclusion of citizens in the decision-process, is generally regarded as a core tenet of how design thinking is viewed within the *policy* context.

Critical and discursive approaches to policy (for example, Fischer and Forester, 1993; Yanow, 1996) relate to co-design for policy, as they similarly ‘favour participatory techniques in which a panel of citizens is at the heart of the analytic process’ (Hoppe, 1999: 208). Habermas’ theory of communicative action provides an illustrative example (see for example Renn, 2006), and is often taken as the groundwork for developing and applying a more participatory turn in policy design (Fischer and Forester, 1993; Hoppe, 1999; Dryzek, 2002). At issue in these competing accounts are the conditions under which actors can ‘speak truth to power’ and what constitutes policy knowledge in this process. Discursive approaches view knowledge in terms of the deliberative ‘exchange of arguments and reflections’ (Renn, 2006: 35) and see it as the public’s role to speak truth to power.

Design thinking embraces *situated* and *abductive* forms of reasoning that depend upon designers deeply immersing themselves in thickly experiential policy contexts (Bailey and Lloyd, 2016; Kimbell, 2016). Participatory design thinking approaches, according to proponents, require designers to have humility and ‘an emotional connection’ to the people involved in the process (Kolko, 2018). Within this paradigm, ‘emotion and intuition’ are treated as valid bases for determining viable options (Bason, 2013: x). This marks an important difference with deliberative approaches which, while recognising the importance of empathy in mobilising participants to gain mutual understanding, nevertheless privilege the ‘inherent rationality’ (Renn, 2006: 35) of argumentative persuasion as the basis for adjudicating options.

Beyond work that is focused on design-led and participatory approaches to policy, some recent work by Peters (2018) compares ‘old’ and ‘new’ policy design, and claims that while the processes are very different, the purposes (of improving the economy and society) are less so. The main difference, according to Peters, is the attempt to open up designing to a wider range of ideas and possibilities, and to emphasise innovation. His comparison between old and new policy design highlights an emphasis on ambiguity and openness in the new design, which he views as positive in moving from a technocratic form of design to one that is ‘more open, and less deterministic’ (Peters, 2018: 128). In summary, Peters argues that we need to meld the emphasis on precision and closure in older versions of policy design with the supposed virtues of new design – openness and ambiguity. A similar argument is made by Clarke and Craft (2018), who claim that design thinking provides some advantages that allow the shortcomings of traditional policy design to be addressed.

In summary, the application of design thinking does not sit easily alongside the pursuit of other approaches to policy, according to some of its promoters. The evidence for action that is generated by abductive and creative reasoning styles ‘is the antithesis of the ideal evidence base required for developing a policy’ (O’Rafferty et al, 2016: 14) within rational choice models. Others, however, have suggested that design approaches have substantial overlap with more traditional policy design (Peters, 2018). Further,

Table 1: Three approaches to policy

	<i>Rational</i>	<i>Participatory</i>	<i>Design thinking</i>
Logic	Soundness (deduction, induction, objectivity, analysis)	Inclusion (consultation, argumentation, collaboration)	Innovation (humanity, intuition, Abduction-2)
Foundation	Evidence	Discussion	Imagination
Speak truth to power on the basis of:	Technical expertise	Democratic principles	Creative ideas

some have argued that design is able to deal with some aspects of policy but not others – particularly in regard to the interface with political and institutional constraints, while recognising that it has potential benefits in terms of adaptability, gaining more user perspectives, and better using collaborative approaches (Clarke and Craft, 2018).

This discussion of the contrasts and complementarities of design thinking and rational and participatory approaches to policymaking, suggest some likely tensions when design meets power. These are summarised in Table 1. The logics and foundations that underpin these approaches, and the basis on which they can speak truth to power (meaning political and policy systems), are different in each of these (although not always in conflict). For design, creativity is valued over technical expertise and democratic principles, and imagination over evidence and discussion, although design is associated with involving users (more or less). It seems that speaking design to power, on the basis of creative ideas rather than technical expertise and democracy – concepts that are built into the policy process – will face some significant resistance. We return to this in the conclusion, following our exploration of PSI labs as exemplars of design thinking in practice.

PSI labs as 'design-for-policy' entrepreneurs

As previously noted, one the most important ways in which design thinking is being taken up in practice within policy systems is through the spread of PSI labs. In 2016, it was estimated that there were more than 60 public policy innovation labs within EU member states alone (Fuller and Lochar, 2016), while others have estimated that, worldwide, around 100 PSI labs had been established at various levels of government, with new labs being created at 'a rate of at least one a month' (Price, 2015). Recent research suggests this is likely to be a gross under-estimation of the number of PSI labs worldwide, since 52 PSI labs have been identified in Australia and New Zealand (McGann et al, 2018a) and 41 in Canada (Centre for Policy Innovation and Public Engagement, 2018). Many PSI labs are not formally part of the public sector yet work extensively with governments. This includes some of the most prominent PSI labs internationally such as Nesta's Innovation Lab, MARS lab in Toronto, and GovLab in New York, who have become key influencers 'in the global circulation of policy lab ideas' (Williamson, 2015b: 4) and in the diffusion of design-based ideas as a framework for public innovation (Williamson, 2015b). They resemble policy entrepreneurs, working to shape the terms of debate on policy innovation in ways that promote a particular set of approaches to problem solving (Mintrom, 1997). Their place within policy systems can perhaps be best understood if they are regarded as similar to think tanks and other small organisations that work with government but have substantial autonomy.

