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The Role of Design in Policy Making: A Wicked Problems Perspective

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The design discipline is of increasing appeal to a public sector confronted with ill-defined problems consistent with the socially-embedded. This paper explores the role of design in policy making projects, by means of two case empirical case studies. We establish and apply a wicked problems perspective to analyse data from; (1) MindLab and (2) Helsinki Design Lab. Findings reveal that design is specifically useful in the mitigation of wicked policy problems when harnessed by a strategically composed multidisciplinary team including designers. The characteristics of design that are identified as essential are an interactive approach to problems, a holistic perspective, and a user-centred way of working. This paper contributes empirical evidence toward the role of design in policy making, drawing the two domains together via wicked problems theory.

Keywords: social design, social innovation, public sector, co-evolution of problem and solution, problem framing

Introduction

A powerful convergence is underway. Problems that affect society are increasingly being acknowledged to be interrelated – crossing borders, cultures and falling into the portfolio of the collective (Tromp & Hekkert, 2018). Public trust in political leaders is low, with the immediacy of social media encouraging if not amplifying extreme ideological views (Im, Cho, Porumbescu, & Park, 2014). Citizens are increasingly critical of government institutions and political partisanship that plays out via inaction or counterproductive policy directions, ("let's build a wall"; "let's exit Europe") ibid)). The fourth converging factor is associated with the design discipline. The design discipline has been elevated from the realms of project and operational subject matter associated with artefacts, products, services and processes - to areas of strategy, culture and organisational reform (Sharma & Poole, 2009; Muratovski, 2015). Buchanan describes this change in subject matter as an evolution – the *design movement* (2015).

While the last ten years strongly heralded a view of design as powerful business capability, attention regarding the power of design when unleashed into socio-embedded problems is also garnering interest. Methodological developments demonstrate a discipline undergoing maturity yet retaining a sense of deep responsibility for social matters. Methodological developments include but are not limited to:

- **Vision in Product Design** (Hekkert & Van Dijk, 2011), future focused, designers taking responsibility for the impact of their design;
- **Transformation Design** (Jonas, Zerwas & von Anshelm, 2016), with the goal to drive positive change within organisations via design;
- **Transition Design** (Irwin et al., 2015), designing transitions for "more sustainable futures" and;

- **Designing for Society** (Tromp & Hekkert, 2018), designing with the social implications in mind, or even *for* certain social implications.

Yet achieving policy reform requires overcoming political plurality which is inherent in democracy. The construction of a policy must work to the interests of multiple stakeholders in order to surpass the rigours of political negotiation. Policy makers rarely succeed in making the change they envisioned, which means that policies are not as effective as they should and could be (Bason, 2014). Yet how to design necessary policy reform required to capture system-level and social change remains an area for further exploration.

This paper explores the role of design in policy making projects, by means of two empirical case studies. The greater purpose of this paper is to contribute toward a growing body of literature associated with the role of design in policy making. We apply wicked problems theory to analyse two case studies; (1) Helsinki Design Lab (Finland) and, (2) MindLab (Denmark) in order to evaluate how design as an approach assists policy making. The paper responds to two research questions:

RQ1: In what way do dedicated design labs aid governments in the mitigation of wicked policy problems?

RQ2: What methods, tools and techniques of design are effective in design lab projects where policy planning and design are combined?

The paper proceeds in the following manner; beginning with a review of relevant literature; detailing a case study methodology; describing results related to the two individual case studies; a discussion of the comparative findings before concluding. This paper contributes empirical evidence toward the role of design in policy making, drawing the two domains together via wicked problems theory.

Establishing a Wicked Problems Perspective

Complex problems in policy making are common. In 1973, Rittel and Webber attempted to understand the nature of these kinds of problems, assigning the title 'the wicked problem'. Wicked problems are characterised as, "a class of social system problems which are ill-formulated, where the information is confusing, and where there are many clients and decision makers with conflicting values" (West Churchman, 1967, p. B-141). In more recent research, wicked problems have been described as problems with high levels of complexity, uncertainty, and divergence of values between different stakeholders (Head, 2008). In isolation, these factors do not make a problem wicked. However, once present simultaneously, they reinforce one another (ibid).

