

# Policy Design: From Technocracy to Complexity, and Beyond

*B. Guy Peters, University of Pittsburgh  
Nenad Rava, OCAD University, Toronto*

Final draft 7, April 19

<b>I. Introduction – Importance of Design</b> .....	2
Summary .....	4
<b>II. The Development of The Concept of Policy Design</b> .....	5
Early Attention to Policy Design.....	5
More Explicit Ideas of Policy Design.....	6
Instruments as the focus for policy design .....	7
Design for Democracy.....	8
Policy design by designers .....	9
Summary .....	10
<b>III. Critique of Current Literature and Approaches</b> .....	12
Summary .....	14
<b>IV. New Design Lenses</b> .....	14
Summary .....	19
<b>V. Conclusion</b> .....	20
References: .....	21

## I. Introduction – Importance of Design

We, like other policy scholars, are interested both in how policies are made, and how they can be made better. In this paper we focus on how concepts of policy design can help us understand those two aspects of policy, but especially the latter. That is, by understanding both design in a more comprehensive sense and some specific aspects of policy design, we can consider ways in which policies can be improved. And, as we will point out below, that consideration of design will also have implications for the process of making and implementing policy.

Too often, there is insufficient collaboration and cross-fertilization between the design and the policy research communities. This can be noticed in the tendency for research from the design community on policy design to lack in-depth understanding of the policy literature, and research on policy design from the public policy community to lack understanding of the more comprehensive design literature. However, and unfortunately, there is often a convergence on treating policy design from a narrow perspective. It is not uncommon to have policy defined as mere decision-making by designers, or to see designers equating administrative innovation (e.g. redesign of administrative procedures or the use nudging in application forms for documents) as a policy design. On the side of policy researchers, we can notice the tendency to consider design primarily in terms of industrial design or engineering, or narrowly in terms of creative problem-solving. The latter is often the fault of certain design practitioners who frame design in terms of the so-called “design thinking<sup>1</sup>”.

Thus, it can be argued that the major challenge for policy design relates to a more comprehensive conceptualization of both policy and design. Although it might be considered commonsensical for policy scholars, it ought to be emphasized that policy cannot be limited to decision-making or implementation (e.g. policy instruments) and that it represents a multi-dimensional mechanism for intervening into society and economy for systemic change. This conceptualization of policy should become the starting point for policy considerations regardless of whether design is argued to be applicable only to certain aspects of policy, or the “whole” of it.

As for design, there is a need to set concepts and understanding right from the onset. Design is certainly not one thing and our intention is not to propose a standard definition. Modern<sup>2</sup> design has always been a very diverse and diverging practice, which has tended to integrate methods from other disciplines as it expanded its scope over the last 2 or more centuries<sup>3</sup>. Some of its modern origins can be found in the practice of graphical design for standardized patterns in textile industry in Britain, but the Bauhaus movement provided some of the main foundations of modern design, as well. After the WWII, design has integrated elements of systems theory and

---

<sup>1</sup> This refers to the practices of “design thinking” as applied by design consultancies such as IDEO or MindLab, which are central in recent attempts to frame policy design by designers. However, there is more to design thinking than creative problem solving, as we will argue later.

<sup>2</sup> The emphasis should be on “modern” because there is certainly a history of design before the industrial revolution, and beyond the so-called Western civilization. In Western civilization design may even be traced back to the Vitruvian Triad (Vitruvius Pollio, 1st century BC) of *firmitas*, *utilitas*, *venustas* (solid, useful, beautiful).

<sup>3</sup> On history of design, see Clark and Broody, 2009

cybernetics, organizational development, and communication theories amongst other. Nevertheless, it was indeed the industrial design in the United States that exerted pivotal influence on what design represents today, at least until design moved into interaction design and the arena of complex social problems. With complexity and further broadening of the scope of design applications, design thinking, research, and practices started to embrace the notion that design is not merely about producing material artefacts, but can be conceived of as organizational design, dialogic design, or systemic design.

Despite its elusiveness there has been considerable literature on design that cuts across its different manifestations and applications. We can trace that more integrative literature back to the complex social systems school (e.g. Churchman, Özbekhan, Ackoff), which has found its more recent manifestation in the notion of systemic design (Jones, 2014) and in the design theory of Nelson and Stolterman (2012). They argue that design is the “practical wisdom” and a way of human inquiry<sup>4</sup> differentiated from science and arts. It is only through design that one actively seeks to introduce change - with design being “the ability to imagine ‘that-which-does-not-exist’ to make it appear in concrete form as a new purposeful addition to the real world”. In those terms, it becomes clearer how design becomes central to a wide range of forward-looking social interventions, notably public policy. Moreover, this approach also broadens the notion of design beyond methods or thinking, and towards design attitudes and competences that are not limited to formally trained designers<sup>5</sup>. Most importantly, this emphasizes that design is not just about problem solving, but deals with approximating idealized and/or particular real-life situations in order to create structure, meaning and functionality.

Design as a forward-looking concept is reflected throughout the design literature. According to the multi-disciplinary work edited by Boland and Collopy (2004), design is the “giving of form to an idea” for shaping artifacts and events that create “more desirable futures”. Again, design is not about methods or thinking, but the design attitude, which is different from decision-making or problem-solving because design represents the “relentless search for openness” and the need to expand the “solution space”. We had known that also from Simon (1996) who defined design as “the human endeavour of converting actual situations into preferred ones”. Simon was not the only person<sup>6</sup> who spanned both policy and design, but we should recognize that “wicked problems” are as much design problems as they are policy ones. While Rittel and Webber were both designers and policy practitioners, it was the separation between policy and design that led to the situation in which designers and policy people appropriate “wicked problems”<sup>7</sup> for design or policy, respectively, without often being aware of the shared roots of this concept.

What brings policy and design closer together is also the notion of judgement. Despite recent technocratic tendencies in both domains, there is a solid argument for considering both policy and design in terms of “value judgments” and “norm-seeking” activities (Özbekhan, 1968). When we compare design literature on judgments (e.g. Nelson and Stolterman, 2012) with that in the

---

<sup>4</sup> This is also the 1st, the oldest, tradition of human inquiry because it represents the way of human inquiry from most ancient times. The argument leads to the proposition that fire was not discovered but designed: while it might have been found (discovered) in nature, it was the use of fire for human purposes that required design.

<sup>5</sup> Simon proposed that everyone “who devises courses of action aimed at changing existing situations into preferred ones” is a designer. While everyone does have the potential to design (as everyone has for science and arts), designing still requires development of particular abilities and attitudes, whether or not those are part of professional training.

<sup>6</sup> For some early work, see Özbekhan (1968) or Schön (1984).

<sup>7</sup> On “wicked problems” in design, see Buchanan (1994).

policy domain (e.g. Vickers, 1995) we can see how similar, if not identical, are the two approaches.