Like other small organisations that work closely with government, PSI labs have an emphasis on organisational autonomy and capacity to provide expertise and legitimacy to the public sector. Previous international research on PSI labs suggests that most of them work across government agencies and departments, traverse multiple policy sectors, are rarely subject to specific performance measures or strenuous evaluations, and operate with high levels of autonomy (Williamson, 2015b; Tönurist et al, 2017). These characteristics have led them to be described as new boundary-crossing organisational forms, or ‘innovation intermediaries’ (Williamson, 2015a: 254), in that they are designed to overcome a range of barriers that make innovation and cross-cutting coordination difficult within public sector bureaucracies. These include the ‘highly sectoralised’ (Carstensen and Bason, 2012: 3) nature of the public service both administratively and horizontally between policy domains, and the bureaucratic structure of traditional public sector organisations which fosters risk aversion and resistance to change. In this sense, PSI labs, like think tanks, can be understood as forward-looking or ‘pioneering policy entrepreneurs’ (Fraussen and Halpin, 2017: 116), with Williamson observing that they combine ‘elements of the political think tank, media production...design and digital R&D’ (2015a, 4).

In short, PSI labs can be understood as a specific kind of ‘*design-for-policy* entrepreneur’. By this we mean that they are entities whose contribution to policy systems lies in their capacity to develop creative policy solutions using design approaches and methods, but that they also promote design approaches and are driven by design entrepreneurs. They can be understood as experimental sites ‘for solving the social and public problems that vex governments’ (Williamson, 2015b: 4). We claim that they are experimental in three related senses: as organisations; in their approaches and methods; and in policymaking.

First, they are often ‘in and of themselves experimental initiatives’ in that they are predominantly small-scale and ‘nascent structures’ rather than mature entities (Fuller and Lochard, 2016: 1). For example, the 35 (largely North American and European) PSI labs surveyed by Tönurist and her colleagues (2017) had an average of just six to seven staff and a life-span between three and four years (see also Fuller and Lochard, 2016). Among the 26 government-based labs surveyed in Australia and New Zealand, 50 per cent had less than six staff and more than half were established within the last two years (McGann et al, 2018a). The small size of PSI labs affords them a degree of agility that many regard as crucial to their capacity to act as public ‘change agents’ (Schuurman and Tönurist, 2017: 9). But it also makes their survival highly contingent on ongoing political patronage as they are comparatively easy to shut down compared with more established public sector organisations. This is illustrated by the recent closure of the longstanding MindLab, following a change in the Danish government’s political priorities (Guay, 2018). Those that endure, such as the UK Behavioural Insights Team, tend to be backed by ‘senior champions’ and high-level secretaries ‘who are able to open doors and offer protection’ (John, 2014: 264).

The second sense in which PSI labs can be understood as experimental concerns their role as structures for applying ‘experimental methods’ (Puttick, 2014: 4). PSI labs typically employ a toolbox of innovation approaches that combine a hybrid of ‘digital, data science, and especially design-oriented methodologies’ such as human-centred design and user ethnography. The methods and approaches that they bring are generally considered to require skills ‘beyond what most trained civil servants usually possess’ (Carstensen and Bason, 2012: 5). Their authority and influence

therefore lies in their claims to methodological rather than subject-matter expertise (Williamson, 2015a: 260), particularly as PSI labs tend to work across agencies and policy sectors rather than being geared towards a specific policy domain (Fuller and Lochard, 2016: 14). Several commentators expressly define PSI labs in terms of their commitment to taking a design thinking approach to public problem solving. For example, La 27e Région's overview of public policy labs in EU member states defines them as 'emerging structures that construct public policies in an innovative, design-oriented fashion, in particular by engaging citizens and companies working with the public sector' (Fuller and Lochard, 2016: 2). Similarly, Bason and Schneider (2014: 35 *emphasis added*) argue that PSI labs 'tackle complex public/social problems that more traditional governmental structures fail to resolve, *in particular, using design to experiment and propose innovative public services and policies and at the same time reform and change the way government operates*'.

The third way in which they are experimental, PSI labs are often explicitly linked to a shift towards more participatory forms of policymaking – which emphasise the empowerment of citizens and the role of 'inter-organisational communities of practice' (Sørensen and Torfing, 2015: 154) in driving public and policy innovation (Carstensen and Bason, 2012; Schuurman and Tönurist, 2017). Multi-actor collaboration across various stages of the policy cycle, proponents argue, can fundamentally change the way that public problems are perceived (Mintrom and Luetjens, 2016) thereby preventing public sector organisations 'from wasting money, time and energy on solving the "wrong" problem' (Sørensen and Torfing, 2015: 152). In particular, involving those citizens who are affected by policy problems can help to reframe public problems in more acute ways 'than professionals acting alone' (Fung, 2015: 5) through overcoming information asymmetries between public administrations and service or policy users. This can enhance implementation outcomes by promoting greater awareness of citizens' needs among public managers and ensuring that designs are empathetic to how citizens' 'experience and interact with social problems, services, and programs' (Clarke and Craft, 2018: 8). As Hartley, Sørensen and Torfing (2013) argue, there are benefits from involving citizens throughout all stages of the design process – in the definition and framing of problems, in the generation of new and creative solutions, and in the implementation of effective solutions. These authors also argue that policy can be enhanced when it is created through participation and dialogue (Hartley et al, 2013: 825–826).

We therefore argue that PSI labs can be considered as design-for-policy entrepreneurs. They are exemplars of the championing and application of design thinking in the public sector and are often related to participatory approaches to policymaking. In the next section, we use an empirical study of PSI labs in Australia and New Zealand to assess their potential impact on policy systems.

Survey of Australian and New Zealand labs

In 2013, the UK Design Council argued that there was relatively little evidence of design thinking being applied strategically in government. Despite the spread of PSI labs and the claims of their most ardent supporters, it remains unclear whether many labs undertake projects of a long-term, complex nature or work on high-level and strategic policy change. Previous studies suggest that their activities are more likely to be directed at discrete projects and service design, with few

labs engaged in scaling or implementing solutions (Tönurist et al, 2017; McGann et al, 2018b). Exploring this and related questions, a survey of PSI labs in Australia and New Zealand was conducted in early 2018 (McGann et al, 2018a) to map the emerging landscape of PSI labs in these countries, and to understand the impact of design thinking on policy.