The wicked problem theory is resurgent today, due to the increasingly complex challenges society faces on a day-to-day basis (Buchanan, 2015; Norman & Stappers, 2015). These arise not only in the policy making field, but in other fields as well. Since its introduction, the theory has eagerly been adopted by scientists in the fields of business strategy (Camillus, 2008), design (Buchanan, 1992), and knowledge management (Courtney, Merali, Paradice & Wynn, 2008). Despite the attention 'wickedness' is attracting, there is no academic consensus on an approach to negotiating such problems, merely that traditional approaches (i.e. technical solutions and routine administrative solutions) fail to deliver sustainable outcomes (Rittel & Webber, 1973; Roberts, 2000; Head, 2008). Perhaps the main reason for this weakness can be found in the general point made by Rittel & Webber (1973) and Schön & Rein (1994), that the definition of a problem discretely suggests an approach for resolution as well. As each wicked problem is unique, an approach is likewise unique. As Head (2008, p. 103) puts it: "It is not clear that labelling a project as 'wicked' will readily assist in solving it." Approaches that are advocated by policy scientists lie among the lines of (stakeholder) collaboration and consultation, incrementalism, and iteration. These approaches share theoretical and practical affinity with design as an activity.

The Design Activity

Design as a discipline of practice is historically defined as the process of planning and creating ideas, then implementing these ideas to improve the artificial environment (Simon, 1969). Cross (2006) defines design thinking as a type of problem-solving cognitive process utilising a unique type of intelligence based on reasoning and logical inference. The cognitive process allows the central activities of design to extend beyond problem solving to describe problem identification, solution generation and strategy (Cross, 2006). The presence of creativity within the design process, and within design thinking as the intangible articulation of the

design activity, is considered central to the designer's ability to frame and reframe the problem at hand (Dorst & Cross, 2001). Creativity is often associated with the fine arts but also drives an important component of design — the ability to imagine what could be, not just what is. Creativity rests within the design process as an imaginative ability that links ideas. Cross (2006) refers to the 'creative leap' as a vital moment within the design process where novel concepts emerge. Schön (1983) had earlier described the notion of 'surprise' that prevented designers from routine behaviour; the type of behaviour that might inhibit original thoughts.

Dorst (2015) further explores the approach of framing and reframing problems, which is enabled by design thinking. Dorst (2015) describes design thinking as a paradigm for problem solving. Problem-solution framing is critical in determining different kinds of design reasoning, design processes and design skills that are utilised within a design approach (Dorst, 2011). Designers' are reflective practitioners, who engage in reflection-in-action during their work. This means that they search for problem and solution pairs, also identified as an activity named framing (Schön, 1983; Dorst, 2011). The activity of framing results in the co-evolution of problem and solution is a fundamental component of the design activity, see Figure 1 (Maher et al., 1996; Dorst & Cross, 2001).
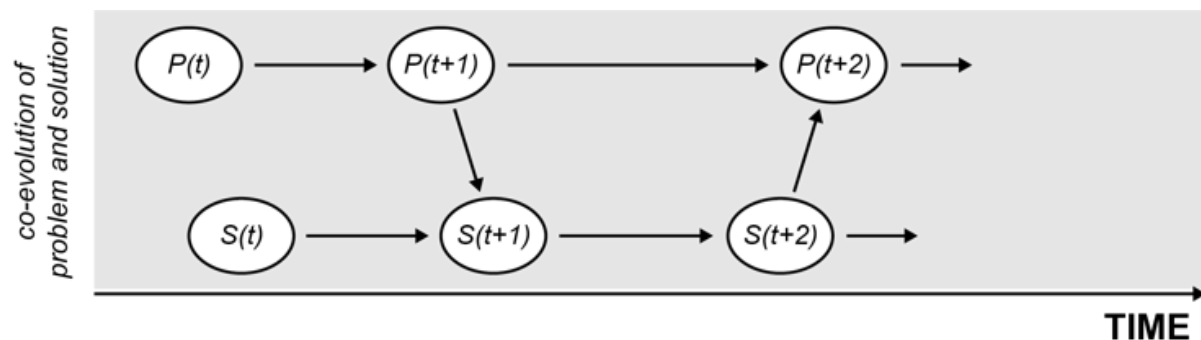

Figure 1: The co-evolution of problem and solution model (Maher et al., 1996; Dorst & Cross, 2001)

Policy Making and Design

Wicked Problems and Public Institutions

When looking at examples of wicked problems (climate change, obesity, racial discrimination, etc.), the origins seem to lie outside of public organisations—the institutions we generally point at to solve these problems. However, the very way in which governments are organised often sustains or even reinforces the prevalence of wicked problems. (APSC, 2012; Carstensen & Bason, 2012; Head & Alford, 2015). For example, politicians generally have a preference to address highly visible or tangible parts of the problem, which they do by proposing concrete and simple solutions ("Let's build a wall"). Politicians are not alone in this preference. The (financial and political) accountability systems that are in place in public organisations tend to favour discrete and finite solutions over complex, interconnected solutions. Such solutions don't necessarily have the potential to solve a problem as they are often short-term fixes, and don't approach the problem comprehensively (Head, 2008).