With regard to the approach to policy design presented here, the major challenge is relates to the issue of intentionality. Both policy and design are often assumed to represent a purely intentional process that leads, mostly linearly, towards accomplishment of predetermined outcomes. However, as we will argue, both policy and design are better understood in terms of bounded rationality and iteration by which the outcomes and the process constantly interact changing each other, thus creating what John Chris Jones identified as “self-organizing system”. Our argument will be based on the insight that policy results tend to be considered with regard to retroactive causality, while the policy process almost always incorporates “muddling-through” - which is the necessity of dealing with complex social problems. The different lenses for design that we present will show that design often uses “compass” (desiderata) rather than specific goals, i.e. it approximates the ideal to the actual, and does not always focus on mere problem-solving. Taking these propositions into consideration, we seek to arrive to a different concept of policy design that can reconcile, amongst other issues, the challenge of intentionality.

### Summary

The above discussion indicates that both the design field and the policy field are missing opportunities by not being in greater dialogue with one another. These two domains of research and practice are in reality closely linked but have developed in isolation from one another. This is particularly regrettable because the insights from each domain can inform the other. And perhaps even more importantly if the two areas engaged in a more integrative discussion they could generate greater benefits for society and for academic research. The remainder of this paper will be an attempt to demonstrate how the policy design literature in particular has not benefitted adequately from the insights of design, and what might be done to rectify that problem.

## II. The Development of The Concept of Policy Design

As noted above, one of the fundamental characteristics of public policy is that it is intentional and is meant to produce some change in the economy and society. That said, many of the models of policymaking reflect an almost accidental character, with the convergence of multiple streams, or the acceptance of bounded rationality in choices rather than more comprehensive analysis. While almost all research in the social sciences is retrospective and explanatory, policy should be prospective and experimental. That does not mean that policy should ignore the existing knowledge base in the sciences – social or natural – but only that the purpose of much of policy analysis is not to develop new knowledge but rather to use existing information (and to develop new information when necessary) in order to develop solutions to real problems.

Given the fundamental nature of policy analysis it is rather surprising that there has not been greater attention to issues of design and purposive intervention into the economy and society. While there may be many reasons for that absence of focus on design, the dominant one appears to be that much of the study of public policy was subsumed under conventional social science. This meant that many interesting and important models for explaining policy choices have been developed (see Peters and Zittoun, 2016), but there has been less attention to the purposive intervention into the environment of the policymaking system<sup>8</sup>.

Here we should perhaps differentiate between policy analysis as more prospective thinking intended to shape future policy from policy studies that tend to be more explanatory and after-the-fact. While we can use design ideas to understand what has happened ex post, but a good deal of the importance of design thinking resides in its utility for more prospective considerations of new policies. But, that prospective thinking about design must always be informed by the knowledge of what factors can and do explain policy choices.

### Early Attention to Policy Design

Harold Lasswell is usually considered the father of the study of public policy, and he to a great degree straddled the gap between looking at policy from an explanatory perspective and focusing on purposive interventions. On the one hand, Lasswell developed perhaps the earliest model of the decision-making process for policymaking (1951), and demonstrated how that model could be used to explain the policy choices being made. On the other hand, however, he was concerned with design issues such as creating policy processes, and policies, that would work within the constraints of real-world political systems.

The classic book by Robert Dahl and Charles Lindblom on *Politics, Economics and Welfare* (1953) was another early attempt to understand the possibilities of government interventions into the economy and society. While unfortunately largely forgotten by contemporary policy scholars, this book provided a detailed and insightful look into basic processes of governing – most

---

<sup>8</sup> At least one of the authors of this paper admits to going back and forth between the explanatory and the design modes of thinking about policy rather blithely.

importantly making public policy. While what we are here discussing as design was considered more in terms of as planning, this volume provides the student of design ways of understanding the process at a very fundamental level.

In another of the classic works on public policy, Ted Lowi distinguished between policies that shaped, or at least attempted to shape, the behaviour of individuals directly as opposed to those that attempted to shape the environment of behaviour. Lowi's typology has to some extent bedevilled subsequent generations of policy scholars who have attempted to operationalize the concepts involved. But his recognition of the importance of affecting the environment of action can be seen as foreshadowing some of the developments in systems thinking about design that we discuss below.

And finally, although not explicitly talking about policy design, another major figure in the development of public policy – at least in the United States – Aaron Wildavsky was also concerned with how to make effective interventions into the economy and society (see Peters, 2017). Although Wildavsky was in many ways sceptical about the capacity of governments to design policies and to make such effective interventions, his perspective on policy did point to the importance of design and planning issues in the policy process. Wildavsky also helped initiate an emphasis on implementation in public policy, pointing out the need to think about delivering programs as well as coming up with elaborate intellectual templates for optimal interventions (Pressman and Wildavsky, 1974).

While Lasswell and especially Wildavsky did express substantial scepticism about the capacity to design effective interventions into the surrounding society, other scholars were expressing even more profound concerns, based largely on the nature of the problems that they argued were confronted governments. The idea that governments had already solved the simple, or tame, problems and were now faced with “wicked problems” emerged in the 1960s and 1970s<sup>9</sup> (Churchman, 1967; Rittel and Webber, 1973; on unstructured problems see Simon, 1971).

Some of the literature on wicked problems almost denied the capacity for design, emphasizing the difficulty in even identifying the nature of a difficult problem, much less its causes, but some (including Buchanan, 1992) clearly relate design to complexity. As we will discuss below, much of the design literature focusing on complex social systems argues that design thinking is most useful and indeed most necessary, when the problems are poorly structured and “wicked”.

Finally, although less directly linked to policy design *per se* Sir Geoffrey Vickers (1995) was interested in the way in which individuals and organizations learned and used information to make policies. This interest spanned the public and the private sectors. His thinking about policy interventions was also based on systems concepts, so that thinking about policy was not so much in terms of discrete issues but could be better conducted when thinking in broader terms. This thinking therefore could serve as the foundation for some of the more contemporary considerations about design in general, and policy design in particular.

### More Explicit Ideas of Policy Design

The concept of policy design began to be taken up more explicitly during the 1980s by a group of

---

<sup>9</sup>Perhaps because of the centrality of policy issues such as climate change there has been a revival of interest in wicked problems in the early 21<sup>st</sup> Century. See Head and Alford (2014).

scholars who were interested in confronting the demands for formulating public policies in a more conscious manner. Beginning with John Dryzek (1983) and then followed closely by Linder and Peters (1984; 1991) policy scholars began to consider what elements would be necessary for an effective design, especially as governments began to they were confronting complex and “wicked” problems.

The ideas of design being developed in this literature were, in the context of more contemporary developments, rather technocratic. For example, Linder and Peters (1984) argued that three elements were necessary for design: a model of causation, a model of instrumentation, and a model of evaluation. In other words, to design the designer must understand why the observed problem is there<sup>10</sup>, Further, that designer must understand the array of instruments available of implementing the proposed solution to the problem, and finally must have in mind the values that s/he is pursuing when making the intervention.