In our survey, PSI labs were asked about: the organisation's size and history; their relationship to government; the background and skills of their staff; the policy areas they work on; the methods they use; and the levels of design and stages of innovation they focus on. For the purposes of this paper, the analysis draws on the responses to questions on:

- 1 their methods (as an indication of the extent to which our claim that they are design for policy entrepreneurs is supported);
- 2 the levels of design and stages of innovation they are working on (an indication of their ability to have an impact on policymaking in practice); and
- 3 their relationship to government (an indication of their closeness to the policy process – a proxy for their ability to have an impact on policymaking in practice).

Because we were uncertain about how broadly we needed to search to find PSI labs, they were defined as any unit or team that was '*established for the purposes of supporting public or social innovation*' including both 'units within government, or the public sector, as well as non-government organisations and labs that work with governments on public sector innovation'. Potential participants were recruited through a variety of methods, including direct approaches to PSI labs that were already known to the researchers, publicising the survey through the supporting research unit's email database, and via sub-national and national government networks. The online survey was promoted via Twitter using the hashtag #psilabs, which is commonly recognised by practitioners within the PSI labs field (Williamson, 2015a), and participating labs were also asked to nominate other units and teams via a snowball sampling approach. A total of 52 PSI labs responded to the survey, including 13 from New Zealand and 39 from Australia (see Table 2). Twenty-six of the PSI labs that participated in the survey were based within various levels of government in Australia and New Zealand, while 23 identified as non-government labs. Three were 'mixed organisations' that operated as a partnership between government and a community sector or non-profit organisation. A map showing the names and geographical locations of the respondents is shown in the Appendix.

Methods

Applying design thinking to policy implies not just wider engagement with citizens and the inclusion of multi-actor networks in policy making but doing so through the

Table 2: Profile of lab participants

	<i>Based within government</i>	<i>Independent from government</i>	<i>Mixed organisations</i>
New Zealand	5	7	1
Australia	21	16	2

mobilisation of specific sets of creative or ‘designerly’ techniques that are not typical of conventional policy approaches, such as mapping user journeys, design ethnography, prototyping and visual thinking (Design Council (UK), 2013; Kimbell, 2016). The methods ‘very’ or ‘quite frequently’ used by survey respondents (see Figure 1), confirms our conceptualisation of PSI labs as design-for-policy entrepreneurs. It illustrates that PSI labs, at least in Australia and New Zealand, make extensive use of methods associated with human-centred design. About two thirds of these PSI labs reported using methods such as interviews or empathy conversations; systems thinking and mapping; citizen and stakeholder engagement; and user testing or prototyping ‘quite’ or ‘very frequently’. More traditional social-scientific methods such as ‘randomised control trials’, ‘survey research’, and ‘analysis of (big) data sets’ were less frequently used by our sample of PSI labs.

Levels and stages

The UK Design Council (2013) distinguishes three different levels at which design thinking may be employed within the public sector – what it calls ‘the public sector design ladder’: (1) design for discrete problems (usually service design projects); (2) design as a capability developed in public sector employees, and (3) design of policy. We include design as a stakeholder-engagement or consultation tool as a fourth area, given the emphasis on this in the literature. This is an alternative to Buchanan’s (1992) ‘four orders of design’, with a focus on the third order of service design (discrete problems) and the fourth order of systems (policy) design. Buchanan’s (1992) first two orders of graphic and object design are excluded here since they are less relevant for policymaking. Figures 2 and 3 show the different levels of the public sector design ladder (discrete problems, capability building, stakeholder engagement/consultation, and design for policy) and policy innovation cycles that PSI labs in Australia and New

Figure 1: Methods used ‘quite’ or ‘very frequently’ by PSI labs (%)

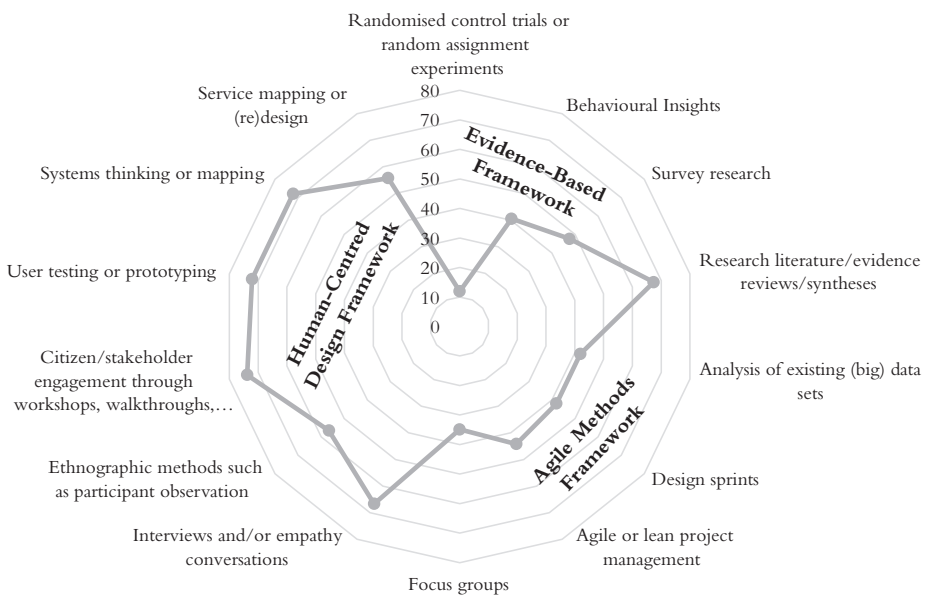
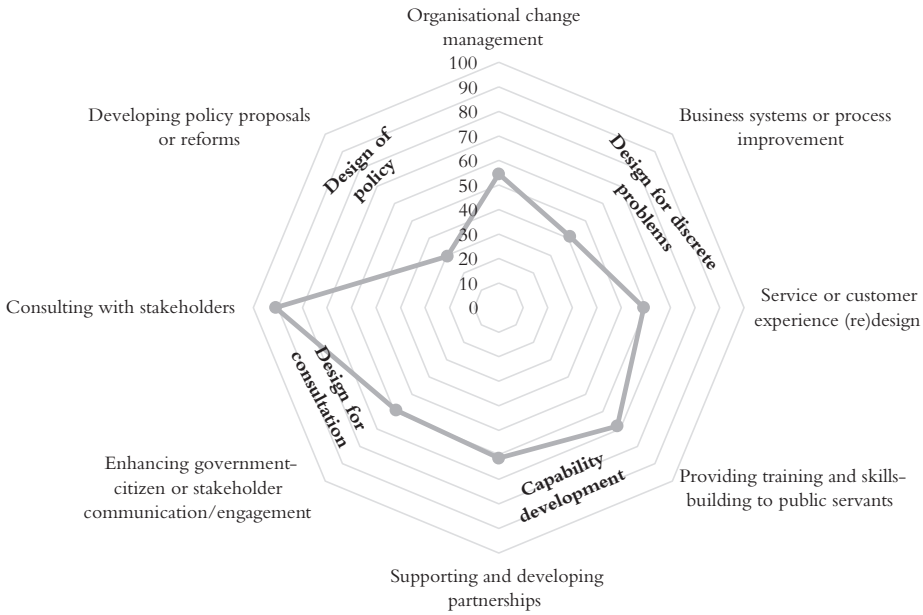