Additionally, public institutions remain highly hierarchical and bureaucratic, having different sectors both vertically between administrative levels, and horizontally between policy domains (Carstensen & Bason, 2012). Hierarchical bureaucracies have not yet been successful in grappling wicked problems (Head & Alford, 2015), as they tend to be risk-averse, are intolerant of messy processes, perform better when issues have clear boundaries, and hinder collaboration across domains. The opposites of these characteristics have been labelled as useful for the mitigation of wicked problems (APSC, 2012; Carstensen & Bason, 2012).

Policy Problems as Design Problems

Buchanan (1992) compares design problems to wicked problems and states that the two are similar. He also points out that a linear approach to such problems is rarely effective, as this approach derives from definite conditions, whereas wicked problems are characterised by the indefiniteness of conditions. This implies that putting together a team of designers and having them follow an iterative design process will result in a successful solution, but this is not necessarily the case. Norman (2014) argues that complex problems require complex solutions. In order to resolve a complex problem, a multi-disciplinary team needs to be put together,

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in which all the disciplines relevant for the problem are united, including the design discipline and the user. In a follow-up paper (Norman and Stappers, 2015) the point is made that the complexity in a complex problem is not so much about the solution, but more about the implementation. They propose an approach much alike Lindblom's 'muddling through' approach (1959): an incremental approach that makes for a satisfactory result, rather than an optimal result. In general, the problems that are addressed by the design discipline have been increasing in complexity (Sanders & Stappers, 2014). Moderately and highly complex problems in the meso and macro level are now the subject matter of designers (Figure 2). Examples of projects that apply design in public innovation are 'Future of Fish', a non-profit social incubator aimed to end overfishing ("About Future of Fish | Future of Fish", 2017); and InWithForward, a social design organisation mainly active in Canada (Van der Bijl-Brouwer & Malcolm, 2018).
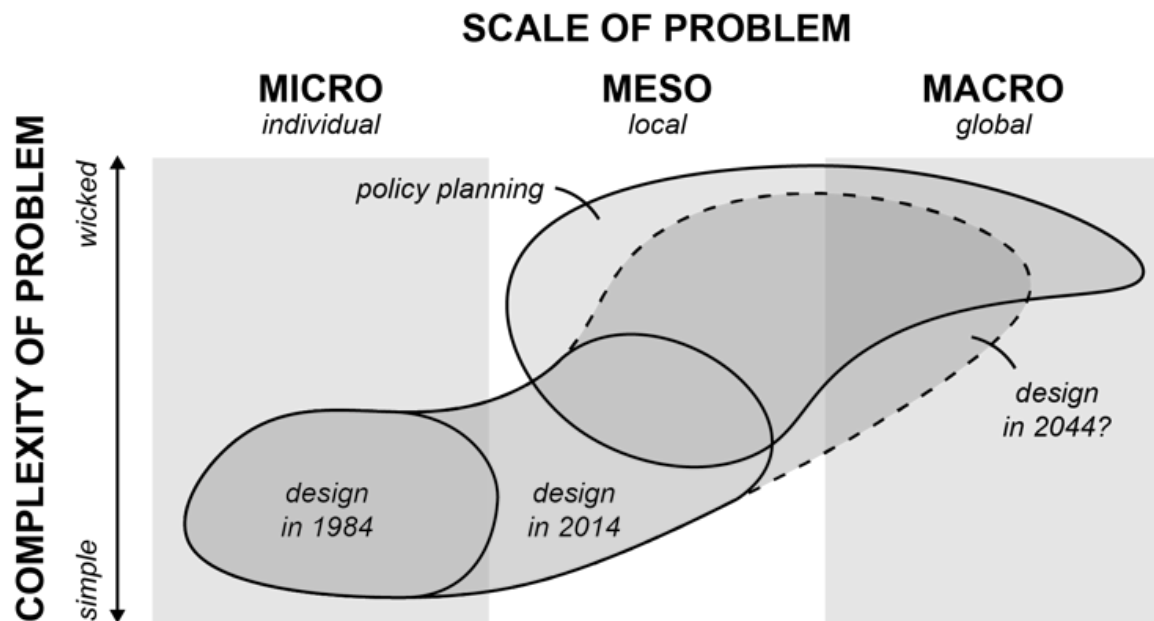

Figure 2: The field of policy planning, the expanding field of design, and the complexity they address, adopted from Sanders & Stappers (2014)

Research gap

That applying design principles to wicked policy problems is considered a good fit, is reflected in the growing number of government design units and external design agencies that assist governments in policy making. The names these units often go by— "labs" —imply a certain openness to experimentation and iteration that is not necessarily present in governmental organisations *themselves*, but that is natural to design. Even though there are a lot of examples of successful design interventions, and there are numerous examples of government design labs, academic knowledge on the topic of policy making via design remains limited. There is no unified view yet on what the specific role of design in policy making can and should be. This paper aims to explore what aspects of design are helpful in the mitigation of wicked problems, by studying the activities performed by design labs for governments.