There are two reasons why we would characterize these approaches to design as technocratic. The first reason is that although the individuals engaged in these discussions were political scientists, much of the discussion of policy design was almost apolitical. The selection of ideas about causation and about instruments was to be done primarily on technical grounds, rather than as a means of reflecting political values or to build coalitions necessary for adopting programs. And likewise, much of the discussion of evaluation was in the terms of more technical forms of evaluation (e.g, cost-benefit analysis) rather than in terms of significant political or ethical values. That said, Bobrow and Dryzek (1987) did link policy design directly to a variety of theoretical approaches to politics, demonstrating the crucial linkages between policy and political theory (see also discussion of Schneider and Ingram below).

The second way in which these approaches to design were technocratic was that they adopted a conception of design more allied to engineering than to other ways of thinking about design. This thinking about policy design tended to remove the problem from its social environment and assume that if the right “gizmo” were created then it would be solved. Thus, there was a search for an “algorithm” that could map instrument choices into the nature of the problem and produce a solution consistent with a set of values determined *ex ante*. This thinking tended to ignore the extent to which policy problems are embedded in complex social systems, meaning that a design that does not take into consideration that environment will not assess adequately the true nature of the problem and the possible effects of an intervention. This rather narrow perspective can be seen as contributing to the large number of unintended consequences resulting from policy interventions (Sieber, 1980; Hood, 2000).<sup>11</sup>

### Instruments as the focus for policy design

While the design approaches mentioned above were much interested in instrument selection as one component of the overall design for a policy, a subsequent strand of thinking about policy design focused on instruments as the central element of design. Perhaps the best examples of this manner of thinking about design can be seen in the work of Michael Howlett (2011), although it builds on a very large volume of “tools” literature in public administration and policy that has

---

<sup>10</sup>Of course, there may be alternative ideas about the causation of any particular problem, and those alternative models of causation will in turn be related to the proposed pattern of intervention (see Payan, 2006)

<sup>11</sup>These critiques may appear somewhat harsh but as one of the present authors were involved in the creation of this literature it should be allowed.

sought to identify and classify the means through which governments attempt to influence actors in the economy and society (see, for example, Hood, 1976; Bemelmans-Videc, Rist and Vedung 1998).

The literature that has dealt with instruments as the central element of policy design has been different from the remainder of the instruments literature in subtle yet important ways. The most important difference has been that these writings are less concerned with the technical characteristics of instruments than with their place in governance. Further, the emphasis has been less on individual instruments than on the possibility of mixes and hybrids that can provide more effective forms of steering. Finally, there has been some increased emphasis on the political impact of instruments (see Peters, 2002).

While it can be argued that policy formulation and instrument selection are perhaps the heart of any design process (see Jordan and Turnpenny, 2015) attempting to understand policy design without understanding the nature of problems or the values involved appears to be shooting in the dark. The wicked problems literature provides one means of understanding policy problems, but that does not address the variance in the nature of more ordinary problems (Hoornbeek and Peters, 2017). Further, accepting policy problems as givens does not take into account adequately the extent to which policy problems are political constructions rather than some objective condition that can be addressed by the proper instrument.

In her criticism of limiting policy design to design of policy implementation Junginger (2013) proposes that design should encompass all aspects of the policy process. She starts with the approach in which design has no role until the implementation of policy begins, which is the reflection of policy design based on design of policy instruments. This approach, according to her, limits design to merely “an isolated, in-itself-closed part of problem solving”. Her main argument is that neither policy-making nor policy implementation have been adequately addressed in design terms by either designers or policy makers. She extends design to the whole of the policy process and considers policy both as a design problem and as a design activity. Policy-making and policy implementation then represent “fundamental and connected design problems” and not “disconnected design activities”. It further leads her to posit that design of policy implementation does not begin at the implementation stage, but starts already in the course of policy-making when criteria and the framework for products and services are established. The approach by Junginger is certainly a welcoming addition to policy design considerations. Nevertheless, her work represents merely a starting point in understanding and operationalizing policy design, which is the predicament that can be addressed only by designers and policy studies working more closely together.

### Design for Democracy

Yet another approach to policy design focused on the capacity to design in a democratic manner. Anne Schneider and Helen Ingram (1997; Ingram, 2016) were concerned with how governments could promote democracy through policy design. They emphasized that democracy should be considered important in the process of making policy as well as the outcomes of that process. Can governments design policies that produce greater equality among their citizens and facilitate a higher quality of life for all? That question has been important for the existence of democratic regimes, but is perhaps now especially important given the rapid increases of inequality (Sitaraman, 2017).

Although Schneider and Ingram's work on designing policy for democracy is the most explicit in its adoption of clear normative standards for design (but see also de Leon, 1997), other students of policy design, and public policy more generally, have also sought to incorporate normative issues into their design frameworks. The clearest example of this linkage of normative issues with design involved several strands of research such as that at the Hastings Center that sought to understand the ethical issues involved in policy, and especially health policy.

Most of the work that links policy design and democracy focuses on the effects of policy on the population, especially vulnerable populations. The reverse question can also be asked, and some scholars have attempted to understand how policy choices influence citizen participation, and the efficacy of citizens in dealing with government (Mettler 2004; Mettler and Soss, 1999). At the most basic level then, policies may be designed in ways, if perhaps unwittingly that create greater legitimacy for governments and greater loyalty among citizens (Mettler, 2005).

While the approach to policy design with the instrument focus deals with that dimension of design, this strand of thinking about design focuses on the values that are being pursued through the design. This emphasis on democratic design should, however, be seen in conjunction with some of the other work of Schneider and Ingram (1990; 1997) that attempts to develop more effective means of targeting interventions and also attempts to build behavioural assumptions into the study of policy instruments.

Özbekhan (1968) criticized the conventional practice<sup>12</sup> that considers policy as a regulative, rather than normative, activity. He argued that policy-making is not about goals, but a "norm-seeking" function of a system<sup>13</sup>. Such "norm-seeking" is focused on definition and selection of appropriate norms by applying value judgment (rather than valuation) to recombine existing norms into new configurations. This "norm-seeking" is focused on normative ("willed") futures, and not the considerations of feasibility or efficiency. Such policy-making provides the purpose ("meaning", direction) to "goal-setting" (strategy) which further provides "purpose" to operations. Feasibility and efficiency are certainly present, but they come later in the process and from the "lower" functions of the system, which receive the "content" from strategy and policy-making. When operations take over strategy and policy-making then the "creeping up of the administrative and regulatory outlooks" takes place. The operational becomes formative of policy, instead of the opposite, and the operational focus (what can be done) replaces strategic function (what will be done) and policy-making (what ought to be done). Hence, when technocratic considerations capture the whole system policy loses its essential normative role, and the whole intervention tends to extrapolate present into the future and sustain the status quo.

### Policy design by designers

Design research on policy design has so far been very limited<sup>14</sup>. If we exclude some of the earlier authors, which are not necessarily considered to represent mainstream design<sup>15</sup> - and go beyond Rittel and Webber - the considerations of policy design in design is very recent. Most of what has been written were conference papers or manuals produced by design consultancies, and these

---

<sup>12</sup> Interestingly, he noticed that in 1960s, decades before the now popular "deliverology" and similar frameworks.