Figure 2: Public sector design levels that PSI labs quite or very frequently engage in (%)



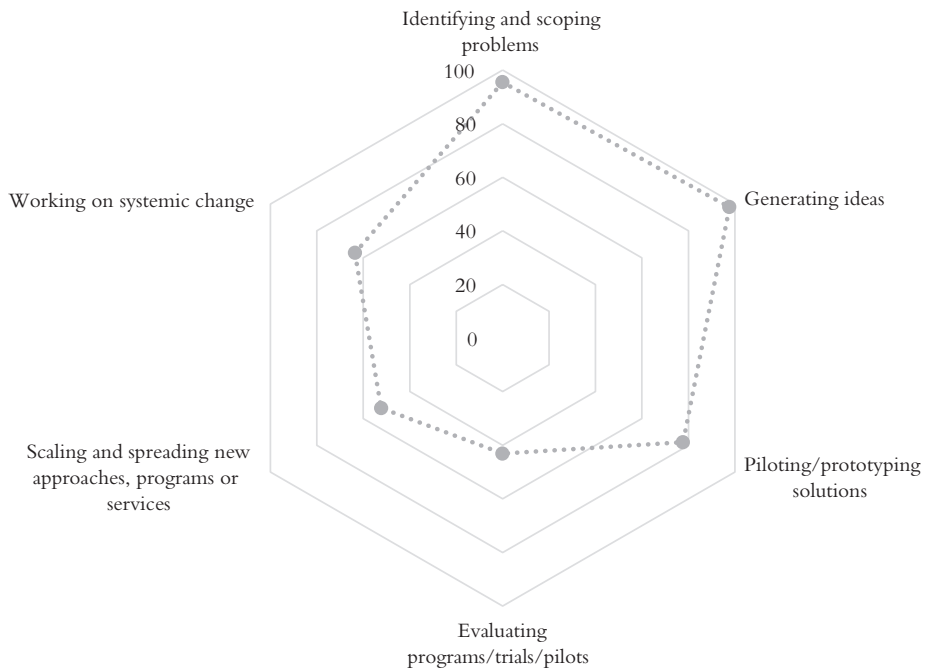
Zealand reported ‘quite’ or ‘very frequently’ working at, as a means for examining their focus in policy processes.

Despite the complexity of contemporary policy challenges featuring highly in accounts of why PSI labs are needed, relatively few (less than 30 per cent) reported that they frequently worked at the design-for-policy level (that is, ‘developing policy proposals and reforms’). Indeed, this was the reform activity, or level of the public sector design ladder, that PSI labs were least likely to report frequently working on in our survey (see Figure 2). This contrasted with activities at the level of design for discrete problems, capability building and consultation. Figure 3 likewise shows that the PSI labs surveyed predominantly concentrate on the earlier stages of the innovation cycle (see Puttick, 2014: 14), namely: identifying/scoping problems and generating ideas, followed by piloting and prototyping solutions. Relatively fewer (less than half) reported frequently working on evaluation or scaling activities, while the proportion that reported working on ‘systemic change’ was also much lower than the proportion that reported being engaged in problem scoping activities or generating ideas – core activities of almost all the surveyed PSI labs.

Relationship to government

One of the common distinctions between PSI labs and other public sector organisations is ‘the power and control relations’ that separate them from the rest of government (Tönurist et al, 2017: 9). This implies that PSI labs act as semi-autonomous structures that operate somewhat outside traditional bureaucratic lines of authority. However, it is also the case that many PSI labs are located formally outside the public sector. This is reflected in the varying degrees of accountability to government reported by the PSI labs surveyed. As already observed, 23 of the

Figure 3: Stages of the innovation cycle that PSI labs quite or very frequently work at (%)