Research Design and Methodology
Case Study Method

Considering that the aim of this explorative study is to clarify the role that design can play in the mitigation of wicked problems, it is necessary to study the actual contribution of design to existing addressing wicked problems. The unclear boundary between phenomenon and context in this case, make experimental settings with any form of manipulation a nonviable option. Creating a representative simulation of reality would be nearly impossible. As such, case study is considered the most suitable approach for this study (Yin, 2009; Gray, 2014).

This study takes a multi-perspective approach by implementing methodological triangulation (Ravitch & Mittenfeller, 2015). The phenomenon and accompanying data are viewed from multiple perspectives,

increasing rigour in the study. Between-method triangulation was achieved by using primary, public and third-party information as data sources.

Two Cases

There is a large number of design institutions (i.e. labs) in Europe that assist governments in policy making. Two of the more significant ones—because of their lasting influence on governing and the example they have set for other labs—are MindLab (Denmark) and Helsinki Design Lab (Finland). Both labs are among the first design labs in Europe, and both have made available a considerable amount of information on the way design has helped mitigate complex problems for their government. This available information has been largely self-reported and not critiqued by a third party. This makes the cases very suitable for a comparative case study.

Helsinki Design Lab

One of the more significant and earlier design units is *Helsinki Design Lab (HDL).* HDL was a platform set up by SITRA (the Finnish Innovation Fund) with the aim to advance strategic design within the Finnish government. It consisted of a small team of about three or four trained strategic designers. The initiative ran from 2009 till 2013. Helsinki Design Lab performed several pilots, with two formats. The first format was to set up one-week 'studios', in which multidisciplinary teams try to tackle policy problems suggested by local governments. The other format was to place designers in-house at city governments, where they participate in a policy making team. HDL has extensively and openly recorded the progress of their projects through project pages and blogs. Next to working on government projects, HDL performed research themselves, and published books and articles on the topic. These documents will also be studied. An overview of the case data used can be found in table 1.

Table 1 Overview of data sources, Helsinki Design Lab

Data on performed projects	HDL research output	Third party information
Project pages and blogs ("Dossiers - Helsinki Design Lab", 2012)	Book: Recipes for Systemic Change (Boyer, Cook & Steinberg, 2011)	Report Design Council: Design for Public Good (Design Council, 2013)
Interview with HDL Director (30 mins)		Interview SEE Bulletin nr. 8 (Whicher & Cawood, 2012)

MindLab

MindLab is a cross-governmental, internal innovation unit for the Danish government. Running from 2002 till 2018, it was one of the longest running government design units. It was originally set up to find new ways to craft policy, as approaches used at the time were not delivering successfully. MindLab's responsibilities and corresponding composition have varied over time, ranging from creative facilitation to informative support in high-level strategic decisions. Due to its lengthy operation, MindLab has a vast amount of high-quality information concerning its responsibilities and activities. An overview of the case data used can be found in table 2.

Table 2 Overview of data sources, MindLab

Data on performed projects	Research output	Third party information
Conference presentation director (Bason, 2014a)	Paper on collaborative policy innovation and design labs (Carstensen & Bason, 2012)	Report Design Council: Design for Public Good (Design Council, 2013)
Tool overview on website ("MindLab - Methods", 2017)		
"The journey of MindLab" (MindLab, 2016)		

Qualitative Data Analysis

A thematic analysis was performed on all material from each case separately with major predefined codes established based on literature. Predefined codes included the design process, policy making challenges and elements of wicked problems. Codes were also expanded during an open-analysis where data repetitively pointed toward new themes; both major and minor. The results of the two cases were then compared and contrasted. The results are presented in the results chapter, with the findings from the comparative analysis forming the basis for the discussion.

Results
Helsinki Design Lab

Grappling complexity through supporting multidisciplinary teams in design

One of the ways in which Helsinki Design Lab aims to grapple the interconnectedness that characterises the complex problems they are facing, is by forming multidisciplinary teams with people both closely and distantly related to the problem. As a result, the composition of the teams is similar to the problems the teams have been created for, in that they are both multifaceted. Having these multiple perspectives helps in creating a rounded view of the problem. Similarly, as each complex problem is different, each team has a different composition, representing the most relevant disciplines.