<sup>13</sup> He proposes three main functions of any system: policy making (norm-seeking, normative), strategic planning (goal-setting, executive), and operations and regulation (implementation, interface with the environment).

<sup>14</sup> See in Rava, 2017

<sup>15</sup> These include, amongst other Özbekhan, Ackoff, Schoen, Banathy.

rarely include a more in-depth approach to policy, and very few (if any) references to policy literature.

We can find considerations of complexity and social problem orientation in design in several works, starting with Buchanan (1992) on wicked problems in design and the extending design beyond symbols and material artefacts. There are certainly elements of policy in the systemic design approach (Jones, 2014), but most of the design literature relates to the broader public sector and is limited to administrative innovation and service delivery (e.g. the usability approach in design). Even when policy design is referred to in such literature (McMullin, 2012) it is mostly considered in terms of the contribution of design to decision-making<sup>16</sup>.

Beside Junginger mentioned earlier, one notable exception is Carlsson (2009) who considered public policy as a form of design<sup>17</sup>. When asking how to make a policy when there are many possible and unknown outcomes, and dealing with social complexity, path-dependency and unpredictability - his response is to use design. It should be noted that his approach to design goes beyond problem-solving and “design thinking”. Thus, he argued that design helps expand the policy space through addition of new capabilities, which can be related to the argument of Schneider and Ingram (1997) that design helps avoid the “choice between grand ideologies”. He also considered design relevant for policy due to progressive integration and structuring of the design spaces through the “coevolution” of its various elements, and for helping the accumulation of application-specific know-how linked to the evolutionary trajectories of particular artifacts.

The practice of policy design has been most evident in various design labs. And the one prominent book that does refer to policy design is mostly focusing on that practice. In the volume edited by Bason (2014), the emphasis is put on the proliferation of design labs as “public sector innovation spaces”, and the way in which these apply design. Most of the methods are based on “design thinking” and “human-centered design” which derive mostly from product and service design traditions<sup>18</sup>. The emphasis is on digital technology, design workshops, prototyping, and innovation. Such creative problem-solving frameworks should be considered downstream (strange-making) rather than upstream (sensemaking) design. Thus, it is to be expected that they are effective for downstream aspects of policy (e.g. designing regulations or services), but cannot address the more upstream ones (e.g. agenda setting or problem formulation). For the latter, other design approaches are required, most of which still are not widely present in design labs. At the end, Bason remain cautious about “policy design<sup>19</sup>” and he does emphasize the need for development of a new kind of “sense-making” public manager, while emphasizing the need for cultural change in public administration towards that of design.

## Summary

The overview of the literature on policy design from both policy and design perspective indicates that some core elements of policy design remain evasive. The early literature in policy design provided a major service by getting policy scholars to think more clearly in design terms. Rather than just considering policy as a dependent variable for a policy process – by no means an

---

<sup>16</sup> While McMullin starts well by underlying that designers should go beyond simplification of paperwork or service improvements, his conclusion is that the power design brings to policy is in “making the right decision, faster”.

<sup>17</sup> Even in this case, the focus is limited because he considered policy design only for technological innovation policy.

<sup>18</sup> Most of the trend has been created by design consultancies such as IDEO or MindLab, and the developments regarding public service design (e.g. UK) or social innovation (e.g. Canada).

<sup>19</sup> It is telling that the book’s title is “Design for policy” and not “policy design”.

unimportant concern, but perhaps somewhat narrow – this literature began to raise questions about intentionality in the creation of policies. This focus on intentional, and integrated, policy choices then makes the policy maker a participant in the process rather than just the individual understanding the political process. However, in more recent literature both policy and design tended to be considered in narrower terms: policy as decision-making or policy instruments, and design as linear and optimized problem-solving. Moreover, the increased interest in policy design might be related more to the emerging practices of administrative innovation and design labs, than to a more comprehensive policy design orientation.

### III. Critique of Current Literature and Approaches

The discussion to this point has been cautiously positive about the concept of policy design, and the capacity to address problems in the economy and society through actions from the public sector. The optimism about design has some justification, at least as an academic enterprise, but we should also have substantial scepticism about the policy design literature as it has developed. This scepticism will be discussed here primarily in terms of the academic debates on policy design, but many of the same points have substantial relevance for the practice of policy design.

The first point that should be made about this policy design literature is that most policy design thinking has been focused on extremely narrow topics. That is, this literature has tended to focus on an individual policy problem, often defined in a very constrained manner. Thus, rather than thinking about alternatives for urban transport, a good deal of the policy design literature focuses on things such as possible means to expedite automobile traffic movement<sup>20</sup>. While those problems are not trivial, especially for individuals caught in traffic jams, thinking about policy alternatives could benefit substantially from broader conceptualization of the problems. This approach has dominated most of the literature on design of policy instruments, which often limit policy design to implementation, or in some cases even merely to administrative innovation. The need for “holistic governance” (6, et al., 2002) appears to have been expressed in administrative terms more clearly than in policy terms.

Second, and related, is the tendency in much of the policy design literature to think about the problems primarily in a retrospective manner. That is, the assumption is that problems emerge from social and economic processes and after the problems become sufficiently vexing to citizens and/or actors in the public sector, something will be done about them. The assumption appears to be that designing to a great extent involves governments are sitting around waiting for something adverse to happen. That assumption is perhaps stated somewhat too harsh, perhaps, but governments are generally responding to prior events, and often long strings of failures, rather than anticipating policy needs.

This is closely related to the trend towards “solutionism” - found in both policy and in design - in which the expectation is to “solve wicked problem”. Wicked problems are wicked, amongst other, because they cannot be “solved” due to at least two of the ten principles of Rittel and Webber: a) there is no definitive formulation of a wicked problem, and b) wicked problems have no stopping rule. Moreover, the framing of the problem is closely dependent on the expected solution, as much as the devising of a solution is dependent on the understanding of the problem (with the instruments being an intervening variable). This feeds back to the misinterpretation of design when it is portrayed as a toolkit of methods for solving problems, for the detriment of its more genuine purpose in “satisficing” for addressing the root-causes and “dissolving” the problematique.

A good deal of the literature on policy design is defined rather narrowly in temporal terms (see

---

<sup>20</sup> For a classic example see Braybrooke (1974)

Jacobs, 2011). That is, there are policy problems now that appear difficult, but design should also be considering the problems that will arise, and which may be anticipated<sup>21</sup>. There are means of dealing with foresight (rather than conventional forecasting), and especially strategic foresight, that have been developed for the business community, but which also can be applied to the public sector (Kuosa, 2012). In this way of thinking about policy design, the imperatives of design begin to mingle with those of futures thinking. Given that foresight and strategic planning has been generally devalued in contemporary governments, it is important to see how some sense of dealing with alternative futures can become more prominent into the public sector, and specifically for policy.