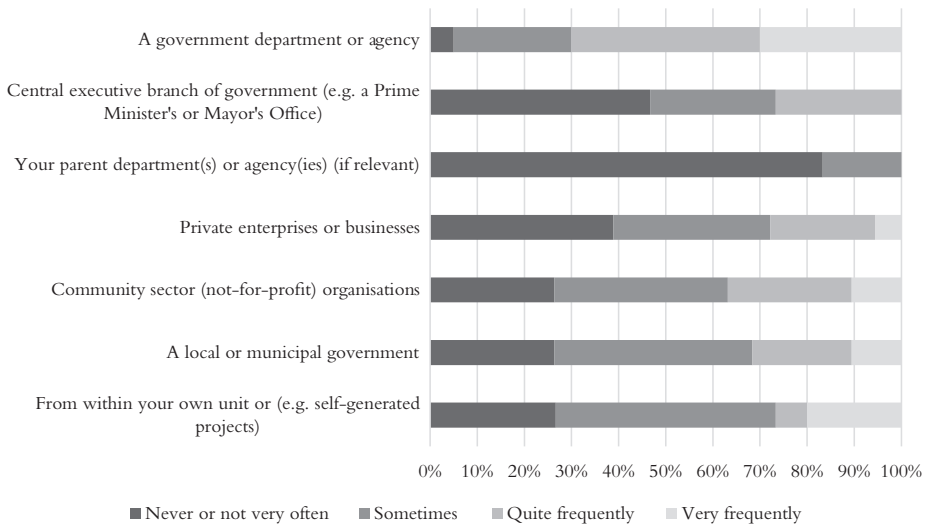


labs surveyed were non-government organisations that operated as either for-profit or non-profit organisations working in partnership with government departments and agencies. While six of these were financially independent from government, eleven reported that more than half of their annual funding was ‘contract funding from government clients’.

This illustrates the dependency of many non-government PSI labs on public funding and suggests that they act as quasi-public consultancies, akin to the ‘hidden public service’ of commissioned consultants identified by [Craft and Howlett \(2013: 194\)](#) in their research on the externalisation of policy advice. This is further supported by how frequently the non-government PSI labs reported working on projects originating from government agencies and departments. As illustrated in [Figure 4](#), 70 per cent indicated that the projects they typically work on either ‘quite’ or ‘very frequently’ originate from a government department or agency, whether at a state or federal level. One in four non-government PSI labs also reported ‘quite frequently’ working on projects originating from the central branches of government.

Of the government-based PSI labs surveyed, these were structurally located at varying levels (local, state, and national government) and in a range of different branches of government, but rarely across agencies or different levels of government. This does not mean that they were not working across levels or agencies; rather, it reflects structural arrangements that were generally with(in) a single department. Despite government-based PSI labs being largely situated within existing government structures, under the auspices of a single parent agency or department, they nevertheless reported a considerable degree of autonomy to determine their work priorities and projects. When asked, ‘Who ultimately determines or

Figure 4: Where projects originate from (non-government PSI labs)



decides which priorities and projects your unit or team works on?', 13 of the government-based PSI units reported that these decisions were made internally, either collectively by the staff or, more typically, by the director or manager of the lab. Only five reported that these decisions were made by the head or executive of the department or agency within which they were situated. This could suggest some disconnection between labs and the policy process. Even if they are located within government, their freedom to innovate and independence to determine their own projects may mean that their work is not directly aligned to current political or policy priorities.

Conclusion: design thinking and policymaking

Our aim in this paper has been to examine what, if anything, is really new about design thinking for policy, how it differs from and challenges other approaches to policymaking, and what impact design thinking might be having on policymaking systems in practice. Analytically, we have argued that design thinking incorporates imagination, creativity and playfulness within the epistemological framework of policymaking in a way that rational-process and even participatory approaches to policymaking have historically struggled to do. In so doing, it recasts policymaking as a more reflexive, uncertain and even ambiguous process compared with the instrumental rationality of policymaking as depicted in policy handbooks or the deliberative tribunal of participatory models. The realisation of this alternative approach to policymaking will depend however on how design thinking is operationalised and drawn upon in practice by governments and other key policy actors. Hence, we used an empirical study of PSI labs in two nations to understand what impact, if any, design thinking might be having on policymaking systems in practice. These rapidly multiplying exemplars of design thinking are being promoted by their supporters as radically changing approaches to solving policy problems, so provide a useful focus.

Our results indicate that while PSI labs are positioned as potential contributors to the policy process and are seen to be providing opportunities for improving policy design, they are so far having minimal impact on policy through changing practices and models for decision-making.

The activities of PSI labs are predominantly concentrated at the front end of the policy and innovation cycles. Similar to their counterparts around the world (McGann et al, 2018b), labs in Australia and New Zealand focus on: scoping and defining problems, generating ideas, and, to a lesser extent, prototyping solutions. Moreover, insofar as PSI labs are involving citizens and other stakeholder networks in these processes of problem definition, ideating and prototyping solutions, our findings suggest that PSI labs are generally working at the level of solving discrete service delivery problems rather than high-level policy development. That is, PSI labs are more likely to work on process and service innovation projects, where design thinking homes in on the experiences of citizens interacting with government services and helps develop more client-focused solutions (Mintrom and Luetjens, 2016) without necessarily involving citizens in deciding what (or how or whether) programmes and services should be delivered. Some of the recent literature (Clarke and Craft, 2018; Peters, 2018) has similarly questioned the likely 'fit' of design thinking with more traditional policy design.

Tönurist and colleagues attribute the front-end focus to PSI labs' small size and partial autonomy from the rest of the public sector, which limits their ability 'to catalyse and push through public sector-wide changes'. They also suggest that this may in fact be dangerous for PSI labs, with labs risking disestablishment when they come too close to the policy process. The more policy-driven their activities are, the more resistance they encounter both inside and outside the public sector. Hence, labs tend to specialise in 'quick experimentations' but lack 'the capabilities and authority' to influence the scaling-up and implementation of solutions (Tönurist et al, 2017: 1473). On the other hand, given that design thinking is very much about spending time creatively addressing the multiple and conflicting statements that go hand in hand with challenging problems (Dorst, 2011), perhaps it is not surprising that this is where the attention of PSI labs has fallen within the policy cycle. Further, some claim that design thinking is not able to provide guidance on how to address politically contentious policymaking activities in practice, and hence it is not surprising that it focuses on service delivery (Clarke and Craft, 2018).