> *We tried to construct a 360° perspective around the problem, so Lai came from Singapore, she runs one of the top secondary schools; Juha works in the Ministry of Health on health policy but also as a practising physician […]; Ann is an educational software specialist; and then Darryl and Maja were the two designers. The designers are in a clear minority and their role is to help bring synthesis to the conversation.*

Within the multidisciplinary team, there are two designers. Their main role is to steer the team towards synthesis when this is needed, but they are a core part of the team, and act as such: "They are expected to bring their expertise and experience to the table by actively contributing like everyone else." Of the two designers, one acts as *design lead*, the other remains in the background but can jump in for "back-up".

During the one-week project the multidisciplinary team is led through a typical design process, of which this inclination towards synthesis is but one of the relevant characteristics. In the next paragraphs, the design characteristics that were considered relevant for this multidisciplinary approach to mitigating wicked policy problems will be discussed.

Synthesis mind-set

One of the core capabilities of designers that Helsinki Design Lab identified as valuable in designing for wicked policy problems, is the ability to think in solutions rather than problems, even if the problem is not completely framed yet. This is important, because the complexity of these kinds of problems makes it almost impossible to fully comprehend the problem before moving on to solutions.

> *The machinery of government in general in the West has been designed to consider objective facts and make decisions based on those facts. […] There are areas where we just don't know enough yet, so there are decisions that we're being forced to make without having complete data…That's a design challenge; that's what a designer does on a daily basis.*

As having a synthesis mind-set is not a skill commonly present within the multidisciplinary teams, it was the task of the design lead to steer towards synthesis when needed. Sometimes that meant having to make tough decisions to move the process along, but other times a synthesis-mindset was achieved early on in the process through the creation of a strong shared vision.

> *Synthesizing the various inputs and needs of all partners was not that hard, in the end, because we had invested a lot of time up front in aligning everyone behind a shared vision.*

Facilitating participative governance

When studying the activities HDL performed to design for policy problems, it became clear that one of their main objectives was to bring user-centeredness to both policy making projects and the Finnish government in

general. This was meant to reduce the gap between the government and its citizens, which eventually could lead to the delivery of better services.

> *We are putting designers in different ministerial and municipal positions to help create a better interface between public and private.*

Policy makers rarely have contact with the 'users' of their policy, mostly making estimations on citizen interests based on their own experiences. By putting the team or policy maker in contact with the people they're working for, HDL is making sure that the user is incorporated earlier on in the process, so that user interests are treated with equal weight as other stakeholders' interests. Considering the complexity of the problems, there are often stakeholders whose voice is not represented because they are hidden within a system. These stakeholders carry no political weight under a conventional system. They have no capital or room to negotiate. When using design, stakeholders see their needs represented the best.

> *On day two they visited a school and spoke to as many people there as possible, including the principal, teachers, pupils and caretaker. In the afternoon they got to know the wider context, visiting places like family counselling centres and sports clubs.*

Interactive approach

In all their projects, HDL adopts the interactive (i.e. iterative) approach that is characteristic to the design process. In their experience, a linear approach does not help in tackling complex problems, whereas an iterative approach can. This is where designers come in.

> *Industrial society is predicated on the idea that you can look at the world, identify a problem, think about it really hard to identify an answer, make a plan, and then execute on that plan, all in a linear manner from beginning to end. That linear approach worked when human society more or less agreed that the world was simple. […] Human economies, and perhaps human societies, were oversimplified.*

Working on a problem iteratively is useful for complex challenges as it enables constant evaluation of the problem and its solutions, learning more about both in the process. This behaviour can be recognized in the way the teams begin to think of solutions and themes *during* problem analysis.

> *We end Monday with a lightning quick summarizing discussion just to get some ideas on the whiteboard. Tuesday ends with a download session back in the Studio where everyone shares their insights from the day and the group begins to assess emerging themes and questions.*

Another important aspect of design iteration is the 'doing' element. By visualizing and prototyping solutions, themes, etc. intangible objects become tangible, making them a subject for discussion and experimentation. This tendency is known to greatly help in steering towards synthesis – which is essential in design.

Pairing a complex web of problems with a holistic set of solutions

The problems that are given to Helsinki Design Lab are perceived by them as "a complex web of factors creating the problem", in which the factors don't function independently and are instead interconnected. The problem is multi-layered, for the factors that create the problem are situated on the micro, meso and macro levels.

> *In education, this is about the individuals and their lifestyles; it's about the teaching methodologies; it's about the classrooms; it's about how you educate teachers; it's about health; it's about mental health, it's about after school; it's about early child education; about jobs.*

> *Top-down government responses to problems tend to be reactive, addressing symptoms in isolation rather than engaging with the often complex web of factors that create a problem.*

While governments often tend to address symptoms of the problem, Helsinki Design Lab respects this complexity and aims to understand and reframe the problem without needlessly oversimplifying—in their own words: "developing the architecture of the problem". This is done with synthesis in mind. Linked to this acceptance of complexity in the problem, is the acceptance of a complex solution, or rather a holistic *set* of solutions.