Another of the problems associated with much of the policy design literature is that it tends to assume a *tabula rasa* for the designer. Although we noted the importance of policy redesign above, the design discussion is often addressed at a problem that has been identified, with the object of the exercise to develop a response (or THE response) to this perceived problem. The difficulty that we find in this discussion is that most policy-making is actually replacing existing policies, or at least intervening into an already crowded policy space (Hogwood and Peters, 1984; Carter, 2012; Schaffrin, Sewerin and Seubert, 2014). As discussed above concerning the narrowness of thinking in policy design, the failure to integrate a new policy with the existing array of policies can only complicate the implementation of a “new” program and reduce its probability of success. Making this connection among policies is more aligned with thinking about policy integration than policy coordination (Jordan and Lenschow, 2010). One of the opportunities to address this issue is the concept of “throwness” in design (Boland and Collopy, 2004) which has been practiced by designers in many design disciplines, but is yet to be integrated in the approach of design labs.

Much of the policy design literature is also focused heavily on instruments (see for example, Howlett, Mukherjee and Woo, 2015). While we spend some time discussing policy instruments design there is a more comprehensive process that involves significantly greater content than just instruments. Especially when we begin to think about alternatives to conventional forms of design, the usual panoply of instruments can not address adequately the range of complex and critical policy problems. Further, not all of design is simply about selecting the best instrument to match a particular task, and that task typically being narrowly defined. But even thinking about hybrid instruments or instrument mixes may be insufficient to address the demands for effective design.

Finally, the conventional model of policy design tends to function in discrete frames, rather than in more continuous time frames. This is associated with the tendency to think of design in narrow terms, both substantively and temporally. On the one hand we can think of designing as making an intervention then taking the time to assess the results and then perhaps engage in a redesign. But we should perhaps also consider policy design a more continuous process in which governments continue to learn and adapt. The restrictions of the legislative process make this continuous form of design more difficult, but even if the legislation can not be prepared then at least the cogitation necessary for subsequent rounds of decision-making can take place.

In short, the existing policy design literature has numerous strengths, and the general idea of thinking about policy in design terms is important, but there are also weaknesses that limit the

---

<sup>21</sup> That profound social philosopher Yogi Berra was said presciently that “The future hasn’t happened yet”. This is certainly true, but at the same time good policymaking must consider the future and attempt to anticipate those problems that may arise, and which in some instances may be avoided with adequate foresight.

capacity to deal with complex social problems. For the more straightforward problems facing governments the narrow and linear conceptions of design may be appropriate, but for the looming “Continuous Critical Problems” (Özbekhan, 1970) this approach appear inadequate, and may be, in William Dunn’s characterization, solving the wrong problem.

That more prospective conception of design is difficult politically, and also involves real risks in policy and fiscal terms. But especially when attempting to cope with the emerging “wicked” problems now confronting the public sector will require that sort of prospective design, and greater attention to more comprehensive conceptions of design, in contrast to the more technocratic conceptions that have dominated the literature, and arguably also dominated practice in the public sector.

Finally, recent design additions to policy practice (in design labs or elsewhere) have mostly been related to a limited notion of “design thinking<sup>22</sup>”, which presents such thinking (and actually, design overall) as downstream, creative problem solving. It does offer effective tools to deal with administrative and service innovation, as well as to design policy instruments, but it is misaligned with a more upstream (e.g. agenda setting and problem framing) and even more so with an integrated approach to policy design. Such “design thinking” further reinforces the dangers of addressing the “wrong problem” (as referred to Dunn above), or in the words of design scholar Donald Norman<sup>23</sup>: it can help climb a hill, but it might be a wrong hill, or there might be a whole mountain range to conquer. Therefore, it is not only that we might need to re-embrace a more integrated notion of policy in the context of dealing with social wickedness, but we would need to better understand the essence of design in order to have a more meaningful concept of policy design in the first place.

## Summary

Following on the overview of literature, we presented the main problems for further development of policy design. The main point we made is that both design and policy are being represented in a narrow terms. In policy this related to the dominant focus on instruments, and in design on the so-called “design thinking” - neither of which can deal with more upstream policy predicaments. This is accompanied by the tendency towards “solutionism” and thinking in terms of problems in retrospective manner. The consideration in literature related to narrow temporal terms do not sufficiently integrate neither the need adaptability and redesign, nor a more substantive forward-looking and foresight dimensions. We also raise the issue of developing policy from tabula rasa, and then present the design notion of “throwness” that might address respective challenges in policy design.

## IV. New<sup>24</sup> Design Lenses

---

<sup>22</sup> Inverted commas are used to denote that this refers to a very specific approach to design thinking, and is not representative of what design is. There are many other ways to understand and conceptualize design thinking, some of which presented already by John Chris Jones (1992).

<sup>23</sup> From the key-note at the Relating System Thinking to Design 4 (Banff, 2015)

<sup>24</sup> These are not necessarily “new” ideas, as some of the literature used here goes back decades, including to some

Notwithstanding certain tendencies to refer to policy design merely in terms of decision-making and policy implementation, the challenge for a valid and meaningful concept of policy design is more on the side of design than policy. If there is to be progress on a more comprehensive approach to policy design, we need new lenses and that starts with conceptualization of design. This requires broadening the scope of design to include upstream methods of sense-making (in addition to the downstream sense-making) and to go beyond the design of material artefacts. Nevertheless, introducing a wider spectrum of design methods and improving processes will not address the predicaments of policy design. Policy design will need to become less about methods and processes and more about what is known as designerly culture (attitudes, abilities, values), and the systemic design thinking and practices.

We should clarify some of the usual misconceptions. The first of those is the commonsensical reference to “by design”, which entails that design is intentional. Moreover, if design is intentional, it should most probably be linear (even when muddling through) and following a pre-mediated sequence of steps towards a given goal. Hence, it would imply that design cannot effectively deal with complexity. This logic might be correct only for designing material artefacts in industrial design or engineering, but even then it is not the whole story.

The argument we are making should lead to considering design (as referred to Carlsson earlier) the most effective approach to dealing with complexity. Such design lenses are based on Simon’s “bounded rationality” and imply “norm-seeking” (Özbekhan) rather than a goal-accomplishing endeavour. Finally, the central concept in design - that of iteration - should falsify the very idea of linearity in design. This is not to say that all design deals with complexity, is based on “bounded rationality”, and applies typical iteration - but the argument is that design is most of the time mostly about those. It is in design that we find the ability and/or inclination to remain in the space of ambiguity and indeterminacy, with the constant interaction (a “balancing act”) between the outcome and the process<sup>25</sup>.

As argued by a prominent Canadian designer Helen Kerr, “design works best when knowledge is scarce”. In design, the intention is to enlarge the problem/design space in the very first step, even when some knowledge pre-exist. If the complexity is not sufficient to rendering novel solutions (and designers would assume it never is), designers “increase” the complexity through divergence (Jones, 1992) and by increasing the density (the requisite variety) of the “mess”. This is similar to the concept of “sweeping-in” in the theory of human inquiry of Churchman, and can be related to the “garbage can” in policy. The process continues until the point of transformation or emergence, when the process starts to converge<sup>26</sup> towards the final outcome through prototyping. This is not a linear process, because each of these stages are iterated until the satisficing (“good enough”) result is reached. As in wicked problems, design has no stopping rule, and the end of the process

---

of the foundation work on modern design. However, the lenses used to consider those ideas in current contexts are somewhat new.