PSI labs face similar challenges to those of other proponents of co-design for policy, which combines elements of the participatory and design thinking approaches delineated above. Co-design is typically applied in small, site-specific groups and in localised settings, which renders the prospects of scaling the results into system-wide responses with multiple delivery channels problematic (Blomkamp, 2018). Clarke and Craft (2018) also claim that there is little evidence that design thinking's methods can be standardised and scaled up to an entire policy sector, or government, over long periods of time. This underscores the potential limitations of participatory and design approaches to policy. While reframing problems and ideating solutions with citizens might be feasible for solving community problems in localised settings, the vocabulary and methodic practices of design may start to crumble when they are extended to system-wide challenges and understanding the complicated linkages between the public, the market and the state (Chen et al, 2016). Moreover, the development and dissemination of design capabilities

both within and by labs remains a real challenge for public sector innovation; these new logics and practices require significant cultural change and capacity building to embed within government (Christiansen, 2016; Malmberg and Holmlid, 2018). As Dorst (2011: 528) notes, one of design thinking's central activities – new frame creation – ‘looks to be a largely informal activity’. The contrast with well understood approaches like surveys is likely to make creative activities appear wildly unproductive and unfocused to cash-strapped governments.

PSI labs may be helping to drive a more participatory and design-oriented approach to public service innovation, but they are still some distance from achieving wider impacts on policymaking. Innovative, collaboratively proposed ideas must still be diffused into the larger policymaking process and ‘sold’ to decision-makers. Design-oriented approaches may remain ‘tools’ for generating policy options rather than forums for designing (and making) policy decisions (Bailey and Lloyd, 2016). That is, design thinking (and the work of PSI labs) may be valued simply as the latest novel way for generating policy relevant knowledge and increasing the pool of ideas available to decision-makers, without realising either greater creativity, or its potential to challenge and reshape policymaking into a more democratic and participatory process (Kimbell, 2016). In addition, design thinking can be seen as presuming that networked models of governance and user-centred approaches are always the best approach (Clarke and Craft, 2018). But institutional and cultural factors will surely continue to influence the voices and forms of knowledge that take precedence in policy systems, and the broader range of policy design options available will (and should) be considered in the context of what is the best fit for a particular policy purpose, against the background of a multi-layered policy context.

From a policy design perspective, design thinking is divorced from institutions in the public sector and without strong links it will remain isolated and have little impact (Peters, 2018). Design thinking's strength in opening up possibilities where there is little received wisdom and not many rules becomes its weakness when other policy tools need to be used to address problems and when institutions are required to make a design work. From the design-for-policy side, there are a substantial set of challenges. It has the potential to benefit governments wanting to address complex and open-ended challenges, but its practices simply might not fit with the constraints and realities of policymaking, which is ultimately a political act.

Opportunities to combine insights from design thinking into policy design could nonetheless help to complement and improve on older forms of designing policy. Perhaps, as others have suggested, improvement in policy design rests on importing some of the best aspects of design thinking into policy design, rather than believing in a wholesale replacement of traditional approaches as a cure-all. Policy design can aim to address all three of the foundations of evidence, discussion and imagination described in this paper. Speaking to power can be based on each of technical expertise, democratic ideals and creativity, if these are treated as complementary rather than mutually exclusive virtues.

In conclusion, we argue that if policymakers learn how to incorporate the insights and practices from design thinking into policy, and designers learn how to deal with the politics of the policy process, there could well be significant benefits for policy design and for everyone who is affected by it. Our examination of the conceptual foundations of design thinking, in order to assess whether it is really

something new for policymaking, and whether it challenges alternative approaches to policymaking, suggests both complementarities and tensions. But in regard to its practical impact, there is little to suggest that it has (as yet) been significant in regard to having an impact on policymaking, although much more research needs to be done before solid claims can be made on this front. Our survey was relatively small and conducted in just two nations. The experiences of PSI labs in Australia and New Zealand may not be representative of their counterparts more globally, although our findings on the methods used by PSI labs, the service-oriented focus of their work, and level of autonomy over the determination of their work priorities resonate with those of international studies (for example, Fuller and Lochard, 2016; Tönurist et al, 2017). Our questions on methods, levels and stages in policy and innovation, and the relationship with government, provide some first indicators of how design thinking is being applied and how it is affecting policymaking. More study of this field, and over a longer time period, is needed before conclusions about design thinking and its impact on policymaking become clearer and stronger.

Acknowledgements

Part of the research upon which this paper is based was funded by a grant from The Australia and New Zealand School of Government.

Conflict of interest

The authors declare that there is no conflict of interest.

References

- Adams, D. (2004) 'Usable knowledge in public policy', *Australian Journal of Public Administration*, 63(1), 29–42. doi: [10.1111/j.1467-8500.2004.00357.x](https://doi.org/10.1111/j.1467-8500.2004.00357.x)
- Althaus, C., Bridgman, P., Davis, G. (2013) *The Australian Policy Handbook* (Crows Nest, NSW: Allen & Unwin).
- Bailey, J., Lloyd, P. (2016) 'The introduction of design to policymaking: Policy Lab and the UK government', *Proceedings of DRS 2016: Design + Research + Society*, eds P. Lloyd, E. Bohemia (Brighton: Design Research Society), pp 3619–3634.
- Bason, C. (2013) 'Discovering co-production by design', *Public and Collaborative: Exploring the Intersections of Design, Social Innovation and Public Policy*, eds E. Manzini, E. Staszowski (New York: DESIS Network), pp viii–xvi.
- Bason, C. (2014) *Design for Policy* (Farnham and Burlington, VT: Routledge).
- Bason, C., Schneider, A. (2014) 'Public design in global perspective: empirical trends', *Design for Policy*, ed. C. Bason (Farnham: Routledge), pp 23–40.
- Björgvinsson, E., Ehn, P., Hillgren, P. -A. (2012) 'Design things and design thinking: Contemporary participatory design challenges', *Design Issues*, 28(3), 101–116.
- Blomkamp, E. (2018) 'The promise of co-design for public policy', *Australian Journal of Public Administration*, 4(77), 729–743. doi: [10.1111/1467-8500.12310](https://doi.org/10.1111/1467-8500.12310)
- Bridgman, P., Davis, G. (2003) 'What use is a policy cycle? Plenty, if the aim is clear', *Australian Journal of Public Administration*, 62(3), 98–102. doi: [10.1046/j.1467-8500.2003.00342.x](https://doi.org/10.1046/j.1467-8500.2003.00342.x)
- Buchanan, R., (1992) 'Wicked problems in design thinking', *Design Issues*, 8(2), 5–21. doi: [10.2307/1511637](https://doi.org/10.2307/1511637)