Amid this inherent complexity, the challenge is to find the right dependencies and to avoid oversimplifying things.

Propose an architecture of solutions that highlights the top ten opportunities to help move closer to the vision.

HDL sees design as a very suitable approach for dealing with this complexity, but at the same time it recognizes that it still has to evolve in order to truly mitigate complex problems. In the policy making field, designers are out of their comfort zone.

Sitting around the table with world-leading experts from other fields, working in abstract systems, strategy and policy recommendations is something that designers often aren't used to doing.

To really contribute in the public sector, designers need to become better at juggling data and engaging broader communities of stakeholders.

MindLab

Needing new ways to approach challenges

At the time when MindLab was set up (2002), the Danish government was in need of new approaches to successfully develop and implement new policies and address wicked problems. Even though small policy changes could be successfully implemented, bigger policy changes or complete policy reforms often weren't completed. At the time, most of the public organisation's innovation efforts were inwardly focused, and innovation was not an activity that came naturally to the organisation.

How do you work with innovation in government, when the whole institutional setup of our public organisations is to emphasize stability over change; predictability; mass production of services; application of law in an equal way, and so forth. That's why a lot of people would say that innovation in government is an oxymoron.

When the Danish government set up MindLab, it showed that they had the desire to change this status quo. It became MindLab's responsibility to disrupt the Danish government in their current way of policy making, by cutting through silos and aiding them in innovating *outwardly.* This need for disruption was reflected in the initial (unofficial) goal set by MindLab's new director:

Mindlab is the equivalent of throwing a hand grenade at bureaucracy.

This was to be done by finding and creating new strategies for policy making—adding new tools to the policy maker's toolbox (Table 3). One of the primary ways this was done was by introducing aspects of design to policy makers. Design was considered a good fit because of its user-centred way of working, which could increase empathy and serve as inspiration during the policy making process.

The pursuit of a more contextual and fine-grained appreciation [by civil servants] of how people experience public services and regulation is at the heart of the approach.

Design was also beneficial because of its proactive nature, having the tendency to both *do* and *think,* and keeping the future in mind at all times. This is also reflected in its ability to work visually and physically, enabling effective communication between civilians and policy makers, but also among policy makers.

Through [tangible & intangible] prototyping, they could produce more workable solutions and communicate them to decision-makers so as to have a good chance of implementation.

Lastly, design's iterative approach was estimated to be beneficial for the complexity of wicked problems, as it enables the evaluation of solutions and using this knowledge for the development of new ones.

Table 3 MindLab's tools

Tool	Primary application	General goal
Plan of Change	Process management	n.a.
Project Focus	Process management	n.a.
Project Journey	Process management	n.a.
Interview	Research	Analysis
Portrait	Research	Analysis
	Communication	Synthesis
User journey	Research	Analysis
	Communication	Synthesis
Film & sound	Communication	Synthesis
Pattern recognition	Analysis	Analysis & synthesis
Perspective cards	Ideation	Synthesis
Brainstorm	Ideation	Synthesis
Development questions	Ideation	Synthesis
Practice check	Idea evaluation	Synthesis
Proto- & 'provotypes'	Idea evaluation	Synthesis
Priority grid	Idea or concept selection	Synthesis
Idea development	Converging	Analysis & synthesis
Concept development	Converging	Analysis & synthesis
	Communication	Synthesis

A systematic approach for design in the public sector

MindLab functions as a link between policy and services, "combining the high-level macro calendars of policy, with the nuanced details of qualitative research." In order to do this effectively, it had the objective to create a systematic approach for user-centred design within the public sector.

> *Working effectively with user-centred innovation requires a systematic approach to what needs to be investigated, underpinned by a wide variety of methodologies.*

This systematic approach takes the user-centred and iterative way of working of designers as a basis, but expands it by working with multidisciplinary teams and introducing design tools suitable or adapted to the public sector (Table 3).

User-centric way of working

By design's ability to "make problems experientially available", the policy maker comes closer to the people who are experiencing a problem, which can serve as inspiration during the policy making process and increases empathy.

> *By enabling the civil servant to 'see' the world differently and with empathy, and understand that things could be done differently.*

Partly because of its user centric way of working, design was able to help identify problems earlier in the policy making process, because you operate 'on site'.