<sup>25</sup> This is contrasted by Nelson and Stolterman to science (focusing on the process) and arts (focusing on the outcome). While sciences seeks the “truth” (“as is”) and art focuses on novelty (“what might be”), it is only in design that process towards an outcome and the outcome are considered in interactive terms. It is also one of the reasons why science and art can support, but cannot replace design.

<sup>26</sup> One of the first to frame design as divergence-transformation-emergence was John Chris Jones. Today, this is reflected in the commonly used “design diamond”, which is sometimes represented as double (one for problem framing and another for problem solving), or even triple diamond.

is mostly determined by practical circumstances<sup>27</sup>. The only such rule that design applies is the two “letting-go” moments (Nelson and Stolterman, 2014): a) the letting go of previous assumptions and expectations at the start of the process when diverging starts, and b) the letting go of the intention to seek ever better solution at the end of the process when convergence ends.

Design iteration is different from a phased, linear approach because it requires the whole process to be repeated from the beginning. In a phased approach, first phase is followed by second, etc. until the planned process finishes. In iteration, the whole series of phases is conducted several times, producing prototypes<sup>28</sup> (low fidelity artefacts) that are tested before moving back to the start. Hence, it implies that design is a process in which we dwell most of the time in the so-called “liquid” mindset (Boland and Collopy, 2004). This is the space of ambiguity, uncertainty, and indeterminacy and cannot be sustained effectively without having particular design abilities that allow one to deal with the unavoidable “agony” of design and continuously nurture the possibilities for emergent outcomes. Thus, designers engage in continuous “meandering and layering” in the course of their quest for approximating the ideal to the actual, while seeking to avoid “early closure”. Eventually, the “closure” takes place in the “satisficing” manner.

Conversely, the real “design problem” is not to “solve” a problem, but to approximate the idealized solution (the original “desiderata”) to the “actual” one that emerges at the end of the design process. Hence, the design does not solve problems - as wicked ones indeed cannot be - and it should not be considered a goal-setting or goal-accomplishing process. The main focus in design is on the so-called “desiderata” (Nelson and Stolterman, 2014), which is considered to be an intention or an aim of design. The success of design is evaluated not by accomplishing certain goal or objective, but by the degree to which the final outcome is aligned to the original intention. This notion of success is where we find additional support to the argument that design is not intentional in the sense that is usually considered when referring to something having been done “by design”, i.e. that design is based on “bounded rationality” and “norm-seeking<sup>29</sup>”. And this is where design provides the framework for the policy-making function in Özbekhan’s terms.

Design is not just a “wild”, chaotic process and it cannot be conducted without certain “scaffolding”, which is another key design concept. There is always some degree of structure, but this structure is usually meant to be a “compass”, rather than a “roadmap”. Otherwise the increasing of the complexity of already complex problems would be uncontrollable. The difficulty in designing therefore is deciding how extensive the scaffolding may be, and how extensive the consideration of alternatives should be.

Hence, John Chris Jones (1992) identified three ways in which designers can act. Design as a “black box” implies that most of the process takes place in the designer’s head and is partly out of reach of her/his conscious control. Such designer “magician” relies on the creative capacity with the design process not fully capable of rational explanation. When designer acts as a “glass box” the design process is externalized and assumed to be entirely explicable. Such a designer

---

<sup>27</sup> Design does require setting advance criteria for “good” design, but this is more of a set of guiding principles than scientific criteria. Otherwise, design would turn into science and would not yield novelty and innovation.

<sup>28</sup> Prototyping is different from piloting in policy: the former represents divergent ideas about the possible outcome that are not expected to be implemented, but to guide further inquiry. Piloting is usually an actual outcome/solution that is implemented in a narrow scope/locus for seeking possible improvements before scaling.

<sup>29</sup> As previously mentioned, “norm-seeking” is one of the 3 main function of any system. It is based on identifying and selecting preferable societal values through value judgments, so that new value configurations can inform goal-setting (strategy) and implementation (operations, regulations) function of the system.

has full knowledge of What and Why in the design process. This approach is applicable only to repetitive and “splittable” design problems, and not to the “unsplittable” ones<sup>30</sup>. Moreover, such design process<sup>31</sup> might be automated and conducted by a computer algorithm.

According to Jones, neither the “black box” nor the “glass box” are effective for complex problems, i.e. when the necessary knowledge and experiences need to be generated as a part of the design process. For those problems the only adequate approach is when design becomes a “self-organizing” system and when it operates as the “system box”. In this case, the designer cannot make an intuitive choice, while an optimized design process would require foreknowledge of objectives and criteria that are themselves dependent upon alternatives that are not available at the start because they need to be generated in design. Thus, neither creativity implied in the “black box”, nor the transparency of the “glass box”, are very useful. Instead, the designer should work on two models simultaneously: the design strategy itself and the external situation. He calls it “self-plus-situation” that combines meta-language and evaluation, and operates interactively on two interdependent variables.

Design is dealing with complexity when addressing social problems, but it tends to embrace complexity even when the focus is not such. According to Buchanan, designers should consider all four levels (“placements”) of design in any design activity. Even when the focus is on a material object such as a chair, designers should consider its symbolic function, and then expand into considering the broader context (organizational and environmental/society). Hence, even product design might include considerations of social complexity, and turn from “tamed” to “wicked” problems in that process.

Designers are often involved in the so-called “challenging the design brief”. When given the brief by the client, they would challenge it by moving upstream to seek better understanding of Why, What, and for Whom. This is when most novel ideas are being generated as when, for instance, the focus of the design brief moves from “designing a car” to “improving mobility”. Thus, even when dealing with material objects, designers might be engaging with broader social problems and, eventually, more closely relate to policy. This is the space in which downstream design methods can help improve the design of policy instruments.

Sometimes, it is assumed that design starts with a “blank canvas”. This might be true in terms of the process when a designer wants to “let-go” of past expectations, assumptions and ideas, but this does not reflect the genuine nature of the design process. The understanding that there is a “past” of any design situation (including path-dependencies) and that design operates in a complex social context, is reflected by the concept of “throwness”. Symbolically, designers are “thrown” into a situation and they need to orient themselves and their design intention taking into consideration the social complexity. This is a point in which design can relate to the tendency of policy not to come out of “tabula rasa”, but emerge from past and existing interdependencies and/or operate through “layering<sup>32</sup>”.

Building upon the above-presented definitions of design, it implies that design is essentially about

---

<sup>30</sup> This distinction between the “splittable” and “unsplittable” problems is the same as the distinction between “wicked” and “tame” problems in Rittel and Webber.

<sup>31</sup> This approach to design is reflected in the popular “design thinking” in design labs.