- Carstensen, H. V., Bason, C. (2012) 'Powering collaborative policy innovation: Can innovation labs help?', *The Innovation Journal*, 17(1), 2–26.
- Centre for Policy Innovation and Public Engagement (2018) *The Rise of Policy Innovation Labs: A Catalog of Policy Innovation Labs Across Canada* (Toronto: Ryerson University).
- Chen, D. -S., Lu-Lin, C., Hummels, C., Koskinen, I. (2016) 'Social design: An introduction', *International Journal of Design*, 10(1), 1–5.
- Christiansen, J. (2016) 'Embedding design: Towards cultural change in government', *Service design impact report: Public sector*, ed. B. Mager (Cologne: Service Design Network), pp 48–59.
- Clarke, A., Craft, J. (2018) 'The twin faces of public sector design', *Governance*, 32(1), 5–21.
- Colebatch, H. K. (2005) 'Policy analysis, policy practice and political science', *Australian Journal of Public Administration*, 64(3), 14–23. doi: [10.1111/j.1467-8500.2005.00448.x](https://doi.org/10.1111/j.1467-8500.2005.00448.x)
- Considine, M. (2012) 'Thinking outside the box? Applying design theory to public policy', *Politics & Policy*, 40(4), 704–724.
- Considine, M., Lewis, J. M. (2003) 'Bureaucracy, network, or enterprise? Comparing models of governance in Australia, Britain, the Netherlands, and New Zealand', *Public Administration Review*, 63(2), 131–140. doi: [10.1111/1540-6210.00274](https://doi.org/10.1111/1540-6210.00274)
- Craft, J., Howlett, M. (2013) 'The dual dynamics of policy advisory systems; The impact of externalization and politicization on policy advice', *Policy and Society*, 32(3), 187–197.
- Design Council (UK) (2013) *Design for Public Good* [Online] (London: Design Council UK) <https://ojs.unbc.ca/index.php/design/article/download/540/479>.
- Dorst, K. (2011) 'The core of 'design thinking' and its application', *Design Studies*, 32(6), 521–532. doi: [10.1016/j.destud.2011.07.006](https://doi.org/10.1016/j.destud.2011.07.006)
- Dryzek, J. S. (2002) 'Policy analysis and planning: From science to argument', *The Argumentative Turn in Policy Analysis and Planning*, eds F. Fischer, J. Forester (Durham, NC: Duke University Press), pp 213–232.
- Fischer, F., Forester, J. (eds) (1993) *The Argumentative Turn in Policy Analysis and Planning* (Durham, NC: Duke University Press).
- Fraussen, B., Halpin, D. (2017) 'Think tanks and strategic policy-making: the contribution of think tanks to policy advisory systems', *Policy Sciences*, 50(1), 105–124. doi: [10.1007/s11077-016-9246-0](https://doi.org/10.1007/s11077-016-9246-0)
- Fuller, M., Lochard, A. (2016) *Public Policy Labs in European Union Member States* (Luxembourg: European Union).
- Fung, A. (2015) 'Putting the public back into governance: the challenges of citizen participation and its future', *Public Administration Review*, 75(4), 513–522. doi: [10.1111/puar.12361](https://doi.org/10.1111/puar.12361)
- Guay, J. (2018) 'How Denmark lost its MindLab: the inside story', *Apolitical* [Online] https://apolitical.co/solution_article/how-denmark-lost-its-mindlab-the-inside-story/.
- Hartley, J. (2005) 'Innovation in governance and public services: past and present', *Public Money & Management*, 25(1), 27–34.
- Hartley, J., Sørensen, E., Torfing, J. (2013) 'Collaborative innovation: a viable alternative to market competition and organizational entrepreneurship', *Public Administration Review*, 73(6), 821–830. doi: [10.1111/puar.12136](https://doi.org/10.1111/puar.12136)
- Head, B. W. (2008) 'Three lenses of evidence-based policy', *Australian Journal of Public Administration*, 67(1), 1–11. doi: [10.1111/j.1467-8500.2007.00564.x](https://doi.org/10.1111/j.1467-8500.2007.00564.x)