I got some really nasty statistics about this implementation process, and then my staff came up and told me that they knew already it was coming, because three months ago they ventured into the field with MindLab and took a look at what people are experiencing. And that is just now showing up in the statistics, but we could see that in the behaviour and experience already.

Iterative way of working

As Figure 3 shows, the systematic approach MindLab has created for design in the public sector is iterative, building in room to go back to implemented policies and adjust them. Next to this large iteration loop, smaller loops can be recognized. In its way of working, MindLab is taking an evaluative stance, constantly evaluating problem frames, ideas and solutions and consequently adjusting. This is also reflected in the tools it adopted in their processes (Table 3), where most of the tools are means to generate, prioritise and evaluate ideas.

MindLab was to take a longer-term, project-based focus by: Developing new ideas based on user needs, analysing, qualifying, and possibly testing ideas, and – after a deployment and operational phase – evaluate and measure the impact of new action.
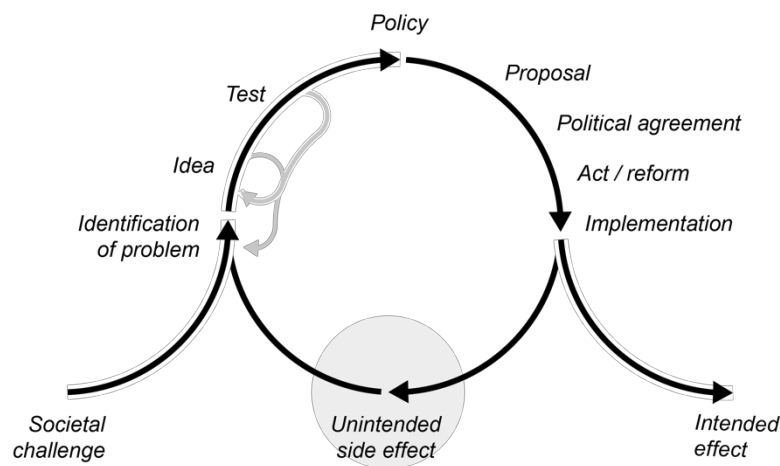

Figure 3. MindLab's systematic approach for user-centred design in the public sector (Carstensen & Bason, 2012), with extra iteration loops added by the author

Working with multidisciplinary teams

MindLab attends to the policy making projects of three different ministries that normally operate separately, even though their policy domains overlap at places. An example is school reform, which affects more than just schools.

How do you create school reform if you realize that it does not happen just by getting the law through parliament? It is ultimately powerless, unless it finds a way to work with school principals, teachers' unions, parents, local governments, other ministries.

We're working on an intersection of so many different fields.

In an attempt to mimic the problems their ministries are facing, MindLab not only performs user-centred design, it also facilitates short- and long-term team work with people from across ministries and departments, to create situations in which overlapping problems could be explored, e.g. by exploring joint solutions.

MindLab management and team developed the layout of the lab so as to facilitate design activities such as multidisciplinary teamwork. […] To help cut across disciplinary and departmental silos.

Major themes identified for each case have been presented. Findings from a comparative analysis will be discussed in the following chapter.

Discussion

The key problem of policy making that comes forward in both case studies, is that there is a big gap between the original intent of a policy, and the way it is eventually implemented in society. There are three main barriers that cause this problem. Firstly, it is rarely the case that the problem addressed in a policy making project is rightly understood; secondly the policy making process is a linear, evidence-based process, which is passed on to different parties in different stages, causing for a lot of leakages in the project; thirdly, projects are placed within single policy and knowledge domains. The designers working in the labs attempt to address all these barriers with their processes, which will be described in more detail in the next sections.

Designing with non-designers

One of the more striking similarities between Helsinki Design Lab and MindLab was that they both opted to let their teams of professionals go through a design process, albeit in unique forms. In both cases, following a design process was key in addressing the complex policy problems they were facing. The holistic perspective and the interactive way of framing and solving problems are most important here. Designers are trained in these capabilities, and therefore support and participate in the team throughout the process.

Co-evolution of Problem and Solution as a Challenge to Mind-set and Procedure

The policy making process as described in the case studies is a linear process, in which problem, solution and implementation are handled subsequently and in isolation. Moreover, in the process of defining a policy or social problem, policy makers often take an evidence-based approach, in which a policy is based on (quantitative) evidence. This is done by doing desk research and talking to (a limited amount of) stakeholders in the system. Both strategies have been argued to be ineffective in dealing with wicked problems. Taking a linear, rigid and rational approach to wicked problems is believed to be ineffective (Lindblom, 1959; Buchanan, 1992; Schön & Rein, 1994). Lindblom proposes a different approach: 'muddling through' (i.e. the 'Branch method'). In this approach, the problem solver tries to reach his goal by making incremental decisions and solutions, and evaluating the effect.