<sup>32</sup> As mentioned earlier, “layering” is another design concept that has been embedded in most design practices. In principle, the “layering” in design can be very closely related to “layering” in policy.

foresight. This is not so only because of the forward-looking attitude is implied in definitions of design by Simon (the "preferred situations") and others, but also because design is about "that-which-does-not-exist". There is different degree to which designers engage with foresight consciously, but foresight is becoming a more prominent practice in design. Nevertheless, even when designers do not consciously apply foresight, both their "design attitude" (see later) and the actual design process tends to be based on some of the premises of futures literacy (i.e. "pluralizing futures" or "alternative future scenarios"). The manifestation of the foresight inclination can be particularly observed in the divergence stage of design that expands the space of possibilities, but design process overall is indeed based on generating normative ("preferable") alternatives for the final outcome.

Policy has also always been related to foresight, but in most policy practices it tended to turn into forecasting (extrapolation of the present into the future based on past data) and this tendency is additionally reinforced by the emphasis on "evidence-based" policy<sup>33</sup>. Moreover, the forward-looking aspects of policy are often directed towards "decision attitude" and the usual time horizons are shorter than the 10 or more years typical for foresight.

As presented thus far, design is less about methods and much more about design culture (abilities, competences, attitudes, values). This is best reflected by the difference between "design attitude" and "decision attitude" (the latter being in the focus on most technocratic approaches to policy). The "decision attitude" which is dominantly represented in management thinking and policy analysis that focus on choosing between alternatives, while assuming those are easy to generate. In practical terms, decision-makers are presented with a limited set of options and the intention is to seek elaborate means of choosing between them. The "design attitude" assumes that it is actually very difficult to come up with effective alternatives, but once we generate such alternatives the making of the choice between alternatives "becomes trivial". This is so because design iteratively approximates and by the time this finished, the final outcome becomes almost "obvious". This attitude considers that it is much more important to avoid choosing between "wrong" alternatives, than to avoid making a "wrong" choice. Thus, the focus of the "design attitude" is on identifying new alternatives that could lead to the best possible alternative given the skills, time, and resources available (i.e. "satisficing").

The challenge now becomes in how to bring this style of design thinking into the public sector for which the usual pattern of decision-making is almost the antithesis of the style of thinking discussed above. Rather than extending the options and widening the scope of inquiry the usual practice in government is narrow options and seeks closure - often a premature closure - on ideas. These constraints of behaviour within the public sector may be pressed all the more tightly in contemporary governments with a pervasive sense of fiscal constraints.

Those institutional constraints confront a set of problems that are increasingly complex and have few ready solutions. Many governments have kicked these problems down the road, or simply refused to accept their existence (Trump and climate change). But that makes the problems no less real. While some of this discussion of design thinking may appear utopian or merely impossible in the real world, we must wonder if the failure to think about design more broadly is actually the unrealistic position.

---

<sup>33</sup> The basic problem being that there are no "facts from the future", so even when evidence is used to justify policy actions, the ultimate source of decision is based on policy judgment (as also argued by Vickers, 1995).

## Summary

The major challenge for further development of policy design might be related to the evasiveness of design, rather than policy. Hence, we present new lenses for design, which build upon both early and more recent literature, which aims to provide more comprehensive understanding of design. This brings policy and design closer together, also by relating design to complex social systems literature. One of the main developments in design that we present are based on increasing the scope of design from that on material artefacts to using design for organizational and system change. Finally, we attempted to clarify some of the core design concepts and emphasize the differences between “decision attitude” and “design attitude” that have particular relevance for changing the practice of policy design.

## V. Conclusion

We are in the uncomfortable position of one lauding the ideas of policy design while at the same time pointing to their inadequacies. On the one hand, it is crucial to consider ways in which problems can be addressed in a more systematic manner, rather than relying on intuition or on political power to shape the solutions. On the other hand, the established mechanisms used for policy designing tend to narrow consideration of options, or indeed narrow considerations of the nature of the problem, and hence tend to rather to lead to narrow and often inadequate solutions.

The discussion above has indicated that most considerations about policy design have ignored a number of important aspects to which we can be alerted through new lenses of thinking about policy and design discussed in this paper. Some of those lenses include:

- 1) Policy problem space framing - expanding the problem space by increasing the scope of alternative perspectives, and making it more “dense” by involving more stakeholders in the process;
- 2) Foresight - expanding the horizon and methods in ways that go beyond mere forecasting, and that approach policy from preferable futures;
- 3) Iteration - focusing on approximation of the ideal, rather than “solving the problem” while dwelling in the ambiguousness and using “muddling-through” more effectively;
- 4) “Thrownness” - or considering policy design from the perspective other than tabula rasa, with all the history and path-dependencies, and political economy that this involves;
- 5) New practices - changing policy design practices toward those of “design” attitude, rather than existing “decision” attitude, and to avoid limiting design to new methods; and
- 6) Interactivity - going upstream and downstream, and also moving sideways across silos while designing.

Further progress on policy design should certainly include closer cooperation between policy and design research (and related communities), as well as those on broader issues of democracy and governance. And these efforts should not be blinded by the current discourse that sees design only in terms of “innovation” as practiced by design labs and innovation hub (and related to the Silicon Valley understanding of design).

The importance of such new research agenda is both academic and practical. In terms of research and education, current approaches to policy design might have reached a plateau, so there is a need for new strategies to deal with the subject. One of those strategies might be introducing policy design into curricula, which is currently absent both from policy and design programs. With the trend in both policy and design towards even more technocracy, more comprehensive policy design seems more critical than ever. Otherwise, the increasing complexity of social problems, combined with further de-capacitation of governments, will only further undermine the legitimacy

of public policy and even pave the way for more autocratic governance, be it that captured by corporate elites or controlled by technology. The latter is particularly worrying due to the increasing role platform capitalism (that combines corporate interest with modern technology) has on re-intermediating and monopolizing media, governance, and social values and relationships overall.