- Hekkert, P., Van Dijk, M. (2011) *Vision in Design: A Guidebook for Innovators* (Amsterdam: BIS Publishers).
- Hoppe, R. (1999) 'Policy analysis, science and politics: from 'speaking truth to power' to 'making sense together'', *Science and Public Policy*, 26(3), 201–210. doi: [10.3152/147154399781782482](https://doi.org/10.3152/147154399781782482)
- Howlett, M. (2014) 'From the 'old' to the 'new' policy design: Design thinking beyond markets and collaborative governance', *Policy Sciences*, 47(3), 187–207. doi: [10.1007/s11077-014-9199-0](https://doi.org/10.1007/s11077-014-9199-0)
- Iskander, N. (2018) 'Design thinking is fundamentally conservative and preserves the status quo', *Harvard Business Review*. <https://hbr.org/2018/09/design-thinking-is-fundamentally-conservative-and-preserves-the-status-quo?autocomplete=true>
- John, P. (2014) 'Policy entrepreneurship in UK central government: the behavioural insights team and the use of randomized controlled trials', *Public Policy and Administration*, 29(3), 257–267. doi: [10.1177/0952076713509297](https://doi.org/10.1177/0952076713509297)
- Kimbell, L. (2016) 'Design in the time of policy problems' *Proceedings of DRS 2016: Design + Research + Society*, eds P. Lloyd, E. Bohemia (Brighton: Design Research Society), pp 3605–3618.
- Kolko, J. (2018) 'The divisiveness of design thinking', *Interactions*, 25(3), 28–34. doi: [10.1145/3194313](https://doi.org/10.1145/3194313)
- Lerner, D., Lasswell, H.D., (eds) (1951) *The policy sciences: recent developments in scope and method* (California: Stanford University Press).
- Lewis, J.M. (2003) 'Evidence based policy: a technocratic wish in a political world', *Evidence-based health policy: problems and possibilities*, eds V. Lin and B. Gibson (Melbourne: Oxford University Press), 250–259.
- Lewis, J. M., Ricard, L. M., Klijn, E. H., Figueras, T. Y. (2017) *Innovation in City Governments: Structures, Networks, and Leadership* (New York: Routledge).
- Malmberg, L., Holmlid, S., (2018) 'Learning to design in public sector organisations: a critique towards effectiveness of design integration' *ServDes 2018* (Milan: Linköping University Electronic Press).
- McGann, M., Lewis, J.M., Blomkamp, E. (2018a) 'Mapping public sector innovation units in Australia and New Zealand: 2018 survey report' (Melbourne: The Policy Lab, University of Melbourne).
- McGann, M., Blomkamp, E., Lewis, J.M. (2018b) 'The rise of public sector innovation labs: experiments in design thinking for policy', *Policy Sciences*, 51(3), 249–267.
- Mintrom, M. (1997) 'Policy entrepreneurs and the diffusion of innovation', *American Journal of Political Science*, 41(3), 738–770.
- Mintrom, M., Luetjens, J. (2016) 'Design thinking in policymaking processes: opportunities and challenges', *Australian Journal of Public Administration*, 75(3), 391–402. doi: [10.1111/1467-8500.12211](https://doi.org/10.1111/1467-8500.12211)
- O'Rafferty, S., de Eyto, A., Lewis, H.J. (2016) 'Open practices: lessons from co-design of public services for behaviour change', *Proceedings of DRS 2016: Design + Research + Society*, eds P. Lloyd, E. Bohemia (Brighton: Design Research Society), pp 3573–3590.
- Osborne, S., Brown, L. (2013) 'Introduction: innovation in public services' *Handbook of Innovation in Public Services* [Online], eds S.P. Osborne, L. Brown (Cheltenham: Edward Elgar Publishing), pp 1–11, www.elgaronline.com/view/9781849809740.xml.
- Parsons, W. (2002) 'From muddling through to muddling up: evidence based policy making and the modernisation of British government', *Public Policy and Administration*, 17(3), 43–60. doi: [10.1177/095207670201700304](https://doi.org/10.1177/095207670201700304)

- Peters, B. G. (2018) *Policy Problems and Policy Design* (Cheltenham: Edward Elgar Publishing).
- Price, A. (2015) 'World of labs', *World of Labs* [Online] www.nesta.org.uk/blog/world-labs.
- Puttick, R. (2014) *Innovation Teams and Labs: A Practice Guide* [Online] (London: NESTA) www.nesta.org.uk/publications/innovation-teams-and-labs-practice-guide.
- Renn, O. (2006) 'Participatory processes for designing environmental policies', *Land Use Policy*, 23(1), 34–43. doi: [10.1016/j.landusepol.2004.08.005](https://doi.org/10.1016/j.landusepol.2004.08.005)
- Sanoff, H. (1990) *Participatory Design: Theory & Techniques* (Raleigh, NC: Bookmasters).
- Schuurman, D., Tönurist, P. (2017) 'Innovation in the public sector: exploring the characteristics and potential of living labs and innovation labs', *Technology Innovation Management Review*, 7(1), 7–14. doi: [10.22215/timreview/1045](https://doi.org/10.22215/timreview/1045)
- Sørensen, E., Torfing, J. (2015) 'Enhancing public innovation through collaboration: leadership and new public governance', *New Frontiers in Social Innovation Research* [Online], eds A. Nicholls, J. Simon, M. Gabriel (London: Palgrave Macmillan), pp 145–169, <http://link.springer.com/10.1057/9781137506801>.
- Sørensen, E., Waldorff, S. B. (2014) 'Collaborative policy innovation: problems and potential', *The Innovation Journal*, 19(3), 1.
- Tönurist, P., Kattel, R., Lember, V. (2017) 'Innovation labs in the public sector: what they are and what they do?', *Public Management Review*, 19(10), 1455–1479.
- Torjman, L. (2012) *Labs: Designing the Future* (Ontario: MaRS Discovery District).
- Voorberg, W. H., Bekkers, V. J., Tummers, L. G. (2015) 'A systematic review of co-creation and co-production: embarking on the social innovation journey', *Public Management Review*, 17(9), 1333–1357. doi: [10.1080/14719037.2014.930505](https://doi.org/10.1080/14719037.2014.930505)
- Wagle, U. (2000) 'The policy science of democracy: the issues of methodology and citizen participation', *Policy Sciences*, 33(2), 207–223. doi: [10.1023/A:1026500906034](https://doi.org/10.1023/A:1026500906034)
- Williamson, B. (2015a) 'Governing methods: policy innovation labs, design and data science in the digital governance of education', *Journal of Educational Administration and History*, 47(3), 251–271. doi: [10.1080/00220620.2015.1038693](https://doi.org/10.1080/00220620.2015.1038693)
- Williamson, B. (2015b) *Testing Governance: The Laboratory Lives and Methods of Policy Innovation Labs* [Online], (Stirling: University of Stirling) <https://codeactsineducation.wordpress.com/2015/03/30/testing-government/>.
- Yanow, D. (1996) *How Does a Policy Mean?: Interpreting Policy and Organizational Actions* (Washington, DC: Georgetown University Press).