By exploring problems through creating provisional solutions, design when used in both labs eliminated a linear approach, and instead applied a process of co-evolution of problem and solution. Both co-evolution of problem and solution and 'muddling through' are approaches in which the final problem and final solution co-evolve. Schön and Rein (1994) offer an alternative, albeit similar, approach, called 'frame reflection': a reflection-in-action activity in which the frame of problem and possible solution, but also the value perspective of the project, is continuously evaluated and reframed (Head & Alford, 2015). As established earlier in this paper reflection-in-action and framing are key design activities, however Schön and Rein's proposed approach hints to another key design characteristic as well; understanding and keeping in mind the *value* of a project. The user-centric thinking mechanisms of design and the empathy for the needs and interests of stakeholders this generates, provide one way to achieve this.

Inciting empathy and decreasing the distance from the problem

Another characteristic of design that played a substantial role in the design lab's activities was its human-centric point of view. The link between a human-centric way of working and the mitigation of wicked problems is not strikingly evident. It gets clearer when considering that most of major system failures can be dedicated to the disregard of human-factors (i.e. human behaviour) (Norman & Stappers, 2015), and that it is with the addition of human-beings to a system, that it becomes unpredictable (Van der Bijl-Brouwer, 2018). A human-centric point of view allows for solutions that fit within the user's world view and behaviour, as such increasing their conformance to the system. Moreover, human-centeredness allows for empathic and culture-specific decisions, aspects that are generally missing from decision-making mechanisms in public organisations (Bosch, 2016). An additional benefit is that policies suited to its users can aid public organisations in regaining trust of its subjects (Bosch, 2016). The simple activity of taking policy makers into the 'field' to interact with the environment they were writing policy for, had profound consequences. The HDL quote;

> *On day two they visited a school and spoke to as many people there as possible, including the principal, teachers, pupils and caretaker. In the afternoon they got to know the wider context, visiting places like family counselling centres and sports clubs.*

Not only did it allow for quicker insight building, (where waiting for statistical data may take months to be gathered and fully analysed), it also aided policy makers to connect the abstract nature of strategy and policy to a set of concrete experiences.

Multidisciplinary design work

When crafting teams to work with, both Helsinki Design Lab and MindLab chose to put multiple disciplines together in one team. MindLab sought these different disciplines within the government but across policy domains, HDL sought them across the world. Their objective was the same: to create a well-rounded view on the problem. This is supported by Norman & Stappers (2015). An indirect, but probably even more important consequence of multi-disciplinary team work, was that it enabled the design labs to break through knowledge and policy domain silos. If wicked problems fall beyond the parameters of one discipline alone, then the convergence of disciplines will be effective in approaching problem framing. Important to note is that, even though the design characteristics discussed in the previous paragraph show to be essential in the mitigation of complex problems, its benefits truly come to fruition when combined with multidisciplinary teamwork.

The problems addressed by designers when dealing with wicked subject matter seldom fell within the boundaries of *one* domain of knowledge. The very nature of design might force the breaking of silos (Buchanan, 1992). The notion of 'throwing a hand grenade at bureaucracy' (MindLab) is just one illustrative example. Norman and Stappers (2015) suggest that "In the best of cases, these different participants combine their expertise in creative, effective ways, often compromising goals and principles for the greater good. In the worst of cases, there can be strong ideological and political arguments behind the scenes that disrupt collaboration." Observed in the material of both cases is the role of designer, and function of design as an underpinning process, as connector across silos to set up collaboration as a purposeful activity. One of the challenges here is encouraging non-designers to harness the design process in their work.

Conclusion

Today, the majority of policy making processes do not reach conclusion or are deemed to fail even if their implementation is completed. Being a consequence of the social systems in which they are situated, the challenges public organisations face can be characterised as 'wicked'. Considering its failure rate, the strategies public organisations do adopt to craft policies for these challenges are not always successful, which means that policies are not as effective as initially intended (Bason, 2014).

This paper shows that the way in which designers think and do can be very valuable to the solution of wicked policy problems. We applied a wicked problems perspective to analyse two cases in order to reflect a holistic view of the challenges of development through new policy frameworks. Findings point toward the future role of designers' not specifically crafting policies alone, but as facilitators of multidisciplinary teams who are 'designing'. Multidisciplinary teams are needed for policy making because it ensures multiple perspectives on the problem are established and that breaking through knowledge and policy domain silos occurs daily. Design labs have taken on the role of stewards or guides, aiding public organisations in developing characteristics that are inherent in design, valuable to the mitigation of wicked policy problems, but not naturally present in public organisations: a holistic perspective, an interactive approach, and human-centeredness.

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