## References:

1. 6, P., D. Leat, K. Seltzer, and G. Stoker. 2002. *Towards Holistic Governance: The New Reform Agenda*. (Basingstoke, UK: Palgrave).
2. Bason, C. (2014) The Frontiers of Design for Policy. In Bason, C. (ed.). *Design for Policy*, 225-236 (New York: Routledge).
3. Bason, C. and Schneider, A. (2014) Public Design in Global Perspective. In Bason, C. (ed.). *Design for Policy*, 23-40 (New York: Routledge)
4. Bemelmans-Videc, M.-L., R. C. Rist and E. Vedung (1998) *Carrots, Sticks and Sermons: Policy Instruments and their Evaluation* (New Brunswick, NJ: Transaction Publishers).
5. Bobrow, D. B. And J. S. Dryzek (1987) *Policy Analysis by Design*: (Pittsburgh: University of Pittsburgh Press).
6. Boland, R. Jr., and Collopy, F. (eds.) (2004) *Managing as Designing* (Stanford: Stanford Business Books).
7. Braybrooke, D. (1974) *Traffic Goes Through the Issue Machine—A Case Study of Issue Processing* (London: Routledge & Kegan Paul)
8. Buchanan, R. (1992) Wicked Problems in Design Thinking, *Design Issues* 8(2). 5-21
9. Carlsson, B. (2014) Public Policy as a Form of Design, In Boland, R. Jr., and Collopy, F. (eds.). *Managing as Designing*, 259-264 (Stanford: Stanford Business Books).
10. Carstensen, H.V. and C. Bason (2012) Powering collaborative policy innovation: Can innovation labs help?, *The Public Sector Innovation Journal* 17(1), 4.
11. Churchman, C. W. (1967) Wicked Problems, *Management Science*, 4(14). 41-42
12. Clark, H. and Brody, D. (eds) (2009) *Design Studies: A Reader*, London: Bloomsbury Academic
13. Dahl, E. A. And C. E. Lindblom (1953) *Politics, Economics and Welfare: Planning and Politico-Economic Systems Resolved into Basic Processes* (New York: Harper & Row).
14. de Leon, P. (1997) *Democracy and the Policy Sciences* (Albany: State University of New York Press).
15. Dryzek, J. S. (1983) Don't Toss Coins into Garbage Cans: A Prologue to Policy Design, *Journal of Public Policy* 3, 345-67.
16. Hood, C. (1976) *The Tools of Government* (Chatham, NJ: Chatham House).
17. Hood, C. (2000) *The Art of the State* (Oxford: Oxford University Press).
18. Hoornbeek, J. A. and B. G. Peters (2017) Advancing the Study of Policy Problems, *Policy & Society*, forthcoming.
19. Howlett, M. (2011) *Designing Public Policies: Principles and Instruments* (London: Routledge).
20. Howlett, M. And R. P. Lejano (2012) Tales from the Crypt: The Rise and Fall (and Rebirth) of Policy Design, *Administration & Society*
21. Howlett, M. I. Mukherjee and J. J. Woo (2015) From Tools to Toolkits in Policy Design Studies: The New Policy Design Orientation Toward Policy Formulation Research, *Policy & Politics* 43, 291-311.
22. Ingram, H. (2016) Public Policy Theory and Democracy: The Elephant in the Room, In B. G. Peters and P. Zittoun, eds. *Contemporary Approaches to Public Policy: Theories, Controversies and Perspectives* (London: Macmillan).
23. Ingram, H and A. B. Schneider (1990) Improving Implementation Through Framing Smarter Statutes, *Journal of Public Policy* 10, 67-88.

24. Jones, J.C. (1992) *Design Methods*, 2nd edition. Hoboken, NJ: John Wiley and Sons
25. Jones, P. (2014) Systemic Design Principles for Complex Social Systems, In *Social Systems and Design*, Gary Metcalf (ed). Volume 1 of the Translational Systems Science Series, Springer Verlag.
26. Jordan, A. And A. Lenschow (2010) Environmental Policy Integration A State of the Art Review, *Environmental Policy and Governance* 20, 147-58.
27. Jordan, A. And J. R. Turnpenny (2016) *The Tools of Policy Formulation: Actors, Capacities, Venues and Effects* (Cheltenham: Edward Elgar).
28. Junginger, S. (2013) Design and Innovation in the Public Sector: Matters of Design in Policy Making and Policy Implementation, *Annual Review of Policy Design*, 1(1).
29. Kieboom, M. (2014). Lab Matters: Challenging the practice of social innovation laboratories. Kennisland
30. Kuosa, T. (2012) *The Evolution of Strategic Forecasting: Navigating Public Policymaking* (London: Routledge).
31. Lasswell, H. D. (1951) The policy orientation. In D, Lerner and Lasswell (eds.) *The Policy Sciences: Recent Developments in Scope and Method*. Palo Alto, CA: Stanford University Press, 3-15.
32. Linder, S. H. And B. G. Peters (1984) From Social Theory to Policy Design, *Journal of Public Policy* 4, 237-59.
33. Linder, S. H. and B. G. Peters (1991) The Logic of Public Policy Design, *Knowledge & Policy* 4, 125-51
34. Lowi, T. J. (1972) Four Systems of Politics, Policy and Choice, *Public Administration Review* 32, 298-310.
35. McMullin, J. (2012) Design for Policymaking, in Biue, E. and Murray, D. (eds.) (2012). *Usability in Government Systems: User Experience Design for Citizens and Public Servants*. 347-358 (Waltham: Morgan Kaufman).
36. Mettler, S. (2005) *Soldiers to Citizens: The G. I. Bill and the Making of the Greatest Generation* (Oxford: Oxford University Press).
37. Mettler, S. And J. Soss (2004) The Consequences of Public Policy for Democratic Citizenship: Bridging Policy Studies and Mass Politics, *Perspectives on Politics* 2, 53-73.
38. Nelson, G. H. and Stoiterman, E. (2012). *The Design Way: Intentional Change in an Unpredictable World* (Cambridge: MIT Press).
39. Özbekhan, H, (1970) *The Predicament of Mankind* (Rome: Club of Rome).
40. Payan, T. (2006) *Cops, Soldiers and Diplomats: Explaining Agency Behavior in the War on Drugs* (Lanham, MD: Lexington Books).
41. Peters, B. G. (2002) The Politics of Policy Instruments, in L. M. Salamon, ed. , *Handbook of Policy Instruments* (New York: Oxford University Press).
42. Peters, B. G. (2017) Introduction, in A. Wildavsky, *The Art and Craft of Policy Analysis*, 2<sup>nd</sup> ed. (London: Macmillan)
43. Peters, B. G. And P. Zittoun (2016) *Contemporary Approaches to Public Policy* (London: Macmillan).
44. Pressman, J. L. And A. Wildavsky (1974) *Implementation* (Berkeley: University of California Press).
45. Rava, N. (2017) Policy Design: Towards Understanding and a Methodological Framework, *Explorations in Design*, Strategic Innovation Lab, OCAD University, 21 March 2017
46. Schaffrin, A., S. Sewerin and S. Seubert (2014) Policy Dynamics and Policy Innovation—Climate Change Policy in Austria, Germany and the UK, *Environmental Politics* 23, 860-93.
47. Schneider, A. L. And H. Ingram (1997) *Policy Design for Democracy* (Lawrence: University Press of Kansas).
48. Schneider, A. L, and H, Ingram (1990) Behavioral Assumptions of Policy Tools, *Journal of Politics* 52, 510-29.
49. Schön, D. (1984) *The Reflective Practitioner: How professionals think in action*. New York: Basic Books
50. Sieber, S. D. (1980) *Fatal Remedies: The Ironies of Social Intervention* (New York: Plenum).
51. Simon, H. A. (1996) *The Sciences of the Artificial*, 3rd ed. (Cambridge: MIT Press)
52. Sitaraman, G. (2017) *The Crisis of the Middle-Class Constitution* (New York: A. A. Knopf).

53. Soss, J. (1999) Lessons of Welfare: Policy Design, Political Learning and Political Action, *American Political Science Review* 93, 363-80.
54. Vickers, G. (1995) *The Art of Judgment: A Study on Policy Making* (Thousand Oaks: Sage Publishing) .